

Rebeca Gonzalez Suarez - Publication List

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Metrics

As of April 10, 2024 ¹:

	Citeable papers	Published only
Number of papers	1,329	1,245
Number of citations	169,427	168,931
Average citations per paper	127.5	135.7
h index	184	184

The contributions listed here are labeled when it corresponds using the following convention:

[PA = Primary Author; ED = Editor and Corresponding Author; C = Contributor; R = Review]

I am an ATLAS Collaboration author since 2019. I was an author of the CMS collaboration from 2006 until 2018.

Main publications

Publications in which I have had a personal contribution, in reverse chronological order.

Sparks in the Dark, *O. Sunneborn Gudnadottir, A. Gallén, G. Ripellino, J. Heinrich, R. Sainudiin, R. Gonzalez Suarez*, Submitted to Computing and Software for Big Science (CSBS), arXiv:2404.04138 [PA]

Focus topics for the ECFA study on Higgs / Top / EW factories, *J. de Blas, P. Koppenburg, J. List, F. Maltoni, et al.*, arXiv:2401.07564 [PA]

Report of the Topical Group on Physics Beyond the Standard Model at Energy Frontier for Snowmass 2021, *T. Bose, A. Boveia, C. Doglioni, et al.*, arXiv:2209.13128, Snowmass process 2022 (2022) [C]

The Present and Future Status of Heavy Neutral Leptons, *A. M. Abdullahi, P. B. Alzas, B. Batell, A. Boyarsky, S. Carbajal, A. Chatterjee, J. I. Crespo-Anadon, F. F. Deppisch, A. De Roeck and M. Drewes, et al.*, J.Phys.G 50 (2023) 2, 020501, arXiv:2203.08039, Snowmass process 2022 (2022) [PA]

The Road Ahead for CODEX-b, *G. Aielli, J. Alimena, J. Beachman et al.*, arXiv:2203.07316, Snowmass process 2022 (2022) [C]

The Future Circular Collider: a Summary for the US 2021 Snowmass Process, *G. Bernardi, E. Brost, D. Denisov, G. Landsberg, M. Aleksa, D. d'Enterria, P. Janot, M. L. Mangano, M. Selvaggi and F. Zimmermann, et al.*, arXiv:2203.06520, Snowmass process 2022 (2022) [PA]

¹Data from INSPIRE

Searches for Long-Lived Particles at the Future FCC-ee, *J. Alimena, P. Azzi, M. Bauer, A. Blondel, M. Drewes, R. Gonzalez Suarez, J. Klaric, S. Kulkarni, M. Neubert and C. Rizzi, et al.*, arXiv:2203.05502, Front. Phys. 10:967881 (2022), Snowmass process 2022 (2022) [PA, ED]

Measurement of the polarisation of single top quarks and antiquarks produced in the t-channel at $\sqrt{s} = 13$ TeV and bounds on the tWb dipole operator from the ATLAS experiment, *ATLAS Collaboration*, arXiv:2202.11382, JHEP 11 (2022) 040 [R - EB]

Hunt for rare processes and long-lived particles at FCC-ee, *Marcin Chrzaszcz, Rebeca Gonzalez Suarez, Stéphane Monteil*, arXiv:2106.15459, Eur. Phys. J. Plus 136, 1056 (2021) [PA, ED]

Searches for Long-Lived Particles at the FCC-ee Snowmass2021 - Letter of Interest. (2020) [PA, ED]

To catch a long-lived particle: hit selection towards a regional hardware track trigger implementation, *Mikael Mårtensson, Max Isacson, Hampus Hahne, Rebeca Gonzalez Suarez, Richard Brenner*, arXiv:1907.09846 JINST 14 P11009 (2019) [PA, ED]

Recent CMS results in top and Higgs physics, *Rebeca Gonzalez Suarez*, arXiv:1707.05054, Modern Physics Letters A, 2, Vol. 32, No. 29 (2017) 1730026 [PA, ED]

Measurement of the transverse momentum spectrum of the Higgs boson produced in pp collisions at $\sqrt{s} = 8$ TeV using H to WW decays, *CMS Collaboration*, arXiv:1606.01522, JHEP 03 (2017) 032 [R - Higgs to WW]

Measurement of the W boson helicity fractions in the decays of top quark pairs to lepton+jets final states produced in pp collisions at $\sqrt{s} = 8$ TeV, *CMS Collaboration*, arXiv:1605.09047, Phys. Lett. B 762 (2016) 512 [R - ARC]

Measurements of the Higgs boson production and decay rates and constraints on its couplings from a combined ATLAS and CMS analysis of the LHC pp collision data at $\sqrt{s} = 7$ and 8 TeV, *ATLAS and CMS Collaborations*, arXiv:1606.02266, JHEP 1608 (2016) 045. [C]

Search for Higgs boson off-shell production in proton-proton collisions at 7 and 8 TeV and derivation of constraints on its total decay width, *CMS Collaboration*, arXiv:1605.02329, JHEP 09 (2016) 051 [R - Higgs to WW]

500th paper of CMS

Search for s channel single top quark production in pp collisions at $\sqrt{s} = 7$ and 8 TeV, *CMS Collaboration*, arXiv:1603.02555, JHEP 09 (2016) 027 [R - Single Top]

Search for anomalous single top quark production in association with a photon in pp collisions at $\sqrt{s} = 8$ TeV, *CMS Collaboration*, arXiv:1511.03951, JHEP 04 (2016) 035 [R - Single Top]

Measurement of top quark polarisation in t-channel single top quark production, *CMS Collaboration*, arXiv:1511.02138, JHEP 04 (2016) 073 [R - Single Top]

Search for the associated production of a Higgs boson with a single top quark in proton-proton collisions at $\sqrt{s} = 8$ TeV, *CMS Collaboration*, arXiv:1509.08159, JHEP06(2016)177 [C, R-ARC]

Measurement of the Charge Asymmetry in Top Quark Pair Production in pp Collisions at $\sqrt{s} = 8$ TeV using a Template Method, *CMS Collaboration*, arXiv:1508.03862, Phys. Rev. D 93, 034014 (2016) [R-ARC]

Search for a standard model Higgs boson produced in association with a top-quark pair and decaying to bottom quarks using a matrix element method, *CMS Collaboration*, arXiv:1502.02485, Eur. Phys. J. C 75 (2015) 251 [R-ARC]

Precise determination of the mass of the Higgs boson and tests of compatibility of its couplings with the standard model predictions using proton collisions at 7 and 8 TeV, *CMS Collaboration*, arXiv:1412.8662, Eur. Phys. J. C 75 (2015) 212 [C]

Constraints on the spin-parity and anomalous HVV couplings of the Higgs boson in proton collisions at 7 and 8 TeV, *CMS Collaboration*, arXiv:1411.3441, Phys. Rev. D 92, 012004 (2015) [PA, ED]

Measurement of the W boson helicity in events with a single reconstructed top quark in pp collisions at $\sqrt{s} = 8$ TeV, *CMS Collaboration*, arXiv:1410.1154, JHEP01(2015)053 [R - Single Top]

Search for monotop signatures in proton-proton collisions at $\sqrt{s} = 8$ TeV, *CMS Collaboration*, arXiv:1410.1149, Phys. Rev. Lett. 114, 101801 (2015) [R - Chair of the Review]

Observation of the associated production of a single top quark and a W boson in pp collisions at $\sqrt{s} = 8$ TeV, *CMS Collaboration*, arXiv:1401.2942, Phys. Rev. Lett. 112, 231802. [PA]

Measurement of the t-channel single-top-quark production cross section and of the $|V_{tb}|$ CKM matrix element in pp collisions at $\sqrt{s} = 8$ TeV, *CMS Collaboration*, arXiv:1403.7366, JHEP 06 (2014) 090 [R - Single top]

Searches for electroweak production of charginos, neutralinos, and sleptons decaying to leptons and W, Z, and Higgs bosons in pp collisions at 8 TeV, *CMS Collaboration*, arXiv:1405.7570, Eur. Phys. J. C 74 (2014) [R-ARC]

Measurement of Higgs boson production and properties in the WW decay channel with leptonic final states, *CMS Collaboration*, arXiv:1312.1129, JHEP 01(2014)096 [PA]

Snowmass 2013 Top quark working group report, (*Top Quark Working Group Collaboration*), Snowmass process 2013 (2013) arXiv:1311.2028 [C]

Observation of a new boson with mass near 125 GeV in pp collisions at $\sqrt{s} = 7$ and 8 TeV, *CMS Collaboration*, arXiv:1303.4571, JHEP 1306 (2013) 081 [C]

Evidence for associated production of a single top quark and W boson in pp collisions at 7 TeV, *CMS Collaboration*, arXiv:1209.3489, Phys. Rev. Lett. 110, 022003 (2013) [PA, ED]

Search for electroweak production of charginos and neutralinos using leptonic final states in pp collisions at $\sqrt{s} = 7$ TeV, *CMS Collaboration*, arXiv:1209.6620, JHEP 1211 (2012) 147 [R-ARC]

Observation of a new boson at a mass of 125 GeV with the CMS experiment at the LHC, *CMS Collaboration*, arXiv:1207.7235, Phys.Lett. B716 (2012) 30-61 [C]

Search for physics beyond the standard model in events with a Z boson, jets, and missing transverse energy in pp collisions at $\sqrt{s} = 7$ TeV, *CMS Collaboration*, arXiv:1204.3774, Physics Letters B 716 (2012) 260-284 [R-ARC]

Search for the standard model Higgs boson decaying to a W pair in the fully leptonic final state in pp collisions at $\sqrt{s} = 7$ TeV, *CMS Collaboration*, arXiv:1202.1489, Phys.Lett. B 710 (2012) 91-113 [C]

Measurement of the $t\bar{t}$ Production Cross Section in pp Collisions at 7 TeV in Lepton + Jets Events Using b-quark Jet Identification, *CMS Collaboration*, arXiv:1108.3773, Phys.Rev. D84 (2011) 092004 [C]

Measurement of W^+W^- Production and Search for the Higgs Boson in pp Collisions at $\sqrt{s} = 7$ TeV, *CMS Collaboration*, arXiv:1102.5429, Phys.Lett. B 699 (2011) 25-47 [C]

ATLAS Conference Notes

ATLAS Conference Notes in which I had a relevant contribution in reverse chronological order. This kind of document is reviewed by a board of four referees and circulated to the Collaboration before being made public:

'Search for dark mesons decaying to top and bottom quarks with the ATLAS detector in 140 fb^{-1} of proton-proton collisions at $\sqrt{s} = 13$ TeV' - ATLAS-CONF-2023-021 - [C]

CMS Public Analysis Summaries

CMS Public Analysis Summaries in which I had a relevant contribution in reverse chronological order. This kind of document is reviewed by a board of four referees and circulated to the Collaboration before being made public:

'Higgs to WW measurements with 15.2 fb^{-1} of 13 TeV proton-proton collisions' - HIG-16-021 - [C - Higgs to WW]

'Search for Higgs boson pair production in the $b\bar{b}l\nu l\nu$ final state at $\sqrt{s} = 13$ TeV' - HIG-16-024 - [R - Higgs to WW]

'Search for high mass Higgs to WW with fully leptonic decays using 2015 data' - HIG-16-023 [R - Higgs to WW]

'Search for associated production of Higgs bosons and top quarks in multilepton final states at $\sqrt{s} = 13$ TeV' - HIG-16-022 [R - Higgs to WW]

'Search for associated production of a Z boson with a single top quark and for tZ flavour-changing interactions in pp collisions at $\sqrt{s} = 8$ TeV' - TOP-12-039 [R - Single top]

'Measurement of the top quark mass in the dileptonic $t\bar{t}$ decay channel using the Mbl, MT2, and MAOS

Mblv observables'- TOP-15-008 [R-ARC] [Chair of the review]

'First results on Higgs to WW at $\sqrt{s} = 13$ TeV' - HIG-15-003 [ED- HWW]

'Combination of cross-section measurements of associated production of a single top quark and a W boson at $\sqrt{s} = 8$ TeV with the ATLAS and CMS experiments' - TOP-15-019 [C]

'Search for resonant Higgs boson pair production in the $b\bar{b}l\nu l\nu$ final state at $\sqrt{s} = 13$ TeV' - HIG-16-011 [R - Higgs to WW]

'Search for ttH production in multilepton final states at $\sqrt{s} = 13$ TeV' - HIG-15-008 [C, R - HWW]

'Measurement of the top quark mass from single-top production events' - TOP-15-001 [R-ARC] [Chair of the review]

'Measurement of the transverse momentum spectrum of the Higgs boson produced in pp collisions at $\sqrt{s} = 8$ TeV using the $H \rightarrow WW$ decays' (CMS-PAS-HIG-15-010) [R - Higgs to WW]

'Measurement of the top-quark mass from the b jet energy spectrum' (CMS-PAS-TOP-15-002) [R-ARC] [Chair of the review]

'Measurements of the Higgs boson production and decay rates and constraints on its couplings from a combined ATLAS and CMS analysis of the LHC pp collision data at $\sqrt{s} = 7$ and 8 TeV' (CMS-PAS-HIG-15-002) [C]

'Measurement of the W boson helicity using $t\bar{t}$ events in the dilepton final state at $\sqrt{s} = 8$ TeV' CMS-PAS-TOP-14-017 [R-ARC] [Chair of the review]

'Measurements of the differential cross section of single top-quark production in the t channel in proton-proton collisions at $\sqrt{s} = 8$ TeV' (CMS-PAS-TOP-14-004) [R - Single top]

'Search for $H \rightarrow b\bar{b}$ in association with single top quarks as a test of Higgs boson couplings' (CMS-PAS-HIG-14-015) [C]

'Combination of cross-section measurements of associated production of a single top-quark and a W boson at $\sqrt{s} = 8$ TeV with the ATLAS and CMS experiments' (CMS-PAS-TOP-14-009) [C, R - Single top]

'Constraints on Anomalous HWW Interactions using Higgs boson decays to $W+W-$ in the fully leptonic final state' (CMS-PAS-HIG-14-012) [PA, ED]

'Constraints on anomalous HVV interactions using H to 4l decays' (CMS-PAS-HIG-14-014) [C]

'Search for $t\bar{t}H$ events in the $H \rightarrow b\bar{b}$ final state using the Matrix Element Method' (CMS-PAS- HIG-14-010) [R-ARC]

'Search for anomalous Wtb couplings and top FCNC in t-channel single-top-quark events' (CMS-PAS-TOP-14-007) [R - Single top]

'Search for anomalous single top quark production in association with a photon' (CMS-PAS-TOP-14-003)

[R - Single top]

'Search for new physics with monotop final states in pp collisions at $\sqrt{s} = 8$ TeV' (CMS-PAS- B2G-12-022) [R-ARC] [Chair of the review]

'Search for associated production of a single top quark and a Higgs boson in events where the Higgs boson decays to two photons at $\sqrt{s} = 8$ TeV' (CMS-PAS-HIG-14-001) [R-ARC]

'Projections for Top FCNC Searches in $3000fb^{-1}$ at the LHC' (CMS-PAS-FTR-13-016) [R-ARC]

'Sensitivity study of the prospects for searching for heavy vector-like charge 2/3 quarks at $\sqrt{s} = 14$ TeV with the upgraded CMS detector' (CMS-PAS-FTR-13-026) [R-ARC]

'Projected improvement of the accuracy of top-quark mass measurements at the upgraded LHC' (CMS-PAS-FTR-13-017) [R-ARC]

'CMS reach in $B_s^0 \rightarrow \mu^+ \mu^-$ and $B^0 \rightarrow \mu^+ \mu^-$ branching fractions for the new LHC runs' (CMS-PAS-FTR-13-022) [R-ARC]

'Search for s-channel single top-quark production in pp collisions at $\sqrt{s} = 8$ TeV' (CMS-PAS-TOP-13-009) [R - Single top]

'Measurement of top quark polarization in t-channel single-top production' (CMS-PAS-TOP-13-001) [R - Single top]

'Combination of single top-quark cross-sections measurements in the t-channel at $\sqrt{s} = 8$ TeV with the ATLAS and CMS experiments' (CMS-PAS-TOP-12-002) [R - Single top]

'Search for electroweak production of charginos and neutralinos using leptonic final states' (CMS-PAS-SUS-13-006) [R-ARC]

'Observation of Associated Production of a Single Top Quark and W Boson in pp Collisions at $\sqrt{s} = 8$ TeV' (CMS-PAS-TOP-12-040) [PA]

'Search for Flavor-Changing Neutral Currents in tZ events in proton-proton collisions at $\sqrt{s} = 7$ TeV' (CMS-PAS-TOP-12-021) [R - Single top]

'Search for electroweak production of charginos, neutralinos and sleptons using leptonic final states in pp collisions at $\sqrt{s} = 8$ TeV' (CMS-PAS-SUS-12-022) [R-ARC]

'Measurement of the single-top t-channel charge ratio at 8 TeV' (CMS-PAS-TOP-12-038) [R - Single top]

'Measurement of W-helicity fractions in single top events topology' (CMS-PAS-TOP-12-020) [R - Single top]

'Search for single top tW associated production in the dilepton decay channel in pp collisions at $\sqrt{s} = 7$ TeV' (CMS-PAS-TOP-11-022) [PA, ED]

'Search for Physics Beyond the Standard Model in Z+MET+Jets events at the LHC' (CMS-PAS-SUS-11-

019) [R-ARC]

'Measurement of the top-quark pair-production cross section in the lepton+jets channel with the use of b-tagging' (CMS-PAS-TOP-10-003) [C]

'Measurement of the top-quark pair-production cross section in the di-lepton channel at 7 TeV' (CMS-PAS-TOP-10-005) [C]

'Search for $H \rightarrow WW \rightarrow 2l 2\nu$ ' (CMS-PAS-HIG-10-003) [C]

'Observation of WW final state' (CMS-PAS-EWK-009) [C]

'Performance of muon identification in pp collisions at $\sqrt{s} = 7$ TeV' (CMS-PAS-MUO-10-002) [PA]

'Search Strategy for a Standard Model Higgs Boson Decaying to Two W Bosons in the Fully Leptonic Final State' (CMS-PAS-HIG-08-006) [PA]

'Search for the Higgs boson in the WW decay channel with the CMS experiment' (CMS-PAS-HIG-07-001) [PA]

Conference proceedings

The Future Circular Collider (FCC) at CERN, *Rebeca Gonzalez Suarez*, Proceedings for the 7th Symposium on Prospects in the Physics of Discrete Symmetries (DISCRETE 2020-2021), arXiv:2204.10029

Long-Lived Particles at Future Colliders, *Rebeca Gonzalez Suarez*, Proceedings for the XXVII Epiphany Conference Acta Phys. Pol. B 52, 953 (2021), arXiv:2102.07597

Run-1 Single-top measurements at CMS, *Rebeca Gonzalez Suarez*, Proceedings DPF 2015, arXiv:1510.05235

Inclusive single top cross section at the LHC, *Rebeca Gonzalez Suarez on behalf of the CMS and ATLAS collaborations*, Proceedings TOP 2013, DOI:10.3204/DESY-PROC-2014-02/16

Single top Production at $\sqrt{s} = 7$ TeV, *Rebeca Gonzalez Suarez on behalf of the CMS, ATLAS collaborations*, Proceedings Moriond 2012, arXiv:1205.2786

Higgs search prospects at the LHC, *Rebeca Gonzalez Suarez*, Proceedings BEACH 2010, Nucl.Phys.Proc.Suppl. 210-211 (2011) 283-288

Discovery Potential for the SM Higgs Boson in the $H \rightarrow WW^* \rightarrow 2l2\nu$ channel at LHC, *Rebeca Gonzalez Suarez*, Proceedings ICHEP 2008, arXiv:0810.1468

A Software and Computing prototype for CMS Muon System alignment, (*Iban Cabrillo, Isidro Gonzalez Caballero, Rebeca Gonzalez Suarez...*), Proceedings CHEP 2007, Journal of Physics: Conference Series 119 (2008) 072008

Publications from top

Publications submitted to journals during (or shortly after) my period as convener of the top quark physics analysis group in CMS (2016-2018), in reverse chronological order:

Search for new physics in top quark production in dilepton final states in proton-proton collisions at $\sqrt{s} = 13$ TeVs *CMS Collaboration*, Eur. Phys. J. C 79 (2019) 886, arXiv:1903.11144

Combinations of single-top-quark production cross-section measurements and $|f_{LV}V_{tb}|$ determinations at $\sqrt{s} = 7$ and 8 TeV with the ATLAS and CMS experiments *ATLAS and CMS Collaborations*, JHEP 05 (2019) 088, arXiv:1902.07158

Measurement of the single top quark and antiquark production cross sections in the t channel and their ratio in proton-proton collisions at $\sqrt{s} = 13$ TeV *CMS Collaboration*, Phys. Lett. B 800 (2019) 135042, arXiv:1812.10514

Measurement of the top quark mass in the all-jets final state at $\sqrt{s} = 13$ TeV and combination with the lepton+jets channel *CMS Collaboration*, Eur. Phys. J. C 79 (2019) 313, arXiv:1812.10534

Measurement of the $t\bar{t}$ production cross section, the top quark mass, and the strong coupling constant using dilepton events in pp collisions at $\sqrt{s} = 13$ TeV *CMS Collaboration*, Eur. Phys. J. C 79 (2019) 368, arXiv:1812.10505

Measurements of $t\bar{t}$ differential cross sections in proton-proton collisions at $\sqrt{s} = 13$ TeV using events containing two leptons *CMS Collaboration*, JHEP 02 (2019) 149, arXiv:1811.06625

Measurement of jet substructure observables in $t\bar{t}$ events from proton-proton collisions at $\sqrt{s} = 13$ TeV *CMS Collaboration*, Phys. Rev. D 98, 092014 (2018), arXiv:1808.073403

Evidence for the associated production of a single top quark and a photon in proton-proton collisions at $\sqrt{s} = 13$ TeV *CMS Collaboration*, Phys. Rev. Lett. 121, 221802 (2018), arXiv:1808.02913

Study of the underlying event in top quark pair production in pp collisions at 13 TeV *CMS Collaboration*, Eur. Phys. J. C 79 (2019) 123 arXiv:1807.02810

Measurement of the production cross section for single top quarks in association with W bosons in proton-proton collisions at $\sqrt{s} = 13$ TeV *CMS Collaboration*, JHEP 10 (2018) 117, arXiv:1805.07399

Measurement of the top quark mass with lepton+jets final states using pp collisions at $\sqrt{s} = 13$ TeV *CMS Collaboration*, Eur. Phys. J. C 78 (2018) 891, arXiv:1805.01428

Measurement of differential cross sections for the production of top quark pairs and of additional jets in lepton+jets events from pp collisions at $\sqrt{s} = 13$ TeV *CMS Collaboration*, Phys. Rev. D 97, 112003 (2018), arXiv:1803.08856

Measurements of differential cross sections of top quark pair production as a function of kinematic event variables in proton-proton collisions at $\sqrt{s} = 13$ TeV *CMS Collaboration*, JHEP 06 (2018) 002, arXiv:1803.03991

Measurement of the associated production of a single top quark and a Z boson in pp collisions

sions at $\sqrt{s} = 13$ TeV *CMS Collaboration*, Phys.Lett. B779 (2018) 358-384, arXiv:1712.02825

Search for the flavor-changing neutral current interactions of the top quark and the Higgs boson which decays into a pair of b quarks at $\sqrt{s} = 13$ TeV *CMS Collaboration*, JHEP 06 (2018) 102, arXiv:1712.02399

Measurement of the inclusive $t\bar{t}$ cross section in pp collisions at $\sqrt{s} = 5.02$ TeV using final states with at least one charged lepton *CMS Collaboration*, JHEP 03 (2018) 115, arXiv:1711.03143

Measurement of the cross section for top quark pair production in association with a W or Z boson in proton-proton collisions at $\sqrt{s} = 13$ TeV *CMS Collaboration*, JHEP 08 (2018) 011, arXiv:1711.02547

Search for standard model production of four top quarks with same-sign and multilepton final states in proton-proton collisions at $\sqrt{s} = 13$ TeV *CMS Collaboration*, Eur. Phys. J. C (2018) 78: 140, arXiv:1710.10614

Combination of inclusive and differential $t\bar{t}$ charge asymmetry measurements using ATLAS and CMS data at $\sqrt{s} = 7$ and 8 TeV *CMS and ATLAS Collaborations*, JHEP 04 (2018) 033, arXiv:1709.05327

Measurement of normalized differential $t\bar{t}$ cross sections in the dilepton channel from pp collisions at $\sqrt{s} = 13$ TeV *CMS Collaboration*, JHEP 04 (2018) 060, arXiv:1708.07638

Measurement of the semileptonic $t\bar{t} + \gamma$ production cross section in pp collisions at $\sqrt{s} = 8$ TeV *CMS Collaboration*, JHEP 10 (2017) 006, arXiv:1706.08128

Measurements of $t\bar{t}$ cross sections in association with b jets and inclusive jets and their ratio using dilepton final states in pp collisions at $\sqrt{s} = 13$ TeV *CMS Collaboration*, Phys. Lett. B 776 (2017) 355, arXiv:1705.10141

Measurement of the top quark mass in the dileptonic $t\bar{t}$ decay channel using the mass observables M_{bl} , M_{T2} , and M_{lb} in pp collisions at $\sqrt{s} = 8$ TeV *CMS Collaboration*, Phys. Rev. D 96 (2017) 032002, arXiv:1704.06142

Measurement of the jet mass in highly boosted $t\bar{t}$ events from pp collisions at $\sqrt{s} = 8$ TeV *CMS Collaboration*, Eur. Phys. J. C 77 (2017) 467, arXiv:1703.06330

Measurement of the top quark mass using single top quark events in proton-proton collisions at $\sqrt{s} = 8$ TeV *CMS Collaboration*, EPJC 77 (2017) 354, arXiv:1703.02530

Measurement of double-differential cross sections for top quark pair production in pp collisions at $\sqrt{s} = 8$ TeV and impact on parton distribution functions *CMS Collaboration*, EPJC 77 (2017) 459, arXiv:1703.01630

Search for standard model production of four top quarks in proton-proton collisions at $\sqrt{s} = 13$ TeV, *CMS Collaboration*, Phys. Lett. B 772 (2017) 336, arXiv:1702.06164

Search for associated production of a Z boson with a single top quark and for tZ flavour-changing interactions in pp collisions at $\sqrt{s} = 8$ TeV, *CMS Collaboration*, JHEP 07 (2017) 003, arXiv:1702.01404

Measurement of the $t\bar{t}$ production cross section using events with one lepton and at least one jet in pp collisions at $\sqrt{s}=13$ TeV, CMS Collaboration, JHEP 09 (2017) 051, arXiv:1701.06228

Search for CP violation in $t\bar{t}$ production and decay in proton-proton collisions at $\sqrt{s} = 8$ TeV, CMS Collaboration, JHEP 03 (2017) 101, arXiv:1611.08931

Measurement of the $t\bar{t}$ production cross section using events in the $e\mu$ final state in pp collisions at $\sqrt{s} = 13$ TeV, CMS Collaboration, EPJC 77 (2017) 172, arXiv:1611.04040

Measurement of the mass difference between top quark and antiquark in pp collisions at $\sqrt{s} = 8$ TeV, CMS Collaboration, Phys. Lett. B 770 (2017) 50, arXiv:1610.09551

Search for top quark decays via Higgs-boson-mediated flavor-changing neutral currents in pp collisions at $\sqrt{s} = 8$ TeV, CMS Collaboration, JHEP 02 (2017) 079, arXiv:1610.04857

Measurement of differential cross sections for top quark pair production using the lepton+jets final state in proton-proton collisions at 13 TeV, CMS Collaboration, Phys. Rev. D 95, 092001 (2017), arXiv:1610.04191

Cross section measurement of t-channel single top quark production in pp collisions at $\sqrt{s} = 13$ TeV, CMS Collaboration, Phys. Lett. B 772 (2017) 752, arXiv:1610.00678

Public top results

Public analysis summaries made public during my convenership of the top quark physics analysis group in CMS, in reverse chronological order:

'Measurement of the single top quark and antiquark production cross sections in the t channel and their ratio in pp collisions at $\sqrt{s} = 13$ TeV' TOP-17-011

'Measurement of the top quark mass in the all-jets final state at $\sqrt{s} = 13$ TeV' TOP-17-008

'Measurements of differential cross sections for $t\bar{t}$ production in proton-proton collisions at $\sqrt{s} = 13$ TeV using events containing two leptons' TOP-17-014

'Search for top+photon production in pp collisions at 13 TeV in the muon+jets channel' TOP-17-016

'Study of the underlying event in top quark pair production at $\sqrt{s} = 13$ TeV' TOP-17-015

'Measurement of jet substructure observables in $t\bar{t}$ events from pp collisions at $\sqrt{s} = 13$ TeV' TOP-17-013

'Search for the flavor-changing interactions of the top quark with the Higgs boson in $H \rightarrow b\bar{b}$ channel at $\sqrt{s} = 13$ TeV' TOP-17-003

'Evidence for the standard model production of a Z boson with a single top quark in pp collisions at $\sqrt{s} = 13$ TeV' TOP-16-020

'Measurement of the production cross section for single top quarks in association with W bosons in pp collisions at $\sqrt{s} = 13$ TeV' TOP-17-018

'Measurement of the top quark mass with lepton+jets final states in pp collisions at $\sqrt{s} = 13$ TeV' TOP-17-007

'Measurement of differential cross sections for top quark pair production and associated jets using the lepton+jets final state in proton-proton collisions at 13 TeV' TOP-17-002

'Search for the standard model production of four top quarks with same-sign and multilepton final states in proton-proton collisions at $\sqrt{s} = 13$ TeV' TOP-17-009

'Measurement of the differential $t\bar{t}$ cross section with high- p_T top-quark jets in the all-hadronic channel at $\sqrt{s} = 8$ TeV' TOP-16-018

'Measurement of the differential cross sections of top quark pair production as a function of kinematic event variables in pp collisions at $\sqrt{s} = 13$ TeV' TOP-16-014

'Measurement of top quark pair-production in association with a W or Z boson in pp collisions at 13 TeV' TOP-17-005

'Measurement of the inclusive $t\bar{t}$ cross section at $\sqrt{s} = 5.02$ TeV' TOP-16-023

'Measurement of the top quark mass with muon+jets final states in pp collisions at $\sqrt{s} = 13$ TeV'

(TOP-16-022)

'Investigations of the impact of the parton shower tuning in Pythia 8 in the modelling of $t\bar{t}$ at $\sqrt{s}=8$ and 13 TeV' (TOP-16-021)

'Combinations of the CMS alternative technique measurements of the top quark mass' (TOP-15-012)

'Bounding the top quark width using final states with two charged leptons and two jets at $\sqrt{s} = 13$ TeV ' (TOP-16-019)

'Measurement of the $t\bar{t} + \gamma$ production cross-section in pp collisions at $\sqrt{s} = 8$ TeV' (TOP-14-008)

'Measurement of the jet mass distribution in boosted $t\bar{t}$ production at $\sqrt{s} = 8$ TeV' (TOP-15-015)

Internal Analysis Notes

Internal notes that I am an author of in reverse chronological order:

ATL-COM-PHYS-2020-136 - 'Search for dark mesons decaying to top and bottom quarks with the ATLAS detector in 139 fb^{-1} of proton-proton collisions at $\sqrt{s}=13 \text{ TeV}$ ' (*Dark Meson team*) [C]

CMS AN-2015/300 - 'Higgs Boson decaying to WW in the leptonic final state at 13 TeV' (*HWW team*) [ED]

CMS AN-2015/299 - 'Common analysis object definitions and triggers efficiencies for the $H \rightarrow WW$ Run-2 analysis' (*HWW team*) [ED]

CMS AN-2015/321 - 'Search for ttH in multilepton final states at 13 TeV' (*Anne-Catherine Le Bihan et al.*) [C]

CMS AN-2013/113 - 'Search for $H \rightarrow bb$ in association with single top quarks as a test of Higgs boson couplings' (*A. Anuar, A. Bean et al.*) [C]

CMS AN-2014/083 - 'Spin Parity of the Higgs Boson and Tensor Structure of the HWW interaction in the $H \rightarrow WW$ dileptonic decay channel' (*Rebeca Gonzalez Suarez et al.*) [PA-ED]

CMS AN-2013/096 - 'Study of associated Higgs boson (ZH) production in the three leptons, two jets final state at 7 and 8 TeV' (*Rebeca Gonzalez Suarez et al.*) [PA-ED]

CMS AN-2012/458 - 'Single top associated tW production at 8 TeV' (*Rebeca Gonzalez Suarez et al.*) [PA-ED]

CMS AN-2012/060 - 'Search for single top tW production using a boosted decision tree method in the dilepton channel' (*Rebeca Gonzalez Suarez et al.*) [C]

CMS AN-2011/465 - 'Search for the Single top tW associated production in the dilepton decay channel with the full 2011 dataset' (*Rebeca Gonzalez Suarez et al.*) [PA-ED]

CMS AN-2011/253 - 'Search for the Single top tW associated production in the dilepton decay channel' (*Rebeca Gonzalez Suarez et al.*) [PA-ED]

CMS AN2010/281 - 'A measurement of $t\bar{t}$ cross section in early 7 TeV data using the semileptonic topology: electron plus jets with one or more b-tags, using 36 pb^{-1} of CMS data.' (*M. Barrett, F. Blekman et al.*) [C-ED]

CMS AN2010/411 - 'Search for Higgs Boson Decays to Two W Bosons in the Fully Leptonic Final State at $\sqrt{(s)} = 7 \text{ TeV}$ ' (*G. Bauer, J. Bendavid et al.*) [C]

CMS AN2010/344 - 'First Measurement of $pp \rightarrow WW$ Production Cross-Section at $\sqrt{(s)} = 7 \text{ TeV}$ ' (*W. Andrews, D. Barge et al.*) [C]

CMS AN2010/406 - 'Measurement of the $t\bar{t}$ cross section in the dilepton final state using b-tagging at $\sqrt{s} = 7 \text{ TeV}$ ' (*J. Brochero, A. Calderón et al.*) [C-ED]

CMS AN 2010/008 - 'The CMS physics reach for searches at 7 TeV' (*CMS Collaboration*) [PA]

CMS AN 2009/139 - 'Search Strategy for a Standard Model Higgs Boson Decaying to Two W Bosons in the Fully Leptonic Final State at $\sqrt{s} = 10$ TeV' (*G. Bauer, J. Bendavid et al.*)

CMS AN-2009/185 - 'Analysis strategy for the measurement of the $WW \rightarrow \mu\nu\mu\nu$ cross-section with 200 pb^{-1} at center of mass energy of 10 TeV' (*C.Jorda, R. Villar et al.*) [C]

CMS AN-2009/025 - 'Analysis strategy for the measurement of the $WW \rightarrow \mu\nu\mu\nu$ cross-section' (*C.Jorda, R. Villar et al.*) [C]

CMS AN-2009/020 - 'Projected exclusion limits on the SM Higgs boson cross sections obtained by combining the $H \rightarrow WW$ and ZZ decay channels' (*S. Baffioni, C. Botta et al.*) [PA]

CMS AN-2008/074 - 'Measurement of muon charge asymmetry in the $W \rightarrow \mu\nu$ channel' (*J. Alcaraz, M.I. Josa et al.*) [C]

CMS AN-2008/039 - 'Search Strategy for a Standard Model Higgs Boson Decaying to Two W Bosons in the Fully Leptonic Final State' (*C. Charlot, J. Cuevas et al.*) [PA]

CMS AN-2007/037 - 'Search for the Higgs boson in the WW decay channel with the CMS experiment' (*C. Charlot, J. Cuevas et al.*) [PA]

Full Publication list

Full list of publications of which I am an author, in reverse chronological order:

- G. Aad *et al.* [ATLAS], "Precise measurements of W^- and Z -boson transverse momentum spectra with the ATLAS detector using pp collisions at $\sqrt{s} = 5.02$ TeV and 13 TeV," [arXiv:2404.06204 [hep-ex]].
- G. Aad *et al.* [ATLAS], "Software and computing for Run 3 of the ATLAS experiment at the LHC," [arXiv:2404.06335 [hep-ex]].
- G. Aad *et al.* [ATLAS], "Characterising the Higgs boson with ATLAS data from Run 2 of the LHC," [arXiv:2404.05498 [hep-ex]].
- O. Sunneborn Gudnadottir, A. Gallén, G. Ripellino, J. J. Heinrich, R. Sainudiin and R. Gonzalez Suarez, "Sparks in the Dark," [arXiv:2404.04138 [hep-ex]].
- G. Aad *et al.* [ATLAS], "Search for pair-produced higgsinos decaying via Higgs or Z bosons to final states containing a pair of photons and a pair of b -jets with the ATLAS detector," [arXiv:2404.01996 [hep-ex]].
- G. Aad *et al.* [ATLAS], "Search for flavour-changing neutral-current couplings between the top quark and the Higgs boson in multi-lepton final states in 13 TeV pp collisions with the ATLAS detector," [arXiv:2404.02123 [hep-ex]].
- G. Aad *et al.* [ATLAS], "Search for light long-lived particles in pp collisions at $\sqrt{s} = 13$ TeV using displaced vertices in the ATLAS inner detector," [arXiv:2403.15332 [hep-ex]].
- G. Aad *et al.* [ATLAS], "Measurements of electroweak $W^\pm Z$ boson pair production in association with two jets in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector," [arXiv:2403.15296 [hep-ex]].
- G. Aad *et al.* [ATLAS], "Measurements of the production cross-section for a Z boson in association with b - or c -jets in proton-proton collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector," [arXiv:2403.15093 [hep-ex]].
- G. Aad *et al.* [ATLAS], "Measurement of the W -boson mass and width with the ATLAS detector using proton-proton collisions at $\sqrt{s} = 7$ TeV," [arXiv:2403.15085 [hep-ex]].
- G. Aad *et al.* [ATLAS], "Measurement of vector boson production cross sections and their ratios using pp collisions at $\sqrt{s} = 13.6$ TeV with the ATLAS detector," [arXiv:2403.12902 [hep-ex]].
- G. Aad *et al.* [ATLAS], "Exploration at the high-energy frontier: ATLAS Run 2 searches investigating the exotic jungle beyond the Standard Model," [arXiv:2403.09292 [hep-ex]].
- G. Aad *et al.* [ATLAS], "Measurements of inclusive and differential cross-sections of $t\bar{t}\gamma$ production in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector," [arXiv:2403.09452 [hep-ex]].
- G. Aad *et al.* [ATLAS], "Search for low-mass resonances decaying into two jets and produced in association with a photon or a jet at $\sqrt{s} = 13$ TeV with the ATLAS detector," [arXiv:2403.08547 [hep-ex]].
- G. Aad *et al.* [ATLAS], "Search for charged-lepton-flavour violating $\mu\tau qt$ interactions in top-quark production and decay in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector at the LHC," [arXiv:2403.06742

[hep-ex]].

G. Aad *et al.* [ATLAS], “Observation of electroweak production of W^+W^- in association with jets in proton-proton collisions at $\sqrt{s} = 13$ TeV with the ATLAS Detector,” [arXiv:2403.04869 [hep-ex]].

G. Aad *et al.* [ATLAS], “Differential cross-sections for events with missing transverse momentum and jets measured with the ATLAS detector in 13 TeV proton-proton collisions,” [arXiv:2403.02793 [hep-ex]].

G. Aad *et al.* [ATLAS], “Fiducial and differential cross-section measurements of electroweak $W\gamma jj$ production in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector,” [arXiv:2403.02809 [hep-ex]].

G. Aad *et al.* [ATLAS], “Precise test of lepton flavour universality in W -boson decays into muons and electrons in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector,” [arXiv:2403.02133 [hep-ex]].

G. Aad *et al.* [ATLAS], “Measurement of t -channel production of single top quarks and antiquarks in pp collisions at 13 TeV using the full ATLAS Run 2 data sample,” [arXiv:2403.02126 [hep-ex]].

G. Aad *et al.* [ATLAS], “The quest to discover supersymmetry at the ATLAS experiment,” [arXiv:2403.02455 [hep-ex]].

G. Aad *et al.* [ATLAS], “Searches for exclusive Higgs boson decays into $D^*\gamma$ and Z boson decays into $D^0\gamma$ and $K_s^0\gamma$ in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector,” [arXiv:2402.18731 [hep-ex]].

G. Aad *et al.* [ATLAS], “Studies of the energy dependence of diboson polarization fractions and the Radiation Amplitude Zero effect in WZ production with the ATLAS detector,” [arXiv:2402.16365 [hep-ex]].

G. Aad *et al.* [ATLAS], “Search for high-mass resonances in final states with a τ -lepton and missing transverse momentum with the ATLAS detector,” [arXiv:2402.16576 [hep-ex]].

G. Aad *et al.* [ATLAS], “Search for invisible particles produced in association with single top quarks in proton-proton collisions at $\sqrt{s}=13$ TeV with the ATLAS detector,” [arXiv:2402.16561 [hep-ex]].

G. Aad *et al.* [ATLAS], “Search for a new Z' gauge boson via the $pp \rightarrow W^{\pm(*)} \rightarrow Z'\mu^{\pm}\nu \rightarrow \mu^{\pm}\mu^{\mp}\mu^{\pm}\nu$ process in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector,” [arXiv:2402.15212 [hep-ex]].

G. Aad *et al.* [ATLAS], “Measurements of Lund subjet multiplicities in 13 TeV proton-proton collisions with the ATLAS detector,” [arXiv:2402.13052 [hep-ex]].

G. Aad *et al.* [ATLAS], “A search for top-squark pair production, in final states containing a top quark, a charm quark and missing transverse momentum, using the 139 fb^{-1} of pp collision data collected by the ATLAS detector,” [arXiv:2402.12137 [hep-ex]].

G. Aad *et al.* [ATLAS], “Combination of searches for heavy spin-1 resonances using 139 fb^{-1} of proton-proton collision data at $\sqrt{s} = 13$ TeV with the ATLAS detector,” [arXiv:2402.10607 [hep-ex]].

G. Aad *et al.* [ATLAS], “A statistical combination of ATLAS Run 2 searches for charginos and neutralinos at the LHC,” [arXiv:2402.08347 [hep-ex]].

G. Aad *et al.* [ATLAS], “Performance of the ATLAS forward proton Time-of-Flight detector in Run 2,”

[arXiv:2402.06438 [physics.ins-det]].

G. Aad *et al.* [ATLAS], “Interpretations of the ATLAS measurements of Higgs boson production and decay rates and differential cross-sections in pp collisions at $\sqrt{s} = 13$ TeV,” [arXiv:2402.05742 [hep-ex]].

G. Aad *et al.* [ATLAS], “The performance of missing transverse momentum reconstruction and its significance with the ATLAS detector using 140 fb^{-1} of $\sqrt{s} = 13$ TeV pp collisions,” [arXiv:2402.05858 [hep-ex]].

G. Aad *et al.* [ATLAS], “ATLAS Run 2 searches for electroweak production of supersymmetric particles interpreted within the pMSSM,” [arXiv:2402.01392 [hep-ex]].

G. Aad *et al.* [ATLAS], “Determination of the relative sign of the Higgs boson couplings to W and Z bosons using WH production via vector-boson fusion with the ATLAS detector,” [arXiv:2402.00426 [hep-ex]].

G. Aad *et al.* [ATLAS], “Search for electroweak production of supersymmetric particles in final states with two τ -leptons in $\sqrt{s} = 13$ TeV pp collisions with the ATLAS detector,” [arXiv:2402.00603 [hep-ex]].

G. Aad *et al.* [ATLAS], “Search for pair-production of vector-like quarks in lepton+jets final states containing at least one b -tagged jet using the Run 2 data from the ATLAS experiment,” [arXiv:2401.17165 [hep-ex]].

G. Aad *et al.* [ATLAS], “A search for R-parity-violating supersymmetry in final states containing many jets in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector,” [arXiv:2401.16333 [hep-ex]].

G. Aad *et al.* [ATLAS], “Operation and performance of the ATLAS tile calorimeter in LHC Run 2,” [arXiv:2401.16034 [hep-ex]].

G. Aad *et al.* [ATLAS], “Search for pair production of higgsinos in events with two Higgs bosons and missing transverse momentum in $\sqrt{s} = 13$ TeV pp collisions at the ATLAS experiment,” [arXiv:2401.14922 [hep-ex]].

G. Aad *et al.* [ATLAS], “Search for nearly mass-degenerate higgsinos using low-momentum mildly-displaced tracks in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector,” [arXiv:2401.14046 [hep-ex]].

G. Aad *et al.* [ATLAS], “Search for new phenomena with top-quark pairs and large missing transverse momentum using 140 fb^{-1} of pp collision data at $\sqrt{s} = 13$ TeV with the ATLAS detector,” JHEP **03**, 139 (2024) doi:10.1007/JHEP03(2024)139 [arXiv:2401.13430 [hep-ex]].

G. Aad *et al.* [ATLAS], “Combination of searches for pair-produced leptoquarks at $\sqrt{s} = 13$ TeV with the ATLAS detector,” [arXiv:2401.11928 [hep-ex]].

J. de Blas, P. Koppenburg, J. List, F. Maltoni, J. A. Maestre, J. Alimena, J. Alison, P. Azzi, P. Azzurri and E. Bagnaschi, *et al.* “Focus topics for the ECFA study on Higgs / Top / EW factories,” [arXiv:2401.07564 [hep-ph]].

G. Aad *et al.* [ATLAS], “The ATLAS Trigger System for LHC Run 3 and Trigger performance in 2022,” [arXiv:2401.06630 [hep-ex]].

- G. Aad *et al.* [ATLAS], “Measurement of the total and differential cross-sections of $t\bar{t}W$ production in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector,” [arXiv:2401.05299 [hep-ex]].
- G. Aad *et al.* [ATLAS], “Search for heavy resonances in final states with four leptons and missing transverse momentum or jets in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector,” [arXiv:2401.04742 [hep-ex]].
- G. Aad *et al.* [ATLAS], “Study of High-Transverse-Momentum Higgs Boson Production in Association with a Vector Boson in the $qqbb$ Final State with the ATLAS Detector,” Phys. Rev. Lett. **132**, no.13, 131802 (2024) doi:10.1103/PhysRevLett.132.131802 [arXiv:2312.07605 [hep-ex]].
- G. Aad *et al.* [ATLAS], “Inclusive and differential cross-section measurements of $t\bar{t}Z$ production in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector, including EFT and spin-correlation interpretations,” [arXiv:2312.04450 [hep-ex]].
- G. Aad *et al.* [ATLAS], “Search for short- and long-lived axion-like particles in $H \rightarrow aa \rightarrow 4\gamma$ decays with the ATLAS experiment at the LHC,” [arXiv:2312.03306 [hep-ex]].
- G. Aad *et al.* [ATLAS], “Measurement of jet substructure in boosted $t\bar{t}$ events with the ATLAS detector using 140 fb^{-1} of 13 TeV pp collisions,” [arXiv:2312.03797 [hep-ex]].
- G. Aad *et al.* [ATLAS], “Measurement of the Z boson invisible width at $\sqrt{s} = 13$ TeV with the ATLAS detector,” [arXiv:2312.02789 [hep-ex]].
- G. Aad *et al.* [ATLAS], “Search for the decay of the Higgs boson to a Z boson and a light pseudoscalar particle decaying to two photons,” Phys. Lett. B **850**, 138536 (2024) doi:10.1016/j.physletb.2024.138536 [arXiv:2312.01942 [hep-ex]].
- G. Aad *et al.* [ATLAS], “Evidence for the $VH, H \rightarrow \tau\tau$ process with the ATLAS detector in Run 2,” [arXiv:2312.02394 [hep-ex]].
- G. Aad *et al.* [ATLAS], “Measurement and interpretation of same-sign W boson pair production in association with two jets in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector,” JHEP **04**, 026 (2024) doi:10.1007/JHEP04(2024)026 [arXiv:2312.00420 [hep-ex]].
- G. Aad *et al.* [ATLAS], “Search for light long-lived neutral particles from Higgs boson decays via vector-boson-fusion production from pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector,” [arXiv:2311.18298 [hep-ex]].
- G. Aad *et al.* [ATLAS], “Combination of searches for resonant Higgs boson pair production using pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector,” [arXiv:2311.15956 [hep-ex]].
- G. Aad *et al.* [ATLAS], “Measurement of ZZ production cross-sections in the four-lepton final state in pp collisions at $\sqrt{s} = 13.6$ TeV with the ATLAS experiment,” [arXiv:2311.09715 [hep-ex]].
- G. Aad *et al.* [ATLAS], “Simultaneous energy and mass calibration of large-radius jets with the ATLAS detector using a deep neural network,” [arXiv:2311.08885 [hep-ex]].
- G. Aad *et al.* [ATLAS], “Observation of quantum entanglement in top-quark pairs using the ATLAS detector,” [arXiv:2311.07288 [hep-ex]].

- G. Aad *et al.* [ATLAS], “Search for a CP-odd Higgs boson decaying into a heavy CP-even Higgs boson and a Z boson in the $\ell^+\ell^-t\bar{t}$ and $\nu\bar{\nu}b\bar{b}$ final states using 140 fb⁻¹ of data collected with the ATLAS detector,” JHEP **02**, 197 (2024) doi:10.1007/JHEP02(2024)197 [arXiv:2311.04033 [hep-ex]].
- G. Aad *et al.* [ATLAS], “Search for resonant production of dark quarks in the dijet final state with the ATLAS detector,” JHEP **02**, 128 (2024) doi:10.1007/JHEP02(2024)128 [arXiv:2311.03944 [hep-ex]].
- G. Aad *et al.* [ATLAS], “Improving topological cluster reconstruction using calorimeter cell timing in ATLAS,” [arXiv:2310.16497 [physics.ins-det]].
- G. Aad *et al.* [ATLAS], “Studies of new Higgs boson interactions through nonresonant HH production in the $b\bar{b}\gamma\gamma$ final state in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector,” JHEP **01**, 066 (2024) doi:10.1007/JHEP01(2024)066 [arXiv:2310.12301 [hep-ex]].
- G. Aad *et al.* [ATLAS], “Search for non-resonant Higgs boson pair production in the $2b + 2\ell + E_T^{\text{miss}}$ final state in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector,” JHEP **02**, 037 (2024) doi:10.1007/JHEP02(2024)037 [arXiv:2310.11286 [hep-ex]].
- G. Aad *et al.* [ATLAS], “Study of $Z \rightarrow l\ell\gamma$ decays at $\sqrt{s} = 8$ TeV with the ATLAS detector,” Eur. Phys. J. C **84**, no.2, 195 (2024) doi:10.1140/epjc/s10052-024-12471-9 [arXiv:2310.11574 [hep-ex]].
- G. Aad *et al.* [ATLAS], “Search for direct production of electroweakinos in final states with one lepton, jets and missing transverse momentum in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector,” JHEP **12**, 167 (2023) doi:10.1007/JHEP12(2023)167 [arXiv:2310.08171 [hep-ex]].
- G. Aad *et al.* [ATLAS], “Evidence of pair production of longitudinally polarised vector bosons and study of CP properties in $ZZ \rightarrow 4\ell$ events with the ATLAS detector at $\sqrt{s} = 13$ TeV,” JHEP **12**, 107 (2023) doi:10.1007/JHEP12(2023)107 [arXiv:2310.04350 [hep-ex]].
- G. Aad *et al.* [ATLAS], “Measurement of t -channel single-top-quark production in pp collisions at $\sqrt{s} = 5.02$ TeV with the ATLAS detector,” [arXiv:2310.01518 [hep-ex]].
- G. Aad *et al.* [ATLAS], “Measurement of the production cross-section of J/ψ and $\psi(2S)$ mesons in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector,” Eur. Phys. J. C **84**, no.2, 169 (2024) doi:10.1140/epjc/s10052-024-12439-9 [arXiv:2309.17177 [hep-ex]].
- G. Aad *et al.* [ATLAS], “Search for the exclusive W boson hadronic decays $W^\pm \rightarrow \pi^\pm\gamma$, $W^\pm \rightarrow K^\pm\gamma$ and $W^\pm \rightarrow \rho^\pm\gamma$ with the ATLAS detector,” [arXiv:2309.15887 [hep-ex]].
- G. Aad *et al.* [ATLAS], “A precise determination of the strong-coupling constant from the recoil of Z bosons with the ATLAS experiment at $\sqrt{s} = 8$ TeV,” [arXiv:2309.12986 [hep-ex]].
- G. Aad *et al.* [ATLAS], “Search for flavour-changing neutral tqH interactions with $H \rightarrow \gamma\gamma$ in pp collisions at $\sqrt{s} = 13$ TeV using the ATLAS detector,” JHEP **12**, 195 (2023) doi:10.1007/JHEP12(2023)195 [arXiv:2309.12817 [hep-ex]].
- G. Aad *et al.* [ATLAS], “Electron and photon energy calibration with the ATLAS detector using LHC Run 2 data,” JINST **19**, no.02, P02009 (2024) doi:10.1088/1748-0221/19/02/P02009 [arXiv:2309.05471 [hep-ex]].

- G. Aad *et al.* [ATLAS], “Search for the $Z\gamma$ decay mode of new high-mass resonances in pp collisions at $s=13$ TeV with the ATLAS detector,” *Phys. Lett. B* **848**, 138394 (2024) doi:10.1016/j.physletb.2023.138394 [arXiv:2309.04364 [hep-ex]].
- G. Aad *et al.* [ATLAS and CMS], “Evidence for the Higgs Boson Decay to a Z Boson and a Photon at the LHC,” *Phys. Rev. Lett.* **132**, no.2, 021803 (2024) doi:10.1103/PhysRevLett.132.021803 [arXiv:2309.03501 [hep-ex]].
- G. Aad *et al.* [ATLAS], “Azimuthal angle correlations of muons produced via heavy-flavor decays in 5.02 TeV Pb+Pb and pp collisions with the ATLAS detector,” [arXiv:2308.16652 [nucl-ex]].
- G. Aad *et al.* [ATLAS], “Measurements of longitudinal flow decorrelations in pp and Xe+Xe collisions with the ATLAS detector,” [arXiv:2308.16745 [nucl-ex]].
- G. Aad *et al.* [ATLAS], “Measurement of the Centrality Dependence of the Dijet Yield in p+Pb Collisions at $s_{NN}=8.16$ TeV with the ATLAS Detector,” *Phys. Rev. Lett.* **132**, no.10, 102301 (2024) doi:10.1103/PhysRevLett.132.102301 [arXiv:2309.00033 [nucl-ex]].
- G. Aad *et al.* [ATLAS], “Electron and photon efficiencies in LHC Run 2 with the ATLAS experiment,” [arXiv:2308.13362 [hep-ex]].
- G. Aad *et al.* [ATLAS], “Differential cross-section measurements of the production of four charged leptons in association with two jets using the ATLAS detector,” *JHEP* **01**, 004 (2024) doi:10.1007/JHEP01(2024)004 [arXiv:2308.12324 [hep-ex]].
- G. Aad *et al.* [ATLAS], “Measurement of the $t\bar{t}$ cross section and its ratio to the Z production cross section using pp collisions at $s=13.6$ TeV with the ATLAS detector,” *Phys. Lett. B* **848**, 138376 (2024) doi:10.1016/j.physletb.2023.138376 [arXiv:2308.09529 [hep-ex]].
- G. Aad *et al.* [ATLAS], “Software Performance of the ATLAS Track Reconstruction for LHC Run 3,” *Comput. Softw. Big Sci.* **8**, no.1, 9 (2024) doi:10.1007/s41781-023-00111-y [arXiv:2308.09471 [hep-ex]].
- G. Aad *et al.* [ATLAS], “Search for vector-boson resonances decaying into a top quark and a bottom quark using pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector,” *JHEP* **12**, 073 (2023) doi:10.1007/JHEP12(2023)073 [arXiv:2308.08521 [hep-ex]].
- G. Aad *et al.* [ATLAS], “Measurement of the Higgs boson mass with $\gamma\gamma$ decays in 140 fb^{-1} of 13 TeV pp collisions with the ATLAS detector,” *Phys. Lett. B* **847**, 138315 (2023) doi:10.1016/j.physletb.2023.138315 [arXiv:2308.07216 [hep-ex]].
- G. Aad *et al.* [ATLAS], “Search for magnetic monopoles and stable particles with high electric charges in $\sqrt{s} = 13$ TeV pp collisions with the ATLAS detector,” *JHEP* **11**, 112 (2023) doi:10.1007/JHEP11(2023)112 [arXiv:2308.04835 [hep-ex]].
- G. Aad *et al.* [ATLAS], “Combined Measurement of the Higgs Boson Mass from the $H\rightarrow\gamma\gamma$ and $H\rightarrow ZZ^*\rightarrow 4\ell$ Decay Channels with the ATLAS Detector Using $s=7, 8,$ and 13 TeV pp Collision Data,” *Phys. Rev. Lett.* **131**, no.25, 251802 (2023) doi:10.1103/PhysRevLett.131.251802 [arXiv:2308.04775]

[hep-ex]].

G. Aad *et al.* [ATLAS], “Observation of $W\gamma\gamma$ triboson production in proton-proton collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector,” *Phys. Lett. B* **848**, 138400 (2024) doi:10.1016/j.physletb.2023.138400 [arXiv:2308.03041 [hep-ex]].

G. Aad *et al.* [ATLAS], “Search for single vector-like B quark production and decay via $B \rightarrow bH(b\bar{b})$ in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector,” *JHEP* **11**, 168 (2023) doi:10.1007/JHEP11(2023)168 [arXiv:2308.02595 [hep-ex]].

G. Aad *et al.* [ATLAS], “Measurement of the $B_s^0 \rightarrow \mu\mu$ effective lifetime with the ATLAS detector,” *JHEP* **09**, 199 (2023) doi:10.1007/JHEP09(2023)199 [arXiv:2308.01171 [hep-ex]].

G. Aad *et al.* [ATLAS], “Performance and calibration of quark/gluon-jet taggers using 140 fb⁻¹ of pp collisions at TeV with the ATLAS detector*,” *Chin. Phys. C* **48**, no.2, 023001 (2024) doi:10.1088/1674-1137/acf701 [arXiv:2308.00716 [hep-ex]].

G. Aad *et al.* [ATLAS], “Pursuit of paired dijet resonances in the Run 2 dataset with ATLAS,” *Phys. Rev. D* **108**, no.11, 112005 (2023) doi:10.1103/PhysRevD.108.112005 [arXiv:2307.14944 [hep-ex]].

G. Aad *et al.* [ATLAS], “Search for quantum black hole production in lepton+jet final states using proton-proton collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector,” *Phys. Rev. D* **109**, 032010 (2024) doi:10.1103/PhysRevD.109.032010 [arXiv:2307.14967 [hep-ex]].

G. Aad *et al.* [ATLAS], “Search for heavy Higgs bosons with flavour-violating couplings in multi-lepton plus b-jets final states in pp collisions at 13 TeV with the ATLAS detector,” *JHEP* **12**, 081 (2023) doi:10.1007/JHEP12(2023)081 [arXiv:2307.14759 [hep-ex]].

G. Aad *et al.* [ATLAS], “Search for a new heavy scalar particle decaying into a Higgs boson and a new scalar singlet in final states with one or two light leptons and a pair of τ -leptons with the ATLAS detector,” *JHEP* **10**, 009 (2023) doi:10.1007/JHEP10(2023)009 [arXiv:2307.11120 [hep-ex]].

G. Aad *et al.* [ATLAS], “Search for singly produced vector-like top partners in multilepton final states with 139 fb⁻¹ of pp collision data at $\sqrt{s} = 13$ TeV with the ATLAS detector,” [arXiv:2307.07584 [hep-ex]].

G. Aad *et al.* [ATLAS], “Search for New Phenomena in Two-Body Invariant Mass Distributions Using Unsupervised Machine Learning for Anomaly Detection at $s=13$ TeV with the ATLAS Detector,” *Phys. Rev. Lett.* **132**, no.8, 081801 (2024) doi:10.1103/PhysRevLett.132.081801 [arXiv:2307.01612 [hep-ex]].

G. Aad *et al.* [ATLAS], “Search for pair production of squarks or gluinos decaying via sleptons or weak bosons in final states with two same-sign or three leptons with the ATLAS detector,” *JHEP* **02**, 107 (2024) doi:10.1007/JHEP02(2024)107 [arXiv:2307.01094 [hep-ex]].

G. Aad *et al.* [ATLAS], “Search for leptoquark pair production decaying into $te^-\bar{t}e^+$ or $t\mu^-\bar{t}\mu^+$ in multi-lepton final states in pp collisions at 13 TeV with the ATLAS detector,” [arXiv:2306.17642 [hep-ex]].

G. Aad *et al.* [ATLAS], “Measurement of the $H \rightarrow \gamma\gamma$ and $H \rightarrow ZZ^* \rightarrow 4\ell$ cross-sections in pp collisions at $\sqrt{s} = 13.6$ TeV with the ATLAS detector,” *Eur. Phys. J. C* **84**, no.1, 78 (2024) doi:10.1140/epjc/s10052-023-12130-5 [arXiv:2306.11379 [hep-ex]].

G. Aad *et al.* [ATLAS], “Fast b-tagging at the high-level trigger of the ATLAS experiment in LHC Run 3,” JINST **18**, no.11, P11006 (2023) doi:10.1088/1748-0221/18/11/P11006 [arXiv:2306.09738 [hep-ex]].

G. Aad *et al.* [ATLAS], “Search for dark photons in rare Z boson decays with the ATLAS detector,” Phys. Rev. Lett. **131**, no.25, 251801 (2023) doi:10.1103/PhysRevLett.131.251801 [arXiv:2306.07413 [hep-ex]].

G. Aad *et al.* [ATLAS], “Anomaly detection search for new resonances decaying into a Higgs boson and a generic new particle X in hadronic final states using $\sqrt{s} = 13$ TeV pp collisions with the ATLAS detector,” Phys. Rev. D **108**, 052009 (2023) doi:10.1103/PhysRevD.108.052009 [arXiv:2306.03637 [hep-ex]].

G. Aad *et al.* [ATLAS], “Combination and summary of ATLAS dark matter searches interpreted in a 2HDM with a pseudo-scalar mediator using 139 fb^{-1} of $\sqrt{s} = 13$ TeV pp collision data,” [arXiv:2306.00641 [hep-ex]].

G. Aad *et al.* [ATLAS], “Measurement of the cross-sections of the electroweak and total production of a $Z\gamma$ pair in association with two jets in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector,” Phys. Lett. B **846**, 138222 (2023) doi:10.1016/j.physletb.2023.138222 [arXiv:2305.19142 [hep-ex]].

G. Aad *et al.* [ATLAS], “Search for non-resonant production of semi-visible jets using Run 2 data in ATLAS,” Phys. Lett. B **848**, 138324 (2024) doi:10.1016/j.physletb.2023.138324 [arXiv:2305.18037 [hep-ex]].

G. Aad *et al.* [ATLAS], “Measurements of multijet event isotropies using optimal transport with the ATLAS detector,” JHEP **10**, 060 (2023) doi:10.1007/JHEP10(2023)060 [arXiv:2305.16930 [hep-ex]].

G. Aad *et al.* [ATLAS], “Observation of $WZ\gamma$ Production in pp Collisions at $s=13$ TeV with the ATLAS Detector,” Phys. Rev. Lett. **132**, no.2, 021802 (2024) doi:10.1103/PhysRevLett.132.021802 [arXiv:2305.16994 [hep-ex]].

G. Aad *et al.* [ATLAS], “The ATLAS Experiment at the CERN Large Hadron Collider: A Description of the Detector Configuration for Run 3,” [arXiv:2305.16623 [physics.ins-det]].

G. Aad *et al.* [ATLAS], “Search for leptoquarks decaying into the $b\tau$ final state in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector,” JHEP **10**, 001 (2023) doi:10.1007/JHEP10(2023)001 [arXiv:2305.15962 [hep-ex]].

G. Aad *et al.* [ATLAS], “Search for Majorana neutrinos in same-sign WW scattering events from pp collisions at $\sqrt{s} = 13$ TeV,” Eur. Phys. J. C **83**, no.9, 824 (2023) doi:10.1140/epjc/s10052-023-11915-y [arXiv:2305.14931 [hep-ex]].

G. Aad *et al.* [ATLAS], “Search for dark matter produced in association with a Higgs boson decaying to tau leptons at $\sqrt{s} = 13$ TeV with the ATLAS detector,” JHEP **09**, 189 (2023) doi:10.1007/JHEP09(2023)189 [arXiv:2305.12938 [hep-ex]].

G. Aad *et al.* [ATLAS], “Search for periodic signals in the dielectron and diphoton invariant mass spectra using 139 fb^{-1} of pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector,” JHEP **10**, 079 (2023)

doi:10.1007/JHEP10(2023)079 [arXiv:2305.10894 [hep-ex]].

G. Aad *et al.* [ATLAS], “Search for direct production of winos and higgsinos in events with two same-charge leptons or three leptons in pp collision data at $\sqrt{s} = 13$ TeV with the ATLAS detector,” JHEP **11**, 150 (2023) doi:10.1007/JHEP11(2023)150 [arXiv:2305.09322 [hep-ex]].

G. Aad *et al.* [ATLAS], “Search for single production of vector-like T quarks decaying into Ht or Zt in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector,” JHEP **08**, 153 (2023) doi:10.1007/JHEP08(2023)153 [arXiv:2305.03401 [hep-ex]].

G. Aad *et al.* [ATLAS], “Search for pairs of muons with small displacements in pp collisions at $s=13$ TeV with the ATLAS detector,” Phys. Lett. B **846**, 138172 (2023) doi:10.1016/j.physletb.2023.138172 [arXiv:2305.02005 [hep-ex]].

G. Aad *et al.* [ATLAS], “Search for a new pseudoscalar decaying into a pair of muons in events with a top-quark pair at $s=13$ TeV with the ATLAS detector,” Phys. Rev. D **108**, no.9, 092007 (2023) doi:10.1103/PhysRevD.108.092007 [arXiv:2304.14247 [hep-ex]].

G. Aad *et al.* [ATLAS], “Performance of the reconstruction of large impact parameter tracks in the inner detector of ATLAS,” Eur. Phys. J. C **83**, no.11, 1081 (2023) doi:10.1140/epjc/s10052-023-12024-6 [arXiv:2304.12867 [hep-ex]].

G. Aad *et al.* [ATLAS], “Search in diphoton and dielectron final states for displaced production of Higgs or Z bosons with the ATLAS detector in $s=13$ TeV pp collisions,” Phys. Rev. D **108**, no.1, 012012 (2023) doi:10.1103/PhysRevD.108.012012 [arXiv:2304.12885 [hep-ex]].

G. Aad *et al.* [ATLAS], “Search for high-mass $W\gamma$ and $Z\gamma$ resonances using hadronic W/Z boson decays from 139 fb^{-1} of pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector,” JHEP **07**, 125 (2023) doi:10.1007/JHEP07(2023)125 [arXiv:2304.11962 [hep-ex]].

G. Aad *et al.* [ATLAS], “Search for an axion-like particle with forward proton scattering in association with photon pairs at ATLAS,” JHEP **07**, 234 (2023) doi:10.1007/JHEP07(2023)234 [arXiv:2304.10953 [hep-ex]].

G. Aad *et al.* [ATLAS], “Test of CP-invariance of the Higgs boson in vector-boson fusion production and its decay into four leptons,” [arXiv:2304.09612 [hep-ex]].

G. Aad *et al.* [ATLAS], “Search for heavy Majorana or Dirac neutrinos and right-handed W gauge bosons in final states with charged leptons and jets in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector,” Eur. Phys. J. C **83**, no.12, 1164 (2023) doi:10.1140/epjc/s10052-023-12021-9 [arXiv:2304.09553 [hep-ex]].

G. Aad *et al.* [ATLAS], “Observation of an Excess of Dicharmonium Events in the Four-Muon Final State with the ATLAS Detector,” Phys. Rev. Lett. **131**, no.15, 151902 (2023) doi:10.1103/PhysRevLett.131.151902 [arXiv:2304.08962 [hep-ex]].

G. Aad *et al.* [ATLAS], “Fiducial and differential cross-section measurements for the vector-boson-fusion production of the Higgs boson in the $H \rightarrow WW^* \rightarrow e\nu\mu\nu$ decay channel at 13 TeV with the ATLAS detector,” Phys. Rev. D **108**, no.7, 072003 (2023) doi:10.1103/PhysRevD.108.072003 [arXiv:2304.03053 [hep-ex]].

- G. Aad *et al.* [ATLAS], “Search for top-philic heavy resonances in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector,” *Eur. Phys. J. C* **84**, no.2, 157 (2024) doi:10.1140/epjc/s10052-023-12318-9 [arXiv:2304.01678 [hep-ex]].
- G. Aad *et al.* [ATLAS], “Evidence of off-shell Higgs boson production from ZZ leptonic decay channels and constraints on its total width with the ATLAS detector,” *Phys. Lett. B* **846**, 138223 (2023) doi:10.1016/j.physletb.2023.138223 [arXiv:2304.01532 [hep-ex]].
- G. Aad *et al.* [ATLAS], “New techniques for jet calibration with the ATLAS detector,” *Eur. Phys. J. C* **83**, no.8, 761 (2023) doi:10.1140/epjc/s10052-023-11837-9 [arXiv:2303.17312 [hep-ex]].
- G. Aad *et al.* [ATLAS], “Measurement of the Sensitivity of Two-Particle Correlations in pp Collisions to the Presence of Hard Scatterings,” *Phys. Rev. Lett.* **131**, no.16, 162301 (2023) doi:10.1103/PhysRevLett.131.162301 [arXiv:2303.17357 [nucl-ex]].
- G. Aad *et al.* [ATLAS], “Observation of four-top-quark production in the multilepton final state with the ATLAS detector,” *Eur. Phys. J. C* **83**, no.6, 496 (2023) [erratum: *Eur. Phys. J. C* **84**, 156 (2024)] doi:10.1140/epjc/s10052-023-11573-0 [arXiv:2303.15061 [hep-ex]].
- G. Aad *et al.* [ATLAS], “Inclusive and differential cross-sections for dilepton $t\bar{t}$ production measured in $\sqrt{s} = 13$ TeV pp collisions with the ATLAS detector,” *JHEP* **07**, 141 (2023) doi:10.1007/JHEP07(2023)141 [arXiv:2303.15340 [hep-ex]].
- G. Aad *et al.* [ATLAS], “Search for heavy long-lived multi-charged particles in the full LHC Run 2 pp collision data at $s=13$ TeV using the ATLAS detector,” *Phys. Lett. B* **847**, 138316 (2023) doi:10.1016/j.physletb.2023.138316 [arXiv:2303.13613 [hep-ex]].
- G. Aad *et al.* [ATLAS], “Comparison of inclusive and photon-tagged jet suppression in 5.02 TeV Pb+Pb collisions with ATLAS,” *Phys. Lett. B* **846**, 138154 (2023) doi:10.1016/j.physletb.2023.138154 [arXiv:2303.10090 [nucl-ex]].
- G. Aad *et al.* [ATLAS], “Search for excited τ -leptons and leptoquarks in the final state with τ -leptons and jets in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector,” *JHEP* **06**, 199 (2023) doi:10.1007/JHEP06(2023)199 [arXiv:2303.09444 [hep-ex]].
- G. Aad *et al.* [ATLAS], “Search for third-generation vector-like leptons in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector,” *JHEP* **07**, 118 (2023) doi:10.1007/JHEP07(2023)118 [arXiv:2303.05441 [hep-ex]].
- G. Aad *et al.* [ATLAS], “Search for pair production of third-generation leptoquarks decaying into a bottom quark and a τ -lepton with the ATLAS detector,” *Eur. Phys. J. C* **83**, no.11, 1075 (2023) doi:10.1140/epjc/s10052-023-12104-7 [arXiv:2303.01294 [hep-ex]].
- G. Aad *et al.* [ATLAS], “A precise measurement of the Z-boson double-differential transverse momentum and rapidity distributions in the full phase space of the decay leptons with the ATLAS experiment at $\sqrt{s} = 8$ TeV,” *Eur. Phys. J. C* **84**, no.3, 315 (2024) doi:10.1140/epjc/s10052-024-12438-w [arXiv:2309.09318 [hep-ex]].
- G. Aad *et al.* [ATLAS], “Search for a light charged Higgs boson in $t \rightarrow H^\pm b$ decays, with $H^\pm \rightarrow cb$, in

the lepton+jets final state in proton-proton collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector," JHEP **09**, 004 (2023) doi:10.1007/JHEP09(2023)004 [arXiv:2302.11739 [hep-ex]].

G. Aad *et al.* [ATLAS], "Searches for lepton-flavour-violating decays of the Higgs boson into $e\tau$ and $\mu\tau$ in $\sqrt{s} = 13$ TeV pp collisions with the ATLAS detector," JHEP **07**, 166 (2023) doi:10.1007/JHEP07(2023)166 [arXiv:2302.05225 [hep-ex]].

G. Aad *et al.* [ATLAS], "Measurements of the suppression and correlations of dijets in Xe+Xe collisions at $\sqrt{s_{NN}}=5.44$ TeV," Phys. Rev. C **108**, no.2, 024906 (2023) doi:10.1103/PhysRevC.108.024906 [arXiv:2302.03967 [nucl-ex]].

G. Aad *et al.* [ATLAS], "Observation of Single-Top-Quark Production in Association with a Photon Using the ATLAS Detector," Phys. Rev. Lett. **131**, no.18, 181901 (2023) doi:10.1103/PhysRevLett.131.181901 [arXiv:2302.01283 [hep-ex]].

G. Aad *et al.* [ATLAS], "Measurement of the production of a W boson in association with a charmed hadron in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector," Phys. Rev. D **108**, 032012 (2023) doi:10.1103/PhysRevD.108.032012 [arXiv:2302.00336 [hep-ex]].

G. Aad *et al.* [ATLAS], "Inclusive-photon production and its dependence on photon isolation in pp collisions at $\sqrt{s} = 13$ TeV using 139 fb^{-1} of ATLAS data," JHEP **07**, 086 (2023) doi:10.1007/JHEP07(2023)086 [arXiv:2302.00510 [hep-ex]].

G. Aad *et al.* [ATLAS], "Search for long-lived, massive particles in events with displaced vertices and multiple jets in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector," JHEP **2306**, 200 (2023) doi:10.1007/JHEP06(2023)200 [arXiv:2301.13866 [hep-ex]].

G. Aad *et al.* [ATLAS], "Search for flavor-changing neutral-current couplings between the top quark and the Z boson with proton-proton collisions at $\sqrt{s}=13$ TeV with the ATLAS detector," Phys. Rev. D **108**, no.3, 032019 (2023) doi:10.1103/PhysRevD.108.032019 [arXiv:2301.11605 [hep-ex]].

G. Aad *et al.* [ATLAS], "Combination of searches for invisible decays of the Higgs boson using 139 fb^{-1} of proton-proton collision data at $\sqrt{s}=13$ TeV collected with the ATLAS experiment," Phys. Lett. B **842**, 137963 (2023) doi:10.1016/j.physletb.2023.137963 [arXiv:2301.10731 [hep-ex]].

G. Aad *et al.* [ATLAS], "Model-independent search for the presence of new physics in events including $H \rightarrow \gamma\gamma$ with $\sqrt{s} = 13$ TeV pp data recorded by the ATLAS detector at the LHC," JHEP **07**, 176 (2023) doi:10.1007/JHEP07(2023)176 [arXiv:2301.10486 [hep-ex]].

G. Aad *et al.* [ATLAS], "Search for exclusive Higgs and Z boson decays to $\omega\gamma$ and Higgs boson decays to $K^*\gamma$ with the ATLAS detector," Phys. Lett. B **847**, 138292 (2023) doi:10.1016/j.physletb.2023.138292 [arXiv:2301.09938 [hep-ex]].

G. Aad *et al.* [ATLAS], "Search for a new Z' gauge boson in 4μ events with the ATLAS experiment," JHEP **07**, 090 (2023) doi:10.1007/JHEP07(2023)090 [arXiv:2301.09342 [hep-ex]].

G. Aad *et al.* [ATLAS], "Determination of the strong coupling constant from transverse energy–energy correlations in multijet events at $\sqrt{s} = 13$ TeV with the ATLAS detector," JHEP **07**, 085 (2023) doi:10.1007/JHEP07(2023)085 [arXiv:2301.09351 [hep-ex]].

- G. Aad *et al.* [ATLAS], “Measurements of differential cross sections of Higgs boson production through gluon fusion in the $H \rightarrow WW^* \rightarrow e\nu\mu\nu$ final state at $\sqrt{s} = 13$ TeV with the ATLAS detector,” *Eur. Phys. J. C* **83**, no.9, 774 (2023) doi:10.1140/epjc/s10052-023-11873-5 [arXiv:2301.06822 [hep-ex]].
- G. Aad *et al.* [ATLAS], “Calibration of the light-flavour jet mistagging efficiency of the b-tagging algorithms with Z+jets events using 139 fb^{-1} of ATLAS proton–proton collision data at $\sqrt{s} = 13$ TeV,” *Eur. Phys. J. C* **83**, no.8, 728 (2023) doi:10.1140/epjc/s10052-023-11736-z [arXiv:2301.06319 [hep-ex]].
- G. Aad *et al.* [ATLAS], “Measurement of Suppression of Large-Radius Jets and Its Dependence on Substructure in Pb+Pb Collisions at $s_{NN}=5.02$ TeV with the ATLAS Detector,” *Phys. Rev. Lett.* **131**, no.17, 172301 (2023) doi:10.1103/PhysRevLett.131.172301 [arXiv:2301.05606 [nucl-ex]].
- G. Aad *et al.* [ATLAS], “Search for a new scalar resonance in flavour-changing neutral-current top-quark decays $t \rightarrow qX$ ($q = u, c$), with $X \rightarrow b\bar{b}$, in proton-proton collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector,” *JHEP* **07**, 199 (2023) doi:10.1007/JHEP07(2023)199 [arXiv:2301.03902 [hep-ex]].
- G. Aad *et al.* [ATLAS], “Search for leptonic charge asymmetry in $t\bar{t}W$ production in final states with three leptons at $\sqrt{s} = 13$ TeV,” *JHEP* **07**, 033 (2023) doi:10.1007/JHEP07(2023)033 [arXiv:2301.04245 [hep-ex]].
- G. Aad *et al.* [ATLAS], “Search for nonresonant pair production of Higgs bosons in the $b\bar{b}b\bar{b}$ final state in pp collisions at $s=13$ TeV with the ATLAS detector,” *Phys. Rev. D* **108**, no.5, 052003 (2023) doi:10.1103/PhysRevD.108.052003 [arXiv:2301.03212 [hep-ex]].
- G. Aad *et al.* [ATLAS], “Measurement of the charge asymmetry in top-quark pair production in association with a photon with the ATLAS experiment,” *Phys. Lett. B* **843**, 137848 (2023) doi:10.1016/j.physletb.2023.137848 [arXiv:2212.10552 [hep-ex]].
- G. Aad *et al.* [ATLAS], “Luminosity determination in pp collisions at $\sqrt{s} = 13$ TeV using the ATLAS detector at the LHC,” *Eur. Phys. J. C* **83**, no.10, 982 (2023) doi:10.1140/epjc/s10052-023-11747-w [arXiv:2212.09379 [hep-ex]].
- G. Aad *et al.* [ATLAS], “Search for dark photons from Higgs boson decays via ZH production with a photon plus missing transverse momentum signature from pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector,” *JHEP* **07**, 133 (2023) doi:10.1007/JHEP07(2023)133 [arXiv:2212.09649 [hep-ex]].
- G. Aad *et al.* [ATLAS], “Measurements of $Z\gamma$ +jets differential cross sections in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector,” *JHEP* **07**, 072 (2023) doi:10.1007/JHEP07(2023)072 [arXiv:2212.07184 [hep-ex]].
- G. Aad *et al.* [ATLAS], “Studies of the muon momentum calibration and performance of the ATLAS detector with pp collisions at $\sqrt{s} = 13$ TeV,” *Eur. Phys. J. C* **83**, no.8, 686 (2023) doi:10.1140/epjc/s10052-023-11584-x [arXiv:2212.07338 [hep-ex]].
- G. Aad *et al.* [ATLAS], “Measurement of the CP properties of Higgs boson interactions with τ -leptons with the ATLAS detector,” *Eur. Phys. J. C* **83**, no.7, 563 (2023) doi:10.1140/epjc/s10052-023-11583-y [arXiv:2212.05833 [hep-ex]].

G. Aad *et al.* [ATLAS], “Search for pair-produced vector-like top and bottom partners in events with large missing transverse momentum in pp collisions with the ATLAS detector,” *Eur. Phys. J. C* **83**, no.8, 719 (2023) doi:10.1140/epjc/s10052-023-11790-7 [arXiv:2212.05263 [hep-ex]].

G. Aad *et al.* [ATLAS], “Measurement of exclusive pion pair production in proton–proton collisions at $\sqrt{s} = 7$ TeV with the ATLAS detector,” *Eur. Phys. J. C* **83**, no.7, 627 (2023) doi:10.1140/epjc/s10052-023-11700-x [arXiv:2212.00664 [hep-ex]].

G. Aad *et al.* [ATLAS], “Tools for estimating fake/non-prompt lepton backgrounds with the ATLAS detector at the LHC,” *JINST* **18**, no.11, T11004 (2023) doi:10.1088/1748-0221/18/11/T11004 [arXiv:2211.16178 [hep-ex]].

G. Aad *et al.* [ATLAS], “Charged-hadron production in pp , p +Pb, Pb+Pb, and Xe+Xe collisions at $\sqrt{s_{NN}} = 5$ TeV with the ATLAS detector at the LHC,” *JHEP* **07**, 074 (2023) doi:10.1007/JHEP07(2023)074 [arXiv:2211.15257 [hep-ex]].

G. Aad *et al.* [ATLAS], “Measurement of $Z\gamma\gamma$ production in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector,” *Eur. Phys. J. C* **83**, no.6, 539 (2023) doi:10.1140/epjc/s10052-023-11579-8 [arXiv:2211.14171 [hep-ex]].

G. Aad *et al.* [ATLAS], “ATLAS flavour-tagging algorithms for the LHC Run 2 pp collision dataset,” *Eur. Phys. J. C* **83**, no.7, 681 (2023) doi:10.1140/epjc/s10052-023-11699-1 [arXiv:2211.16345 [physics.data-an]].

G. Aad *et al.* [ATLAS], “Search for dark matter produced in association with a single top quark and an energetic W boson in $\sqrt{s} = 13$ TeV pp collisions with the ATLAS detector,” *Eur. Phys. J. C* **83**, no.7, 603 (2023) doi:10.1140/epjc/s10052-023-11582-z [arXiv:2211.13138 [hep-ex]].

G. Aad *et al.* [ATLAS], “Measurement of substructure-dependent jet suppression in Pb+Pb collisions at 5.02 TeV with the ATLAS detector,” *Phys. Rev. C* **107**, no.5, 054909 (2023) doi:10.1103/PhysRevC.107.054909 [arXiv:2211.11470 [nucl-ex]].

G. Aad *et al.* [ATLAS], “Observation of gauge boson joint-polarisation states in $W\pm Z$ production from pp collisions at $s=13$ TeV with the ATLAS detector,” *Phys. Lett. B* **843**, 137895 (2023) doi:10.1016/j.physletb.2023.137895 [arXiv:2211.09435 [hep-ex]].

G. Aad *et al.* [ATLAS], “Search for new phenomena in multi-body invariant masses in events with at least one isolated lepton and two jets using $\sqrt{s} = 13$ TeV proton–proton collision data collected by the ATLAS detector,” *JHEP* **07**, 202 (2023) doi:10.1007/JHEP07(2023)202 [arXiv:2211.08945 [hep-ex]].

G. Aad *et al.* [ATLAS], “Search for supersymmetry in final states with missing transverse momentum and three or more b-jets in 139 fb^{-1} of proton–proton collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector,” *Eur. Phys. J. C* **83**, no.7, 561 (2023) doi:10.1140/epjc/s10052-023-11543-6 [arXiv:2211.08028 [hep-ex]].

G. Aad *et al.* [ATLAS], “Search for doubly charged Higgs boson production in multi-lepton final states using 139 fb^{-1} of proton–proton collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector,” *Eur. Phys. J. C* **83**, no.7, 605 (2023) doi:10.1140/epjc/s10052-023-11578-9 [arXiv:2211.07505 [hep-ex]].

- G. Aad *et al.* [ATLAS], “Search for dark matter produced in association with a dark Higgs boson decaying into W^+W^- in the one-lepton final state at $\sqrt{s}=13$ TeV using 139 fb^{-1} of pp collisions recorded with the ATLAS detector,” JHEP **07**, 116 (2023) doi:10.1007/JHEP07(2023)116 [arXiv:2211.07175 [hep-ex]].
- G. Aad *et al.* [ATLAS], “Constraints on spin-0 dark matter mediators and invisible Higgs decays using ATLAS 13 TeV pp collision data with two top quarks and missing transverse momentum in the final state,” Eur. Phys. J. C **83**, no.6, 503 (2023) doi:10.1140/epjc/s10052-023-11477-z [arXiv:2211.05426 [hep-ex]].
- G. Aad *et al.* [ATLAS], “Search for boosted diphoton resonances in the 10 to 70 GeV mass range using 138 fb^{-1} of 13 TeV pp collisions with the ATLAS detector,” JHEP **07**, 155 (2023) doi:10.1007/JHEP07(2023)155 [arXiv:2211.04172 [hep-ex]].
- G. Aad *et al.* [ATLAS], “A search for heavy Higgs bosons decaying into vector bosons in same-sign two-lepton final states in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector,” JHEP **07**, 200 (2023) doi:10.1007/JHEP07(2023)200 [arXiv:2211.02617 [hep-ex]].
- G. Aad *et al.* [ATLAS], “Search for $t\bar{t}H/A \rightarrow t\bar{t}\bar{t}$ production in the multilepton final state in proton–proton collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector,” JHEP **07**, 203 (2023) doi:10.1007/JHEP07(2023)203 [arXiv:2211.01136 [hep-ex]].
- G. Aad *et al.* [ATLAS], “Constraints on the Higgs boson self-coupling from single- and double-Higgs production with the ATLAS detector using pp collisions at $s=13$ TeV,” Phys. Lett. B **843**, 137745 (2023) doi:10.1016/j.physletb.2023.137745 [arXiv:2211.01216 [hep-ex]].
- G. Aad *et al.* [ATLAS], “Search for pair-production of vector-like quarks in pp collision events at $s=13$ TeV with at least one leptonically decaying Z boson and a third-generation quark with the ATLAS detector,” Phys. Lett. B **843**, 138019 (2023) doi:10.1016/j.physletb.2023.138019 [arXiv:2210.15413 [hep-ex]].
- G. Aad *et al.* [ATLAS], “Deep Generative Models for Fast Photon Shower Simulation in ATLAS,” Comput. Softw. Big Sci. **8**, no.1, 7 (2024) doi:10.1007/s41781-023-00106-9 [arXiv:2210.06204 [hep-ex]].
- G. Aad *et al.* [ATLAS], “Search for Higgs boson pair production in association with a vector boson in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector,” Eur. Phys. J. C **83**, no.6, 519 (2023) doi:10.1140/epjc/s10052-023-11559-y [arXiv:2210.05415 [hep-ex]].
- G. Aad *et al.* [ATLAS], “Search for pair-produced scalar and vector leptoquarks decaying into third-generation quarks and first- or second-generation leptons in pp collisions with the ATLAS detector,” JHEP **2306**, 188 (2023) doi:10.1007/JHEP06(2023)188 [arXiv:2210.04517 [hep-ex]].
- G. Aad *et al.* [ATLAS], “A search for new resonances in multiple final states with a high transverse momentum Z boson in $\sqrt{s} = 13$ TeV pp collisions with the ATLAS detector,” JHEP **06**, 036 (2023) doi:10.1007/JHEP06(2023)036 [arXiv:2209.15345 [hep-ex]].
- G. Aad *et al.* [ATLAS], “Measurement of the polarisation of W bosons produced in top-quark decays using dilepton events at $s=13$ TeV with the ATLAS experiment,” Phys. Lett. B **843**, 137829 (2023) doi:10.1016/j.physletb.2023.137829 [arXiv:2209.14903 [hep-ex]].

G. Aad *et al.* [ATLAS], “Search for direct pair production of sleptons and charginos decaying to two leptons and neutralinos with mass splittings near the W-boson mass in $\sqrt{s} = 13$ TeV pp collisions with the ATLAS detector,” JHEP **06**, 031 (2023) doi:10.1007/JHEP06(2023)031 [arXiv:2209.13935 [hep-ex]].

T. Bose, A. Boveia, C. Doglioni, S. P. Griso, J. Hirschauer, E. Lipeles, Z. Liu, N. R. Shah, L. T. Wang and K. Agashe, *et al.* “Report of the Topical Group on Physics Beyond the Standard Model at Energy Frontier for Snowmass 2021,” [arXiv:2209.13128 [hep-ph]].

G. Aad *et al.* [ATLAS], “Search for resonant and non-resonant Higgs boson pair production in the $b\bar{b}\tau^+\tau^-$ decay channel using 13 TeV pp collision data from the ATLAS detector,” JHEP **07**, 040 (2023) doi:10.1007/JHEP07(2023)040 [arXiv:2209.10910 [hep-ex]].

G. Aad *et al.* [ATLAS], “Measurement of single top-quark production in the s-channel in proton–proton collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector,” JHEP **06**, 191 (2023) doi:10.1007/JHEP06(2023)191 [arXiv:2209.08990 [hep-ex]].

G. Aad *et al.* [ATLAS], “Measurements of observables sensitive to colour reconnection in $t\bar{t}$ events with the ATLAS detector at $\sqrt{s} = 13$ TeV,” Eur. Phys. J. C **83**, no.6, 518 (2023) doi:10.1140/epjc/s10052-023-11479-x [arXiv:2209.07874 [hep-ex]].

G. Aad *et al.* [ATLAS], “Search for displaced photons produced in exotic decays of the Higgs boson using 13 TeV pp collisions with the ATLAS detector,” Phys. Rev. D **108**, no.3, 032016 (2023) doi:10.1103/PhysRevD.108.032016 [arXiv:2209.01029 [hep-ex]].

G. Aad *et al.* [ATLAS], “Measurement of electroweak $Z(\nu\bar{\nu})\gamma jj$ production and limits on anomalous quartic gauge couplings in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector,” JHEP **06**, 082 (2023) doi:10.1007/JHEP06(2023)082 [arXiv:2208.12741 [hep-ex]].

G. Aad *et al.* [ATLAS], “Evidence for the charge asymmetry in $pp \rightarrow t\bar{t}$ production at $\sqrt{s} = 13$ TeV with the ATLAS detector,” JHEP **08**, 077 (2023) doi:10.1007/JHEP08(2023)077 [arXiv:2208.12095 [hep-ex]].

G. Aad *et al.* [ATLAS], “Search for flavour-changing neutral current interactions of the top quark and the Higgs boson in events with a pair of τ -leptons in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector,” JHEP **2306**, 155 (2023) doi:10.1007/JHEP06(2023)155 [arXiv:2208.11415 [hep-ex]].

G. Aad *et al.* [ATLAS], “Searches for exclusive Higgs and Z boson decays into a vector quarkonium state and a photon using 139 fb⁻¹ of ATLAS $\sqrt{s} = 13$ TeV proton–proton collision data,” Eur. Phys. J. C **83**, no.9, 781 (2023) doi:10.1140/epjc/s10052-023-11869-1 [arXiv:2208.03122 [hep-ex]].

G. Aad *et al.* [ATLAS], “Test of CP Invariance in Higgs Boson Vector-Boson-Fusion Production Using the $H \rightarrow \gamma\gamma$ Channel with the ATLAS Detector,” Phys. Rev. Lett. **131**, no.6, 061802 (2023) doi:10.1103/PhysRevLett.131.061802 [arXiv:2208.02338 [hep-ex]].

G. Aad *et al.* [ATLAS], “Exclusive dielectron production in ultraperipheral Pb+Pb collisions at $\sqrt{s_{NN}} = 5.02$ TeV with ATLAS,” JHEP **2306**, 182 (2023) doi:10.1007/JHEP06(2023)182 [arXiv:2207.12781 [nucl-ex]].

G. Aad *et al.* [ATLAS], “Measurement of the total cross section and ρ -parameter from elastic scat-

- tering in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector," Eur. Phys. J. C **83**, no.5, 441 (2023) doi:10.1140/epjc/s10052-023-11436-8 [arXiv:2207.12246 [hep-ex]].
- G. Aad *et al.* [ATLAS], "Measurement of the total and differential Higgs boson production cross-sections at $\sqrt{s} = 13$ TeV with the ATLAS detector by combining the $H \rightarrow ZZ^* \rightarrow 4\ell$ and $H \rightarrow \gamma\gamma$ decay channels," JHEP **05**, 028 (2023) doi:10.1007/JHEP05(2023)028 [arXiv:2207.08615 [hep-ex]].
- G. Aad *et al.* [ATLAS], "Search for resonant WZ production in the fully leptonic final state in proton–proton collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector," Eur. Phys. J. C **83**, no.7, 633 (2023) doi:10.1140/epjc/s10052-023-11437-7 [arXiv:2207.03925 [hep-ex]].
- G. Aad *et al.* [ATLAS], "Measurement of the $t\bar{t}$ production cross-section in pp collisions at $\sqrt{s} = 5.02$ TeV with the ATLAS detector," JHEP **06**, 138 (2023) doi:10.1007/JHEP06(2023)138 [arXiv:2207.01354 [hep-ex]].
- G. Aad *et al.* [ATLAS], "Search for heavy resonances decaying into a Z or W boson and a Higgs boson in final states with leptons and b -jets in 139 fb^{-1} of pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector," JHEP **06**, 016 (2023) doi:10.1007/JHEP06(2023)016 [arXiv:2207.00230 [hep-ex]].
- G. Aad *et al.* [ATLAS], "Measurements of Higgs boson production by gluon-gluon fusion and vector-boson fusion using $H \rightarrow WW^* \rightarrow e\nu\mu\nu$ decays in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector," Phys. Rev. D **108**, 032005 (2023) doi:10.1103/PhysRevD.108.032005 [arXiv:2207.00338 [hep-ex]].
- G. Aad *et al.* [ATLAS], "Measurement of the properties of Higgs boson production at $\sqrt{s} = 13$ TeV in the $H \rightarrow \gamma\gamma$ channel using 139 fb^{-1} of pp collision data with the ATLAS experiment," JHEP **07**, 088 (2023) doi:10.1007/JHEP07(2023)088 [arXiv:2207.00348 [hep-ex]].
- G. Aad *et al.* [ATLAS], "Measurement of the Higgs boson mass in the $H \rightarrow ZZ^* \rightarrow 4\ell$ decay channel using 139 fb^{-1} of $\sqrt{s} = 13$ TeV pp collisions recorded by the ATLAS detector at the LHC," Phys. Lett. B **843**, 137880 (2023) doi:10.1016/j.physletb.2023.137880 [arXiv:2207.00320 [hep-ex]].
- G. Aad *et al.* [ATLAS], "Measurements of W^+W^- production in decay topologies inspired by searches for electroweak supersymmetry," Eur. Phys. J. C **83**, no.8, 718 (2023) doi:10.1140/epjc/s10052-023-11508-9 [arXiv:2206.15231 [hep-ex]].
- G. Aad *et al.* [ATLAS], "A detailed map of Higgs boson interactions by the ATLAS experiment ten years after the discovery," Nature **607**, no.7917, 52–59 (2022) [erratum: Nature **612**, no.7941, E24 (2022)] doi:10.1038/s41586-022-04893-w [arXiv:2207.00092 [hep-ex]].
- G. Aad *et al.* [ATLAS], "Measurement of muon pairs produced via $\gamma\gamma$ scattering in nonultraperipheral Pb+Pb collisions at $\sqrt{s_{NN}}=5.02$ TeV with the ATLAS detector," Phys. Rev. C **107**, no.5, 054907 (2023) doi:10.1103/PhysRevC.107.054907 [arXiv:2206.12594 [nucl-ex]].
- G. Aad *et al.* [ATLAS], "Search for light long-lived neutral particles that decay to collimated pairs of leptons or light hadrons in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector," JHEP **06**, 153 (2023) doi:10.1007/JHEP06(2023)153 [arXiv:2206.12181 [hep-ex]].
- G. Aad *et al.* [ATLAS], "Search for new phenomena in final states with photons, jets and missing transverse momentum in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector," JHEP **07**, 021 (2023)

doi:10.1007/JHEP07(2023)021 [arXiv:2206.06012 [hep-ex]].

G. Aad *et al.* [ATLAS], “Strong Constraints on Jet Quenching in Centrality-Dependent p+Pb Collisions at 5.02 TeV from ATLAS,” *Phys. Rev. Lett.* **131**, no.7, 072301 (2023) doi:10.1103/PhysRevLett.131.072301 [arXiv:2206.01138 [nucl-ex]].

G. Aad *et al.* [ATLAS and CMS], “Combination of inclusive top-quark pair production cross-section measurements using ATLAS and CMS data at $\sqrt{s} = 7$ and 8 TeV,” *JHEP* **07**, 213 (2023) doi:10.1007/JHEP07(2023)213 [arXiv:2205.13830 [hep-ex]].

G. Aad *et al.* [ATLAS], “Search for heavy, long-lived, charged particles with large ionisation energy loss in *pp* collisions at $\sqrt{s} = 13$ TeV using the ATLAS experiment and the full Run 2 dataset,” *JHEP* **2306**, 158 (2023) doi:10.1007/JHEP06(2023)158 [arXiv:2205.06013 [hep-ex]].

G. Aad *et al.* [ATLAS], “Production of $\Upsilon(nS)$ mesons in Pb+Pb and pp collisions at 5.02 TeV,” *Phys. Rev. C* **107**, no.5, 054912 (2023) doi:10.1103/PhysRevC.107.054912 [arXiv:2205.03042 [nucl-ex]].

G. Aad *et al.* [ATLAS], “Search for flavour-changing neutral-current couplings between the top quark and the photon with the ATLAS detector at $\sqrt{s} = 13$ TeV,” *Phys. Lett. B* **842**, 137379 (2023) [erratum: *Phys. Lett. B* **847**, 138286 (2024)] doi:10.1016/j.physletb.2022.137379 [arXiv:2205.02537 [hep-ex]].

G. Aad *et al.* [ATLAS], “Cross-section measurements for the production of a Z boson in association with high-transverse-momentum jets in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector,” *JHEP* **06**, 080 (2023) doi:10.1007/JHEP06(2023)080 [arXiv:2205.02597 [hep-ex]].

G. Aad *et al.* [ATLAS], “Differential $t\bar{t}$ cross-section measurements using boosted top quarks in the all-hadronic final state with 139 fb^{-1} of ATLAS data,” *JHEP* **04**, 080 (2023) doi:10.1007/JHEP04(2023)080 [arXiv:2205.02817 [hep-ex]].

G. Aad *et al.* [ATLAS], “Measurements of the suppression and correlations of dijets in Pb+Pb collisions at $\sqrt{s_{NN}} = 5.02$ TeV,” *Phys. Rev. C* **107**, no.5, 054908 (2023) doi:10.1103/PhysRevC.107.054908 [arXiv:2205.00682 [nucl-ex]].

G. Aad *et al.* [ATLAS], “Correlations between flow and transverse momentum in Xe+Xe and Pb+Pb collisions at the LHC with the ATLAS detector: A probe of the heavy-ion initial state and nuclear deformation,” *Phys. Rev. C* **107**, no.5, 054910 (2023) doi:10.1103/PhysRevC.107.054910 [arXiv:2205.00039 [nucl-ex]].

G. Aad *et al.* [ATLAS], “Observation of the $\gamma\gamma \rightarrow \tau\tau$ Process in Pb+Pb Collisions and Constraints on the τ -Lepton Anomalous Magnetic Moment with the ATLAS Detector,” *Phys. Rev. Lett.* **131**, no.15, 151802 (2023) doi:10.1103/PhysRevLett.131.151802 [arXiv:2204.13478 [hep-ex]].

G. Aad *et al.* [ATLAS], “Measurement of the nuclear modification factor of *b*-jets in 5.02 TeV Pb+Pb collisions with the ATLAS detector,” *Eur. Phys. J. C* **83**, no.5, 438 (2023) doi:10.1140/epjc/s10052-023-11427-9 [arXiv:2204.13530 [nucl-ex]].

G. Aad *et al.* [ATLAS], “Searches for new phenomena in events with two leptons, jets, and missing transverse momentum in 139 fb^{-1} of 13 TeV pp collisions with the ATLAS detector,” *Eur. Phys. J. C* **83**, no.6, 515 (2023) doi:10.1140/epjc/s10052-023-11434-w [arXiv:2204.13072 [hep-ex]].

- G. Aad *et al.* [ATLAS], “Measurement of cross-sections for production of a Z boson in association with a flavor-inclusive or doubly b -tagged large-radius jet in proton-proton collisions at $\sqrt{s} = 13$ TeV with the ATLAS experiment,” *Phys. Rev. D* **108**, no.1, 012022 (2023) doi:10.1103/PhysRevD.108.012022 [arXiv:2204.12355 [hep-ex]].
- G. Aad *et al.* [ATLAS], “Search for Heavy Neutral Leptons in Decays of W Bosons Using a Dilepton Displaced Vertex in $s=13$ TeV pp Collisions with the ATLAS Detector,” *Phys. Rev. Lett.* **131**, no.6, 061803 (2023) doi:10.1103/PhysRevLett.131.061803 [arXiv:2204.11988 [hep-ex]].
- G. Aad *et al.* [ATLAS], “Search for the charged-lepton-flavor-violating decay $Z \rightarrow e\mu$ in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector,” *Phys. Rev. D* **108**, 032015 (2023) doi:10.1103/PhysRevD.108.032015 [arXiv:2204.10783 [hep-ex]].
- R. G. Suarez, “The Future Circular Collider (FCC) at CERN,” *PoS DISCRETE2020-2021*, 009 (2022) doi:10.22323/1.405.0009 [arXiv:2204.10029 [hep-ex]].
- A. M. Abdullahi, P. B. Alzas, B. Batell, J. Beacham, A. Boyarsky, S. Carbajal, A. Chatterjee, J. I. Crespo-Anadon, F. F. Deppisch and A. De Roeck, *et al.* “The present and future status of heavy neutral leptons,” *J. Phys. G* **50**, no.2, 020501 (2023) doi:10.1088/1361-6471/ac98f9 [arXiv:2203.08039 [hep-ph]].
- G. Aielli, J. Alimena, J. Beacham, E. Ben-Haim, M. Borsato, M. J. Charles, X. C. Vidal, V. Coco, A. De Roeck and B. Dey, *et al.* “The Road Ahead for CODEX-b,” [arXiv:2203.07316 [hep-ex]].
- G. Bernardi, E. Brost, D. Denisov, G. Landsberg, M. Aleksa, D. d’Enterria, P. Janot, M. L. Mangano, M. Selvaggi and F. Zimmermann, *et al.* “The Future Circular Collider: a Summary for the US 2021 Snowmass Process,” [arXiv:2203.06520 [hep-ex]].
- A. Blondel, C. B. Verhaaren, J. Alimena, M. Bauer, P. Azzi, R. Ruiz, M. Neubert, O. Mikulenko, M. Ovchinnikov and M. Drewes, *et al.* “Searches for long-lived particles at the future FCC-ee,” *Front. in Phys.* **10**, 967881 (2022) doi:10.3389/fphy.2022.967881 [arXiv:2203.05502 [hep-ex]].
- G. Aad *et al.* [ATLAS], “Study of $B_c^+ \rightarrow J/\psi D_s^+$ and $B_c^+ \rightarrow J/\psi D_s^{*+}$ decays in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector,” *JHEP* **08**, 087 (2022) doi:10.1007/JHEP08(2022)087 [arXiv:2203.01808 [hep-ex]].
- G. Aad *et al.* [ATLAS], “Search for neutral long-lived particles in pp collisions at $\sqrt{s} = 13$ TeV that decay into displaced hadronic jets in the ATLAS calorimeter,” *JHEP* **06**, 005 (2022) doi:10.1007/JHEP06(2022)005 [arXiv:2203.01009 [hep-ex]].
- G. Aad *et al.* [ATLAS], “Search for events with a pair of displaced vertices from long-lived neutral particles decaying into hadronic jets in the ATLAS muon spectrometer in pp collisions at $\sqrt{s}=13$ TeV,” *Phys. Rev. D* **106**, no.3, 032005 (2022) doi:10.1103/PhysRevD.106.032005 [arXiv:2203.00587 [hep-ex]].
- G. Aad *et al.* [ATLAS], “Measurements of jet observables sensitive to b-quark fragmentation in tt^- events at the LHC with the ATLAS detector,” *Phys. Rev. D* **106**, no.3, 032008 (2022) doi:10.1103/PhysRevD.106.032008 [arXiv:2202.13901 [hep-ex]].
- G. Aad *et al.* [ATLAS], “Measurements of differential cross-sections in top-quark pair events with a high transverse momentum top quark and limits on beyond the Standard Model contributions to top-quark pair

production with the ATLAS detector at $\sqrt{s} = 13$ TeV," JHEP **06**, 063 (2022) doi:10.1007/JHEP06(2022)063 [arXiv:2202.12134 [hep-ex]].

G. Aad *et al.* [ATLAS], "Measurement of the polarisation of single top quarks and antiquarks produced in the t-channel at $\sqrt{s} = 13$ TeV and bounds on the tWb dipole operator from the ATLAS experiment," JHEP **11**, 040 (2022) doi:10.1007/JHEP11(2022)040 [arXiv:2202.11382 [hep-ex]].

G. Aad *et al.* [ATLAS], "Search for invisible Higgs-boson decays in events with vector-boson fusion signatures using 139 fb^{-1} of proton-proton data recorded by the ATLAS experiment," JHEP **08**, 104 (2022) doi:10.1007/JHEP08(2022)104 [arXiv:2202.07953 [hep-ex]].

G. Aad *et al.* [ATLAS], "Search for resonant pair production of Higgs bosons in the $b\bar{b}b\bar{b}$ final state using pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector," Phys. Rev. D **105**, no.9, 092002 (2022) doi:10.1103/PhysRevD.105.092002 [arXiv:2202.07288 [hep-ex]].

G. Aad *et al.* [ATLAS], "Search for type-III seesaw heavy leptons in leptonic final states in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector," Eur. Phys. J. C **82**, no.11, 988 (2022) doi:10.1140/epjc/s10052-022-10785-0 [arXiv:2202.02039 [hep-ex]].

G. Aad *et al.* [ATLAS], "Measurements of the Higgs boson inclusive and differential fiducial cross-sections in the diphoton decay channel with pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector," JHEP **08**, 027 (2022) doi:10.1007/JHEP08(2022)027 [arXiv:2202.00487 [hep-ex]].

G. Aad *et al.* [ATLAS], "Observation of WWW Production in pp Collisions at $\sqrt{s} = 13$ TeV with the ATLAS Detector," Phys. Rev. Lett. **129**, no.6, 061803 (2022) doi:10.1103/PhysRevLett.129.061803 [arXiv:2201.13045 [hep-ex]].

S. Goldfarb *et al.* [ATLAS], "The ATLAS public website-Evolution to Drupal 8," PoS **EPS-HEP2021**, 888 (2022) doi:10.22323/1.398.0888

G. Aad *et al.* [ATLAS], "Direct constraint on the Higgs-charm coupling from a search for Higgs boson decays into charm quarks with the ATLAS detector," Eur. Phys. J. C **82**, 717 (2022) doi:10.1140/epjc/s10052-022-10588-3 [arXiv:2201.11428 [hep-ex]].

G. Aad *et al.* [ATLAS], "Measurements of Higgs boson production cross-sections in the $H \rightarrow \tau^+\tau^-$ decay channel in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector," JHEP **08**, 175 (2022) doi:10.1007/JHEP08(2022)175 [arXiv:2201.08269 [hep-ex]].

G. Aad *et al.* [ATLAS], "Search for single production of a vectorlike T quark decaying into a Higgs boson and top quark with fully hadronic final states using the ATLAS detector," Phys. Rev. D **105**, no.9, 092012 (2022) doi:10.1103/PhysRevD.105.092012 [arXiv:2201.07045 [hep-ex]].

G. Aad *et al.* [ATLAS], "Search for long-lived charginos based on a disappearing-track signature using 136 fb^{-1} of pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector," Eur. Phys. J. C **82**, no.7, 606 (2022) doi:10.1140/epjc/s10052-022-10489-5 [arXiv:2201.02472 [hep-ex]].

G. Aad *et al.* [ATLAS], "Search for Higgs boson pair production in the two bottom quarks plus two photons final state in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector," Phys. Rev. D **106**, no.5, 052001 (2022) doi:10.1103/PhysRevD.106.052001 [arXiv:2112.11876 [hep-ex]].

- G. Aad *et al.* [ATLAS], "Determination of the parton distribution functions of the proton using diverse ATLAS data from pp collisions at $\sqrt{s} = 7, 8$ and 13 TeV," *Eur. Phys. J. C* **82**, no.5, 438 (2022) doi:10.1140/epjc/s10052-022-10217-z [arXiv:2112.11266 [hep-ex]].
- G. Aad *et al.* [ATLAS], "Modelling and computational improvements to the simulation of single vector-boson plus jet processes for the ATLAS experiment," *JHEP* **08**, 089 (2022) doi:10.1007/JHEP08(2022)089 [arXiv:2112.09588 [hep-ex]].
- G. Aad *et al.* [ATLAS], "A search for an unexpected asymmetry in the production of $e+\mu^-$ and $e-\mu^+$ pairs in proton-proton collisions recorded by the ATLAS detector at $s=13$ TeV," *Phys. Lett. B* **830**, 137106 (2022) doi:10.1016/j.physletb.2022.137106 [arXiv:2112.08090 [hep-ex]].
- G. Aad *et al.* [ATLAS], "Search for flavour-changing neutral-current interactions of a top quark and a gluon in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector," *Eur. Phys. J. C* **82**, no.4, 334 (2022) doi:10.1140/epjc/s10052-022-10182-7 [arXiv:2112.01302 [hep-ex]].
- G. Aad *et al.* [ATLAS], "Search for associated production of a Z boson with an invisibly decaying Higgs boson or dark matter candidates at $s=13$ TeV with the ATLAS detector," *Phys. Lett. B* **829**, 137066 (2022) doi:10.1016/j.physletb.2022.137066 [arXiv:2111.08372 [hep-ex]].
- G. Aad *et al.* [ATLAS], "Constraints on Higgs boson production with large transverse momentum using $H \rightarrow b\bar{b}$ decays in the ATLAS detector," *Phys. Rev. D* **105**, no.9, 092003 (2022) doi:10.1103/PhysRevD.105.092003 [arXiv:2111.08340 [hep-ex]].
- G. Aad *et al.* [ATLAS], "Measurements of azimuthal anisotropies of jet production in Pb+Pb collisions at $\sqrt{s_{NN}} = 5.02$ TeV with the ATLAS detector," *Phys. Rev. C* **105**, no.6, 064903 (2022) doi:10.1103/PhysRevC.105.064903 [arXiv:2111.06606 [nucl-ex]].
- G. Aad *et al.* [ATLAS], "Measurement of Higgs boson decay into b -quarks in associated production with a top-quark pair in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector," *JHEP* **06**, 097 (2022) doi:10.1007/JHEP06(2022)097 [arXiv:2111.06712 [hep-ex]].
- G. Aad *et al.* [ATLAS], "Search for Higgs bosons decaying into new spin-0 or spin-1 particles in four-lepton final states with the ATLAS detector with 139 fb^{-1} of pp collision data at $\sqrt{s} = 13$ TeV," *JHEP* **03**, 041 (2022) doi:10.1007/JHEP03(2022)041 [arXiv:2110.13673 [hep-ex]].
- G. Aad *et al.* [ATLAS], "Measurement of the energy asymmetry in $t\bar{t}j$ production at 13 TeV with the ATLAS experiment and interpretation in the SMEFT framework," *Eur. Phys. J. C* **82**, no.4, 374 (2022) doi:10.1140/epjc/s10052-022-10101-w [arXiv:2110.05453 [hep-ex]].
- G. Aad *et al.* [ATLAS], "Search for Higgs boson decays into a pair of pseudoscalar particles in the $b\bar{b}\mu\mu$ final state with the ATLAS detector in pp collisions at $\sqrt{s}=13$ TeV," *Phys. Rev. D* **105**, no.1, 012006 (2022) doi:10.1103/PhysRevD.105.012006 [arXiv:2110.00313 [hep-ex]].
- G. Aad *et al.* [ATLAS], "Constraints on Higgs boson properties using $WW^*(\rightarrow e\nu\mu\nu)jj$ production in 36.1 fb^{-1} of $\sqrt{s} = 13$ TeV pp collisions with the ATLAS detector," *Eur. Phys. J. C* **82**, no.7, 622 (2022) doi:10.1140/epjc/s10052-022-10366-1 [arXiv:2109.13808 [hep-ex]].

- G. Aad *et al.* [ATLAS], “Measurement of the c -jet mistagging efficiency in $t\bar{t}$ events using pp collision data at $\sqrt{s} = 13$ TeV collected with the ATLAS detector,” *Eur. Phys. J. C* **82**, no.1, 95 (2022) doi:10.1140/epjc/s10052-021-09843-w [arXiv:2109.10627 [hep-ex]].
- G. Aad *et al.* [ATLAS], “Search for exotic decays of the Higgs boson into $b\bar{b}$ and missing transverse momentum in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector,” *JHEP* **01**, 063 (2022) doi:10.1007/JHEP01(2022)063 [arXiv:2109.02447 [hep-ex]].
- G. Aad *et al.* [ATLAS], “Operation and performance of the ATLAS semiconductor tracker in LHC Run 2,” *JINST* **17**, no.01, P01013 (2022) doi:10.1088/1748-0221/17/01/P01013 [arXiv:2109.02591 [physics.ins-det]].
- G. Aad *et al.* [ATLAS], “AtlFast3: The Next Generation of Fast Simulation in ATLAS,” *Comput. Softw. Big Sci.* **6**, no.1, 7 (2022) doi:10.1007/s41781-021-00079-7 [arXiv:2109.02551 [hep-ex]].
- G. Aad *et al.* [ATLAS], “Observation of electroweak production of two jets in association with an isolated photon and missing transverse momentum, and search for a Higgs boson decaying into invisible particles at 13 TeV with the ATLAS detector,” *Eur. Phys. J. C* **82**, no.2, 105 (2022) doi:10.1140/epjc/s10052-021-09878-z [arXiv:2109.00925 [hep-ex]].
- O. Sunneborn Gudnadottir, D. Gedon, C. Desmarais, K. B. Bernander, R. Sainudiin and R. G. Suarez, “Distributed training and scalability for the particle clustering method UCluster,” *EPJ Web Conf.* **251**, 02054 (2021) doi:10.1051/epjconf/202125102054 [arXiv:2109.00264 [hep-ex]].
- G. Aad *et al.* [ATLAS], “Measurement of the nuclear modification factor for muons from charm and bottom hadrons in Pb+Pb collisions at 5.02 TeV with the ATLAS detector,” *Phys. Lett. B* **829**, 137077 (2022) doi:10.1016/j.physletb.2022.137077 [arXiv:2109.00411 [nucl-ex]].
- G. Aad *et al.* [ATLAS], “Search for dark matter produced in association with a Standard Model Higgs boson decaying into b -quarks using the full Run 2 dataset from the ATLAS detector,” *JHEP* **11**, 209 (2021) doi:10.1007/JHEP11(2021)209 [arXiv:2108.13391 [hep-ex]].
- G. Aad *et al.* [ATLAS], “Measurement of b -quark fragmentation properties in jets using the decay $B^\pm \rightarrow J/\psi K^\pm$ in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector,” *JHEP* **12**, 131 (2021) doi:10.1007/JHEP12(2021)131 [arXiv:2108.11650 [hep-ex]].
- G. Aad *et al.* [ATLAS], “Search for heavy particles in the b -tagged dijet mass distribution with additional b -tagged jets in proton-proton collisions at $\sqrt{s} = 13$ TeV with the ATLAS experiment,” *Phys. Rev. D* **105**, no.1, 012001 (2022) doi:10.1103/PhysRevD.105.012001 [arXiv:2108.09059 [hep-ex]].
- G. Aad *et al.* [ATLAS], “Measurement of the energy response of the ATLAS calorimeter to charged pions from $W^\pm \rightarrow \tau^\pm(\rightarrow \pi^\pm \nu_\tau)\nu_\tau$ events in Run 2 data,” *Eur. Phys. J. C* **82**, no.3, 223 (2022) doi:10.1140/epjc/s10052-022-10117-2 [arXiv:2108.09043 [hep-ex]].
- G. Aad *et al.* [ATLAS], “Search for charginos and neutralinos in final states with two boosted hadronically decaying bosons and missing transverse momentum in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector,” *Phys. Rev. D* **104**, no.11, 112010 (2021) doi:10.1103/PhysRevD.104.112010 [arXiv:2108.07586 [hep-ex]].

G. Aad *et al.* [ATLAS], “Search for new phenomena in pp collisions in final states with tau leptons, b-jets, and missing transverse momentum with the ATLAS detector,” Phys. Rev. D **104**, no.11, 112005 (2021) doi:10.1103/PhysRevD.104.112005 [arXiv:2108.07665 [hep-ex]].

G. Aad *et al.* [ATLAS], “Measurement of the production cross section of pairs of isolated photons in pp collisions at 13 TeV with the ATLAS detector,” JHEP **11**, 169 (2021) doi:10.1007/JHEP11(2021)169 [arXiv:2107.09330 [hep-ex]].

G. Aad *et al.* [ATLAS], “Search for exotic decays of the Higgs boson into long-lived particles in pp collisions at $\sqrt{s} = 13$ TeV using displaced vertices in the ATLAS inner detector,” JHEP **11**, 229 (2021) doi:10.1007/JHEP11(2021)229 [arXiv:2107.06092 [hep-ex]].

G. Aad *et al.* [ATLAS], “The ATLAS inner detector trigger performance in pp collisions at 13 TeV during LHC Run 2,” Eur. Phys. J. C **82**, no.3, 206 (2022) doi:10.1140/epjc/s10052-021-09920-0 [arXiv:2107.02485 [hep-ex]].

G. Aad *et al.* [ATLAS], “Search for new phenomena in three- or four-lepton events in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector,” Phys. Lett. B **824**, 136832 (2022) doi:10.1016/j.physletb.2021.136832 [arXiv:2107.00404 [hep-ex]].

M. Chrzaszcz, R. G. Suarez and S. Monteil, “Hunt for rare processes and long-lived particles at FCC-ee,” Eur. Phys. J. Plus **136**, no.10, 1056 (2021) doi:10.1140/epjp/s13360-021-01961-4 [arXiv:2106.15459 [hep-ex]].

G. Aad *et al.* [ATLAS], “Measurement of the $t\bar{t}\bar{t}$ production cross section in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector,” JHEP **11**, 118 (2021) doi:10.1007/JHEP11(2021)118 [arXiv:2106.11683 [hep-ex]].

G. Aad *et al.* [ATLAS], “Search for R-parity-violating supersymmetry in a final state containing leptons and many jets with the ATLAS experiment using $\sqrt{s} = 13\text{TeV}$ proton–proton collision data,” Eur. Phys. J. C **81**, no.11, 1023 (2021) doi:10.1140/epjc/s10052-021-09761-x [arXiv:2106.09609 [hep-ex]].

G. Aad *et al.* [ATLAS], “Measurements of sensor radiation damage in the ATLAS inner detector using leakage currents,” JINST **16**, P08025 (2021) doi:10.1088/1748-0221/16/08/P08025 [arXiv:2106.09287 [hep-ex]].

G. Aad *et al.* [ATLAS], “Configuration and performance of the ATLAS b -jet triggers in Run 2,” Eur. Phys. J. C **81**, no.12, 1087 (2021) doi:10.1140/epjc/s10052-021-09775-5 [arXiv:2106.03584 [hep-ex]].

G. Aad *et al.* [ATLAS], “Search for chargino–neutralino pair production in final states with three leptons and missing transverse momentum in $\sqrt{s} = 13$ TeV pp collisions with the ATLAS detector,” Eur. Phys. J. C **81**, no.12, 1118 (2021) doi:10.1140/epjc/s10052-021-09749-7 [arXiv:2106.01676 [hep-ex]].

G. Aad *et al.* [ATLAS], “Search for New Phenomena in Final States with Two Leptons and One or No b -Tagged Jets at $\sqrt{s} = 13$ TeV Using the ATLAS Detector,” Phys. Rev. Lett. **127**, no.14, 141801 (2021) doi:10.1103/PhysRevLett.127.141801 [arXiv:2105.13847 [hep-ex]].

G. Aad *et al.* [ATLAS], “Search for lepton-flavor-violation in Z -boson decays with τ -leptons with the ATLAS detector,” Phys. Rev. Lett. **127**, 271801 (2022) doi:10.1103/PhysRevLett.127.271801

[arXiv:2105.12491 [hep-ex]].

G. Aad *et al.* [ATLAS], “Performance of the ATLAS Level-1 topological trigger in Run 2,” *Eur. Phys. J. C* **82**, no.1, 7 (2022) doi:10.1140/epjc/s10052-021-09807-0 [arXiv:2105.01416 [hep-ex]].

G. Aad *et al.* [ATLAS], “Search for dark matter in events with missing transverse momentum and a Higgs boson decaying into two photons in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector,” *JHEP* **10**, 013 (2021) doi:10.1007/JHEP10(2021)013 [arXiv:2104.13240 [hep-ex]].

G. Aad *et al.* [ATLAS], “A search for the decays of stopped long-lived particles at $\sqrt{s} = 13$ TeV with the ATLAS detector,” *JHEP* **07**, 173 (2021) doi:10.1007/JHEP07(2021)173 [arXiv:2104.03050 [hep-ex]].

G. Aad *et al.* [ATLAS], “Measurements of the inclusive and differential production cross sections of a top-quark–antiquark pair in association with a Z boson at $\sqrt{s} = 13$ TeV with the ATLAS detector,” *Eur. Phys. J. C* **81**, no.8, 737 (2021) doi:10.1140/epjc/s10052-021-09439-4 [arXiv:2103.12603 [hep-ex]].

G. Aad *et al.* [ATLAS], “Search for supersymmetry in events with four or more charged leptons in 139 fb^{-1} of $\sqrt{s} = 13$ TeV pp collisions with the ATLAS detector,” *JHEP* **07**, 167 (2021) doi:10.1007/JHEP07(2021)167 [arXiv:2103.11684 [hep-ex]].

G. Aad *et al.* [ATLAS], “Evidence for Higgs boson decays to a low-mass dilepton system and a photon in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector,” *Phys. Lett. B* **819**, 136412 (2021) doi:10.1016/j.physletb.2021.136412 [arXiv:2103.10322 [hep-ex]].

G. Aad *et al.* [ATLAS], “Measurements of $W^+W^- + \geq 1$ jet production cross-sections in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector,” *JHEP* **06**, 003 (2021) doi:10.1007/JHEP06(2021)003 [arXiv:2103.10319 [hep-ex]].

G. Aad *et al.* [ATLAS], “Search for bottom-squark pair production in pp collision events at $\sqrt{s} = 13$ TeV with hadronically decaying τ -leptons, b -jets and missing transverse momentum using the ATLAS detector,” *Phys. Rev. D* **104**, no.3, 032014 (2021) doi:10.1103/PhysRevD.104.032014 [arXiv:2103.08189 [hep-ex]].

G. Aad *et al.* [ATLAS], “Measurements of differential cross-sections in four-lepton events in 13 TeV proton-proton collisions with the ATLAS detector,” *JHEP* **07**, 005 (2021) doi:10.1007/JHEP07(2021)005 [arXiv:2103.01918 [hep-ex]].

G. Aad *et al.* [ATLAS], “Search for resonances decaying into photon pairs in 139 fb^{-1} of pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector,” *Phys. Lett. B* **822**, 136651 (2021) doi:10.1016/j.physletb.2021.136651 [arXiv:2102.13405 [hep-ex]].

G. Aad *et al.* [ATLAS], “Performance of the ATLAS RPC detector and Level-1 muon barrel trigger at $\sqrt{s} = 13$ TeV,” *JINST* **16**, no.07, P07029 (2021) doi:10.1088/1748-0221/16/07/P07029 [arXiv:2103.01029 [physics.ins-det]].

G. Aad *et al.* [ATLAS], “Search for new phenomena in events with an energetic jet and missing transverse momentum in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector,” *Phys. Rev. D* **103**, no.11, 112006 (2021) doi:10.1103/PhysRevD.103.112006 [arXiv:2102.10874 [hep-ex]].

G. Aad *et al.* [ATLAS], “Search for charged Higgs bosons decaying into a top quark and a bottom quark at $\sqrt{s} = 13$ TeV with the ATLAS detector,” JHEP **06**, 145 (2021) doi:10.1007/JHEP06(2021)145 [arXiv:2102.10076 [hep-ex]].

G. Aad *et al.* [ATLAS], “Emulating the impact of additional proton–proton interactions in the ATLAS simulation by presampling sets of inelastic Monte Carlo events,” Comput. Softw. Big Sci. **6**, no.1, 3 (2022) doi:10.1007/s41781-021-00062-2 [arXiv:2102.09495 [hep-ex]].

R. G. Suarez, “Long-lived Particles at Future Colliders,” Acta Phys. Polon. B **52**, no.8, 953 (2021) doi:10.5506/APhysPolB.52.953 [arXiv:2102.07597 [hep-ex]].

G. Aad *et al.* [ATLAS], “Search for new phenomena in events with two opposite-charge leptons, jets and missing transverse momentum in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector,” JHEP **04**, 165 (2021) doi:10.1007/JHEP04(2021)165 [arXiv:2102.01444 [hep-ex]].

G. Aad *et al.* [ATLAS], “Search for new phenomena in final states with b -jets and missing transverse momentum in $\sqrt{s} = 13$ TeV pp collisions with the ATLAS detector,” JHEP **05**, 093 (2021) doi:10.1007/JHEP05(2021)093 [arXiv:2101.12527 [hep-ex]].

G. Aad *et al.* [ATLAS], “Search for doubly and singly charged Higgs bosons decaying into vector bosons in multi-lepton final states with the ATLAS detector using proton-proton collisions at $\sqrt{s} = 13$ TeV,” JHEP **06**, 146 (2021) doi:10.1007/JHEP06(2021)146 [arXiv:2101.11961 [hep-ex]].

G. Aad *et al.* [ATLAS], “Search for pair production of third-generation scalar leptoquarks decaying into a top quark and a τ -lepton in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector,” JHEP **06**, 179 (2021) doi:10.1007/JHEP06(2021)179 [arXiv:2101.11582 [hep-ex]].

G. Aad *et al.* [ATLAS], “Two-particle azimuthal correlations in photonuclear ultraperipheral Pb+Pb collisions at 5.02 TeV with ATLAS,” Phys. Rev. C **104**, no.1, 014903 (2021) doi:10.1103/PhysRevC.104.014903 [arXiv:2101.10771 [nucl-ex]].

G. Aad *et al.* [ATLAS], “Determination of the parton distribution functions of the proton from ATLAS measurements of differential W and Z boson production in association with jets,” JHEP **07**, 223 (2021) doi:10.1007/JHEP07(2021)223 [arXiv:2101.05095 [hep-ex]].

G. Aad *et al.* [ATLAS], “The ATLAS Fast TracKer system,” JINST **16**, P07006 (2021) doi:10.1088/1748-0221/16/07/P07006 [arXiv:2101.05078 [physics.ins-det]].

G. Aad *et al.* [ATLAS], “Search for squarks and gluinos in final states with one isolated lepton, jets, and missing transverse momentum at $\sqrt{s} = 13$ with the ATLAS detector,” Eur. Phys. J. C **81**, no.7, 600 (2021) [erratum: Eur. Phys. J. C **81**, no.10, 956 (2021)] doi:10.1140/epjc/s10052-021-09748-8 [arXiv:2101.01629 [hep-ex]].

G. Aad *et al.* [ATLAS], “Search for new phenomena with top quark pairs in final states with one lepton, jets, and missing transverse momentum in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector,” JHEP **04**, 174 (2021) doi:10.1007/JHEP04(2021)174 [arXiv:2012.03799 [hep-ex]].

G. Aad *et al.* [ATLAS], “Muon reconstruction and identification efficiency in ATLAS using the full Run 2 pp collision data set at $\sqrt{s} = 13$ TeV,” *Eur. Phys. J. C* **81**, no.7, 578 (2021) doi:10.1140/epjc/s10052-021-09233-2 [arXiv:2012.00578 [hep-ex]].

G. Aad *et al.* [ATLAS], “Exclusive dimuon production in ultraperipheral Pb+Pb collisions at $\sqrt{s_{NN}} = 5.02$ TeV with ATLAS,” *Phys. Rev. C* **104**, 024906 (2021) doi:10.1103/PhysRevC.104.024906 [arXiv:2011.12211 [nucl-ex]].

G. Aad *et al.* [ATLAS], “Search for trilepton resonances from chargino and neutralino pair production in $\sqrt{s} = 13$ TeV pp collisions with the ATLAS detector,” *Phys. Rev. D* **103**, no.11, 112003 (2021) doi:10.1103/PhysRevD.103.112003 [arXiv:2011.10543 [hep-ex]].

G. Aad *et al.* [ATLAS], “Search for dark matter produced in association with a single top quark in $\sqrt{s} = 13$ TeV pp collisions with the ATLAS detector,” *Eur. Phys. J. C* **81**, no.10, 860 (2021) doi:10.1140/epjc/s10052-021-09566-y [arXiv:2011.09308 [hep-ex]].

G. Aad *et al.* [ATLAS], “Search for Displaced Leptons in $\sqrt{s} = 13$ TeV pp Collisions with the ATLAS Detector,” *Phys. Rev. Lett.* **127**, no.5, 051802 (2021) doi:10.1103/PhysRevLett.127.051802 [arXiv:2011.07812 [hep-ex]].

G. Aad *et al.* [ATLAS], “Measurements of Higgs bosons decaying to bottom quarks from vector boson fusion production with the ATLAS experiment at $\sqrt{s} = 13$ TeV,” *Eur. Phys. J. C* **81**, no.6, 537 (2021) doi:10.1140/epjc/s10052-021-09192-8 [arXiv:2011.08280 [hep-ex]].

G. Aad *et al.* [ATLAS], “Search for a heavy Higgs boson decaying into a Z boson and another heavy Higgs boson in the $llbb$ and $llWW$ final states in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector,” *Eur. Phys. J. C* **81**, no.5, 396 (2021) doi:10.1140/epjc/s10052-021-09117-5 [arXiv:2011.05639 [hep-ex]].

G. Aad *et al.* [ATLAS], “Search for dark matter in association with an energetic photon in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector,” *JHEP* **02**, 226 (2021) doi:10.1007/JHEP02(2021)226 [arXiv:2011.05259 [hep-ex]].

G. Aad *et al.* [ATLAS], “Search for squarks and gluinos in final states with jets and missing transverse momentum using 139 fb^{-1} of $\sqrt{s}=13 \text{ TeV}$ pp collision data with the ATLAS detector,” JHEP **02**, 143 (2021) doi:10.1007/JHEP02(2021)143 [arXiv:2010.14293 [hep-ex]].

G. Aad *et al.* [ATLAS], “Search for Higgs boson production in association with a high-energy photon via vector-boson fusion with decay into bottom quark pairs at $\sqrt{s}=13 \text{ TeV}$ with the ATLAS detector,” JHEP **03**, 268 (2021) doi:10.1007/JHEP03(2021)268 [arXiv:2010.13651 [hep-ex]].

G. Aad *et al.* [ATLAS], “Search for Dark Matter Produced in Association with a Dark Higgs Boson Decaying into $W^\pm W^\mp$ or ZZ in Fully Hadronic Final States from $\sqrt{s} = 13 \text{ TeV}$ pp Collisions Recorded with the ATLAS Detector,” Phys. Rev. Lett. **126**, no.12, 121802 (2021) doi:10.1103/PhysRevLett.126.121802 [arXiv:2010.06548 [hep-ex]].

G. Aad *et al.* [ATLAS], “Observation of photon-induced W^+W^- production in pp collisions at $\sqrt{s} = 13 \text{ TeV}$ using the ATLAS detector,” Phys. Lett. B **816**, 136190 (2021) doi:10.1016/j.physletb.2021.136190 [arXiv:2010.04019 [hep-ex]].

G. Aad *et al.* [ATLAS], “Search for charged-lepton-flavour violation in Z -boson decays with the ATLAS detector,” Nature Phys. **17**, no.7, 819-825 (2021) doi:10.1038/s41567-021-01225-z [arXiv:2010.02566 [hep-ex]].

G. Aad *et al.* [ATLAS], “Search for pair production of scalar leptoquarks decaying into first- or second-generation leptons and top quarks in proton–proton collisions at $\sqrt{s} = 13 \text{ TeV}$ with the ATLAS detector,” Eur. Phys. J. C **81**, no.4, 313 (2021) doi:10.1140/epjc/s10052-021-09009-8 [arXiv:2010.02098 [hep-ex]].

G. Aad *et al.* [ATLAS], “Search for phenomena beyond the Standard Model in events with large b -jet multiplicity using the ATLAS detector at the LHC,” Eur. Phys. J. C **81**, no.1, 11 (2021) [erratum: Eur. Phys. J. C **81**, no.3, 249 (2021)] doi:10.1140/epjc/s10052-020-08730-0 [arXiv:2010.01015 [hep-ex]].

G. Aad *et al.* [ATLAS], “Observation and Measurement of Forward Proton Scattering in Association with Lepton Pairs Produced via the Photon Fusion Mechanism at ATLAS,” Phys. Rev. Lett. **125**, no.26, 261801 (2020) doi:10.1103/PhysRevLett.125.261801 [arXiv:2009.14537 [hep-ex]].

G. Aad *et al.* [ATLAS], “Search for heavy resonances decaying into a pair of Z bosons in the $\ell^+\ell^-\ell'^+\ell'^-$ and $\ell^+\ell^-\nu\bar{\nu}$ final states using 139 fb^{-1} of proton–proton collisions at $\sqrt{s} = 13\text{ TeV}$ with the ATLAS detector,” *Eur. Phys. J. C* **81**, no.4, 332 (2021) doi:10.1140/epjc/s10052-021-09013-y [arXiv:2009.14791 [hep-ex]].

G. Aad *et al.* [ATLAS], “Optimisation of large-radius jet reconstruction for the ATLAS detector in 13 TeV proton–proton collisions,” *Eur. Phys. J. C* **81**, no.4, 334 (2021) doi:10.1140/epjc/s10052-021-09054-3 [arXiv:2009.04986 [hep-ex]].

G. Aad *et al.* [ATLAS], “Medium-Induced Modification of Z-Tagged Charged Particle Yields in $Pb + Pb$ Collisions at 5.02 TeV with the ATLAS Detector,” *Phys. Rev. Lett.* **126**, no.7, 072301 (2021) doi:10.1103/PhysRevLett.126.072301 [arXiv:2008.09811 [nucl-ex]].

G. Aad *et al.* [ATLAS], “Search for type-III seesaw heavy leptons in dilepton final states in pp collisions at $\sqrt{s} = 13\text{ TeV}$ with the ATLAS detector,” *Eur. Phys. J. C* **81**, no.3, 218 (2021) doi:10.1140/epjc/s10052-021-08929-9 [arXiv:2008.07949 [hep-ex]].

G. Aad *et al.* [ATLAS], “Search for heavy resonances decaying into a photon and a hadronically decaying Higgs boson in pp collisions at $\sqrt{s} = 13\text{ TeV}$ with the ATLAS detector,” *Phys. Rev. Lett.* **125**, 251802 (2020) doi:10.1103/PhysRevLett.125.251802 [arXiv:2008.05928 [hep-ex]].

G. Aad *et al.* [ATLAS], “Search for new phenomena in final states with large jet multiplicities and missing transverse momentum using $\sqrt{s} = 13\text{ TeV}$ proton-proton collisions recorded by ATLAS in Run 2 of the LHC,” *JHEP* **10**, 062 (2020) doi:10.1007/JHEP10(2020)062 [arXiv:2008.06032 [hep-ex]].

G. Aad *et al.* [ATLAS], “Measurement of light-by-light scattering and search for axion-like particles with 2.2 nb^{-1} of Pb+Pb data with the ATLAS detector,” *JHEP* **11**, 050 (2021) doi:10.1007/JHEP11(2021)050 [arXiv:2008.05355 [hep-ex]].

G. Aad *et al.* [ATLAS], “Measurement of the associated production of a Higgs boson decaying into b -quarks with a vector boson at high transverse momentum in pp collisions at $\sqrt{s} = 13\text{ TeV}$ with the ATLAS detector,” *Phys. Lett. B* **816**, 136204 (2021) doi:10.1016/j.physletb.2021.136204 [arXiv:2008.02508 [hep-ex]].

G. Aad *et al.* [ATLAS], “Evidence for $t\bar{t}\bar{t}$ production in the multilepton final state in proton–proton collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector,” *Eur. Phys. J. C* **80**, no.11, 1085 (2020) doi:10.1140/epjc/s10052-020-08509-3 [arXiv:2007.14858 [hep-ex]].

G. Aad *et al.* [ATLAS], “Reconstruction and identification of boosted di- τ systems in a search for Higgs boson pairs using 13 TeV proton-proton collision data in ATLAS,” *JHEP* **11**, 163 (2020) doi:10.1007/JHEP11(2020)163 [arXiv:2007.14811 [hep-ex]].

G. Aad *et al.* [ATLAS], “Test of the universality of τ and μ lepton couplings in W -boson decays with the ATLAS detector,” *Nature Phys.* **17**, no.7, 813-818 (2021) doi:10.1038/s41567-021-01236-w [arXiv:2007.14040 [hep-ex]].

G. Aad *et al.* [ATLAS], “Operation of the ATLAS trigger system in Run 2,” *JINST* **15**, no.10, P10004 (2020) doi:10.1088/1748-0221/15/10/P10004 [arXiv:2007.12539 [physics.ins-det]].

G. Aad *et al.* [ATLAS], “Measurement of hadronic event shapes in high- p_T multijet final states at $\sqrt{s} = 13$ TeV with the ATLAS detector,” *JHEP* **01**, 188 (2021) doi:10.1007/JHEP01(2021)188 [arXiv:2007.12600 [hep-ex]].

G. Aad *et al.* [ATLAS], “Search for resonances decaying into a weak vector boson and a Higgs boson in the fully hadronic final state produced in proton–proton collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector,” *Phys. Rev. D* **102**, no.11, 112008 (2020) doi:10.1103/PhysRevD.102.112008 [arXiv:2007.05293 [hep-ex]].

G. Aad *et al.* [ATLAS], “A search for the dimuon decay of the Standard Model Higgs boson with the ATLAS detector,” *Phys. Lett. B* **812**, 135980 (2021) doi:10.1016/j.physletb.2020.135980 [arXiv:2007.07830 [hep-ex]].

G. Aad *et al.* [ATLAS], “Alignment of the ATLAS Inner Detector in Run-2,” *Eur. Phys. J. C* **80**, no.12, 1194 (2020) doi:10.1140/epjc/s10052-020-08700-6 [arXiv:2007.07624 [hep-ex]].

G. Aad *et al.* [ATLAS], “Measurements of inclusive and differential cross-sections of combined $t\bar{t}\gamma$ and $tW\gamma$ production in the $e\mu$ channel at 13 TeV with the ATLAS detector,” JHEP **09**, 049 (2020) doi:10.1007/JHEP09(2020)049 [arXiv:2007.06946 [hep-ex]].

G. Aad *et al.* [ATLAS], “Measurements of WH and ZH production in the $H \rightarrow b\bar{b}$ decay channel in pp collisions at 13 TeV with the ATLAS detector,” Eur. Phys. J. C **81**, no.2, 178 (2021) doi:10.1140/epjc/s10052-020-08677-2 [arXiv:2007.02873 [hep-ex]].

G. Aad *et al.* [ATLAS], “Jet energy scale and resolution measured in proton–proton collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector,” Eur. Phys. J. C **81**, no.8, 689 (2021) doi:10.1140/epjc/s10052-021-09402-3 [arXiv:2007.02645 [hep-ex]].

G. Aad *et al.* [ATLAS], “Differential cross-section measurements for the electroweak production of dijets in association with a Z boson in proton–proton collisions at ATLAS,” Eur. Phys. J. C **81**, no.2, 163 (2021) doi:10.1140/epjc/s10052-020-08734-w [arXiv:2006.15458 [hep-ex]].

G. Aad *et al.* [ATLAS], “Measurement of the $t\bar{t}$ production cross-section in the lepton+jets channel at $\sqrt{s} = 13$ TeV with the ATLAS experiment,” Phys. Lett. B **810**, 135797 (2020) doi:10.1016/j.physletb.2020.135797 [arXiv:2006.13076 [hep-ex]].

G. Aad *et al.* [ATLAS], “Search for new non-resonant phenomena in high-mass dilepton final states with the ATLAS detector,” JHEP **11**, 005 (2020) [erratum: JHEP **04**, 142 (2021)] doi:10.1007/JHEP11(2020)005 [arXiv:2006.12946 [hep-ex]].

G. Aad *et al.* [ATLAS], “Measurements of top-quark pair single- and double-differential cross-sections in the all-hadronic channel in pp collisions at $\sqrt{s} = 13$ TeV using the ATLAS detector,” JHEP **01**, 033 (2021) doi:10.1007/JHEP01(2021)033 [arXiv:2006.09274 [hep-ex]].

G. Aad *et al.* [ATLAS], “Search for top squarks in events with a Higgs or Z boson using 139 fb^{-1} of pp collision data at $\sqrt{s} = 13$ TeV with the ATLAS detector,” Eur. Phys. J. C **80**, no.11, 1080 (2020) doi:10.1140/epjc/s10052-020-08469-8 [arXiv:2006.05880 [hep-ex]].

G. Aad *et al.* [ATLAS], “Search for pairs of scalar leptoquarks decaying into quarks and electrons or muons in

$\sqrt{s} = 13$ TeV pp collisions with the ATLAS detector," JHEP **10**, 112 (2020) doi:10.1007/JHEP10(2020)112 [arXiv:2006.05872 [hep-ex]].

G. Aad *et al.* [ATLAS], "Search for Higgs boson decays into two new low-mass spin-0 particles in the $4b$ channel with the ATLAS detector using pp collisions at $\sqrt{s} = 13$ TeV," Phys. Rev. D **102**, no.11, 112006 (2020) doi:10.1103/PhysRevD.102.112006 [arXiv:2005.12236 [hep-ex]].

G. Aad *et al.* [ATLAS], "Performance of the missing transverse momentum triggers for the ATLAS detector during Run-2 data taking," JHEP **08**, 080 (2020) doi:10.1007/JHEP08(2020)080 [arXiv:2005.09554 [hep-ex]].

G. Aad *et al.* [ATLAS], "A search for the $Z\gamma$ decay mode of the Higgs boson in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector," Phys. Lett. B **809**, 135754 (2020) doi:10.1016/j.physletb.2020.135754 [arXiv:2005.05382 [hep-ex]].

G. Aad *et al.* [ATLAS], "Search for $t\bar{t}$ resonances in fully hadronic final states in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector," JHEP **10**, 061 (2020) doi:10.1007/JHEP10(2020)061 [arXiv:2005.05138 [hep-ex]].

G. Aad *et al.* [CMS and ATLAS], "Combination of the W boson polarization measurements in top quark decays using ATLAS and CMS data at $\sqrt{s} = 8$ TeV," JHEP **08**, no.08, 051 (2020) doi:10.1007/JHEP08(2020)051 [arXiv:2005.03799 [hep-ex]].

G. Aad *et al.* [ATLAS], "Dijet resonance search with weak supervision using $\sqrt{s} = 13$ TeV pp collisions in the ATLAS detector," Phys. Rev. Lett. **125**, no.13, 131801 (2020) doi:10.1103/PhysRevLett.125.131801 [arXiv:2005.02983 [hep-ex]].

G. Aad *et al.* [ATLAS], "Search for heavy diboson resonances in semileptonic final states in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector," Eur. Phys. J. C **80**, no.12, 1165 (2020) doi:10.1140/epjc/s10052-020-08554-y [arXiv:2004.14636 [hep-ex]].

G. Aad *et al.* [ATLAS], "Search for a scalar partner of the top quark in the all-hadronic $t\bar{t}$ plus missing transverse momentum final state at $\sqrt{s} = 13$ TeV with the ATLAS detector," Eur. Phys. J. C **80**, no.8,

737 (2020) doi:10.1140/epjc/s10052-020-8102-8 [arXiv:2004.14060 [hep-ex]].

G. Aad *et al.* [ATLAS], "Performance of the ATLAS muon triggers in Run 2," JINST **15**, no.09, P09015 (2020) doi:10.1088/1748-0221/15/09/p09015 [arXiv:2004.13447 [physics.ins-det]].

G. Aad *et al.* [ATLAS], "*CP* Properties of Higgs Boson Interactions with Top Quarks in the $t\bar{t}H$ and tH Processes Using $H \rightarrow \gamma\gamma$ with the ATLAS Detector," Phys. Rev. Lett. **125**, no.6, 061802 (2020) doi:10.1103/PhysRevLett.125.061802 [arXiv:2004.04545 [hep-ex]].

G. Aad *et al.* [ATLAS], "Measurements of the Higgs boson inclusive and differential fiducial cross sections in the 4ℓ decay channel at $\sqrt{s} = 13$ TeV," Eur. Phys. J. C **80**, no.10, 942 (2020) doi:10.1140/epjc/s10052-020-8223-0 [arXiv:2004.03969 [hep-ex]].

G. Aad *et al.* [ATLAS], "Higgs boson production cross-section measurements and their EFT interpretation in the 4ℓ decay channel at $\sqrt{s} = 13$ TeV with the ATLAS detector," Eur. Phys. J. C **80**, no.10, 957 (2020) [erratum: Eur. Phys. J. C **81**, no.1, 29 (2021); erratum: Eur. Phys. J. C **81**, no.5, 398 (2021)] doi:10.1140/epjc/s10052-020-8227-9 [arXiv:2004.03447 [hep-ex]].

G. Aad *et al.* [ATLAS], "Search for Higgs Boson Decays into a Z Boson and a Light Hadronically Decaying Resonance Using 13 TeV pp Collision Data from the ATLAS Detector," Phys. Rev. Lett. **125**, no.22, 221802 (2020) doi:10.1103/PhysRevLett.125.221802 [arXiv:2004.01678 [hep-ex]].

G. Aad *et al.* [ATLAS], "Measurements of the production cross-section for a Z boson in association with b -jets in proton-proton collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector," JHEP **07**, 044 (2020) doi:10.1007/JHEP07(2020)044 [arXiv:2003.11960 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Study of central exclusive $\pi^+\pi^-$ production in proton-proton collisions at $\sqrt{s} = 5.02$ and 13 TeV," Eur. Phys. J. C **80**, no.8, 718 (2020) doi:10.1140/epjc/s10052-020-8166-5 [arXiv:2003.02811 [hep-ex]].

A. M. Sirunyan *et al.* [CMS and TOTEM], "Measurement of single-diffractive dijet production in proton-proton collisions at $\sqrt{s} = 8$ TeV with the CMS and TOTEM experiments," Eur. Phys. J. C **80**, no.12, 1164 (2020) [erratum: Eur. Phys. J. C **81**, no.5, 383 (2021)] doi:10.1140/epjc/s10052-020-08562-y

[arXiv:2002.12146 [hep-ex]].

G. Aad *et al.* [ATLAS], “Search for heavy Higgs bosons decaying into two tau leptons with the ATLAS detector using pp collisions at $\sqrt{s} = 13$ TeV,” *Phys. Rev. Lett.* **125**, no.5, 051801 (2020) doi:10.1103/PhysRevLett.125.051801 [arXiv:2002.12223 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Measurements with silicon photomultipliers of dose-rate effects in the radiation damage of plastic scintillator tiles in the CMS hadron endcap calorimeter,” *JINST* **15**, no.06, P06009 (2020) doi:10.1088/1748-0221/15/06/P06009 [arXiv:2001.06553 [physics.ins-det]].

A. M. Sirunyan *et al.* [CMS], “Search for an excited lepton that decays via a contact interaction to a lepton and two jets in proton-proton collisions at $\sqrt{s} = 13$ TeV,” *JHEP* **05**, 052 (2020) doi:10.1007/JHEP05(2020)052 [arXiv:2001.04521 [hep-ex]]. G. Aad *et al.* [ATLAS], “Search for new phenomena with top quark pairs in final states with one lepton, jets, and missing transverse momentum in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector,” *JHEP* **04**, 174 (2021) doi:10.1007/JHEP04(2021)174 [arXiv:2012.03799 [hep-ex]].

G. Aad *et al.* [ATLAS], “Muon reconstruction and identification efficiency in ATLAS using the full Run 2 pp collision data set at $\sqrt{s} = 13$ TeV,” *Eur. Phys. J. C* **81**, no.7, 578 (2021) doi:10.1140/epjc/s10052-021-09233-2 [arXiv:2012.00578 [hep-ex]].

G. Aad *et al.* [ATLAS], “Exclusive dimuon production in ultraperipheral Pb+Pb collisions at $\sqrt{s_{NN}} = 5.02$ TeV with ATLAS,” *Phys. Rev. C* **104**, 024906 (2021) doi:10.1103/PhysRevC.104.024906 [arXiv:2011.12211 [nucl-ex]].

G. Aad *et al.* [ATLAS], “Search for trilepton resonances from chargino and neutralino pair production in $\sqrt{s} = 13$ TeV pp collisions with the ATLAS detector,” *Phys. Rev. D* **103**, no.11, 112003 (2021) doi:10.1103/PhysRevD.103.112003 [arXiv:2011.10543 [hep-ex]].

G. Aad *et al.* [ATLAS], “Search for dark matter produced in association with a single top quark in $\sqrt{s} = 13$ TeV pp collisions with the ATLAS detector,” *Eur. Phys. J. C* **81**, no.10, 860 (2021) doi:10.1140/epjc/s10052-021-09566-y [arXiv:2011.09308 [hep-ex]].

G. Aad *et al.* [ATLAS], “Search for Displaced Leptons in $\sqrt{s} = 13$ TeV pp Collisions with the ATLAS Detector,” *Phys. Rev. Lett.* **127**, no.5, 051802 (2021) doi:10.1103/PhysRevLett.127.051802 [arXiv:2011.07812 [hep-ex]].

G. Aad *et al.* [ATLAS], “Measurements of Higgs bosons decaying to bottom quarks from vector boson fusion production with the ATLAS experiment at $\sqrt{s} = 13$ TeV,” *Eur. Phys. J. C* **81**, no.6, 537 (2021) doi:10.1140/epjc/s10052-021-09192-8 [arXiv:2011.08280 [hep-ex]].

G. Aad *et al.* [ATLAS], “Search for a heavy Higgs boson decaying into a Z boson and another heavy Higgs boson in the $\ell\ell b\bar{b}$ and $\ell\ell W W$ final states in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector,” *Eur. Phys. J. C* **81**, no.5, 396 (2021) doi:10.1140/epjc/s10052-021-09117-5 [arXiv:2011.05639 [hep-ex]].

G. Aad *et al.* [ATLAS], “Search for dark matter in association with an energetic photon in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector,” JHEP **02**, 226 (2021) doi:10.1007/JHEP02(2021)226 [arXiv:2011.05259 [hep-ex]].

G. Aad *et al.* [ATLAS], “Search for squarks and gluinos in final states with jets and missing transverse momentum using 139 fb^{-1} of $\sqrt{s} = 13$ TeV pp collision data with the ATLAS detector,” JHEP **02**, 143 (2021) doi:10.1007/JHEP02(2021)143 [arXiv:2010.14293 [hep-ex]].

G. Aad *et al.* [ATLAS], “Search for Higgs boson production in association with a high-energy photon via vector-boson fusion with decay into bottom quark pairs at $\sqrt{s} = 13$ TeV with the ATLAS detector,” JHEP **03**, 268 (2021) doi:10.1007/JHEP03(2021)268 [arXiv:2010.13651 [hep-ex]].

G. Aad *et al.* [ATLAS], “Search for Dark Matter Produced in Association with a Dark Higgs Boson Decaying into $W^\pm W^\mp$ or ZZ in Fully Hadronic Final States from $\sqrt{s} = 13$ TeV pp Collisions Recorded with the ATLAS Detector,” Phys. Rev. Lett. **126**, no.12, 121802 (2021) doi:10.1103/PhysRevLett.126.121802 [arXiv:2010.06548 [hep-ex]].

G. Aad *et al.* [ATLAS], “Observation of photon-induced W^+W^- production in pp collisions at $\sqrt{s} = 13$ TeV using the ATLAS detector,” Phys. Lett. B **816**, 136190 (2021) doi:10.1016/j.physletb.2021.136190 [arXiv:2010.04019 [hep-ex]].

G. Aad *et al.* [ATLAS], “Search for charged-lepton-flavour violation in Z -boson decays with the ATLAS detector,” Nature Phys. **17**, no.7, 819-825 (2021) doi:10.1038/s41567-021-01225-z [arXiv:2010.02566 [hep-ex]].

G. Aad *et al.* [ATLAS], “Search for pair production of scalar leptoquarks decaying into first- or second-generation leptons and top quarks in proton–proton collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector,” Eur. Phys. J. C **81**, no.4, 313 (2021) doi:10.1140/epjc/s10052-021-09009-8 [arXiv:2010.02098 [hep-ex]].

G. Aad *et al.* [ATLAS], “Search for phenomena beyond the Standard Model in events with large b -jet multiplicity using the ATLAS detector at the LHC,” Eur. Phys. J. C **81**, no.1, 11 (2021) [erratum: Eur. Phys. J. C **81**, no.3, 249 (2021)] doi:10.1140/epjc/s10052-020-08730-0 [arXiv:2010.01015 [hep-ex]].

G. Aad *et al.* [ATLAS], “Observation and Measurement of Forward Proton Scattering in Association with Lepton Pairs Produced via the Photon Fusion Mechanism at ATLAS,” Phys. Rev. Lett. **125**, no.26, 261801 (2020) doi:10.1103/PhysRevLett.125.261801 [arXiv:2009.14537 [hep-ex]].

G. Aad *et al.* [ATLAS], “Search for heavy resonances decaying into a pair of Z bosons in the $\ell^+ \ell^- \ell'^+ \ell'^-$ and $\ell^+ \ell^- \nu \bar{\nu}$ final states using 139 fb^{-1} of proton–proton collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector,” Eur. Phys. J. C **81**, no.4, 332 (2021) doi:10.1140/epjc/s10052-021-09013-y [arXiv:2009.14791 [hep-ex]].

G. Aad *et al.* [ATLAS], “Optimisation of large-radius jet reconstruction for the ATLAS detector in 13 TeV proton–proton collisions,” Eur. Phys. J. C **81**, no.4, 334 (2021) doi:10.1140/epjc/s10052-021-09054-3 [arXiv:2009.04986 [hep-ex]].

G. Aad *et al.* [ATLAS], “Medium-Induced Modification of Z -Tagged Charged Particle Yields in $Pb + Pb$ Collisions at 5.02 TeV with the ATLAS Detector,” Phys. Rev. Lett. **126**, no.7, 072301 (2021)

doi:10.1103/PhysRevLett.126.072301 [arXiv:2008.09811 [nucl-ex]].

G. Aad *et al.* [ATLAS], “Search for type-III seesaw heavy leptons in dilepton final states in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector,” *Eur. Phys. J. C* **81**, no.3, 218 (2021) doi:10.1140/epjc/s10052-021-08929-9 [arXiv:2008.07949 [hep-ex]].

G. Aad *et al.* [ATLAS], “Search for heavy resonances decaying into a photon and a hadronically decaying Higgs boson in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector,” *Phys. Rev. Lett.* **125**, 251802 (2020) doi:10.1103/PhysRevLett.125.251802 [arXiv:2008.05928 [hep-ex]].

G. Aad *et al.* [ATLAS], “Search for new phenomena in final states with large jet multiplicities and missing transverse momentum using $\sqrt{s} = 13$ TeV proton-proton collisions recorded by ATLAS in Run 2 of the LHC,” *JHEP* **10**, 062 (2020) doi:10.1007/JHEP10(2020)062 [arXiv:2008.06032 [hep-ex]].

G. Aad *et al.* [ATLAS], “Measurement of light-by-light scattering and search for axion-like particles with 2.2 nb^{-1} of Pb+Pb data with the ATLAS detector,” *JHEP* **11**, 050 (2021) doi:10.1007/JHEP11(2021)050 [arXiv:2008.05355 [hep-ex]].

G. Aad *et al.* [ATLAS], “Measurement of the associated production of a Higgs boson decaying into b -quarks with a vector boson at high transverse momentum in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector,” *Phys. Lett. B* **816**, 136204 (2021) doi:10.1016/j.physletb.2021.136204 [arXiv:2008.02508 [hep-ex]].

G. Aad *et al.* [ATLAS], “Evidence for $t\bar{t}\bar{t}$ production in the multilepton final state in proton–proton collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector,” *Eur. Phys. J. C* **80**, no.11, 1085 (2020) doi:10.1140/epjc/s10052-020-08509-3 [arXiv:2007.14858 [hep-ex]].

G. Aad *et al.* [ATLAS], “Reconstruction and identification of boosted di- τ systems in a search for Higgs boson pairs using 13 TeV proton-proton collision data in ATLAS,” *JHEP* **11**, 163 (2020) doi:10.1007/JHEP11(2020)163 [arXiv:2007.14811 [hep-ex]].

G. Aad *et al.* [ATLAS], “Test of the universality of τ and μ lepton couplings in W -boson decays with the ATLAS detector,” *Nature Phys.* **17**, no.7, 813-818 (2021) doi:10.1038/s41567-021-01236-w [arXiv:2007.14040 [hep-ex]].

G. Aad *et al.* [ATLAS], “Operation of the ATLAS trigger system in Run 2,” *JINST* **15**, no.10, P10004 (2020) doi:10.1088/1748-0221/15/10/P10004 [arXiv:2007.12539 [physics.ins-det]].

G. Aad *et al.* [ATLAS], “Measurement of hadronic event shapes in high- p_T multijet final states at $\sqrt{s} = 13$ TeV with the ATLAS detector,” *JHEP* **01**, 188 (2021) doi:10.1007/JHEP01(2021)188 [arXiv:2007.12600 [hep-ex]].

G. Aad *et al.* [ATLAS], “Search for resonances decaying into a weak vector boson and a Higgs boson in the fully hadronic final state produced in proton–proton collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector,” *Phys. Rev. D* **102**, no.11, 112008 (2020) doi:10.1103/PhysRevD.102.112008 [arXiv:2007.05293 [hep-ex]].

G. Aad *et al.* [ATLAS], “A search for the dimuon decay of the Standard Model Higgs boson with the ATLAS detector,” *Phys. Lett. B* **812**, 135980 (2021) doi:10.1016/j.physletb.2020.135980 [arXiv:2007.07830

[hep-ex]].

G. Aad *et al.* [ATLAS], "Alignment of the ATLAS Inner Detector in Run-2," *Eur. Phys. J. C* **80**, no.12, 1194 (2020) doi:10.1140/epjc/s10052-020-08700-6 [arXiv:2007.07624 [hep-ex]].

G. Aad *et al.* [ATLAS], "Measurements of inclusive and differential cross-sections of combined $t\bar{t}\gamma$ and $tW\gamma$ production in the $e\mu$ channel at 13 TeV with the ATLAS detector," *JHEP* **09**, 049 (2020) doi:10.1007/JHEP09(2020)049 [arXiv:2007.06946 [hep-ex]].

G. Aad *et al.* [ATLAS], "Measurements of WH and ZH production in the $H \rightarrow b\bar{b}$ decay channel in pp collisions at 13 TeV with the ATLAS detector," *Eur. Phys. J. C* **81**, no.2, 178 (2021) doi:10.1140/epjc/s10052-020-08677-2 [arXiv:2007.02873 [hep-ex]].

G. Aad *et al.* [ATLAS], "Jet energy scale and resolution measured in proton–proton collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector," *Eur. Phys. J. C* **81**, no.8, 689 (2021) doi:10.1140/epjc/s10052-021-09402-3 [arXiv:2007.02645 [hep-ex]].

G. Aad *et al.* [ATLAS], "Differential cross-section measurements for the electroweak production of dijets in association with a Z boson in proton–proton collisions at ATLAS," *Eur. Phys. J. C* **81**, no.2, 163 (2021) doi:10.1140/epjc/s10052-020-08734-w [arXiv:2006.15458 [hep-ex]].

G. Aad *et al.* [ATLAS], "Measurement of the $t\bar{t}$ production cross-section in the lepton+jets channel at $\sqrt{s} = 13$ TeV with the ATLAS experiment," *Phys. Lett. B* **810**, 135797 (2020) doi:10.1016/j.physletb.2020.135797 [arXiv:2006.13076 [hep-ex]].

G. Aad *et al.* [ATLAS], "Search for new non-resonant phenomena in high-mass dilepton final states with the ATLAS detector," *JHEP* **11**, 005 (2020) [erratum: *JHEP* **04**, 142 (2021)] doi:10.1007/JHEP11(2020)005 [arXiv:2006.12946 [hep-ex]].

G. Aad *et al.* [ATLAS], "Measurements of top-quark pair single- and double-differential cross-sections in the all-hadronic channel in pp collisions at $\sqrt{s} = 13$ TeV using the ATLAS detector," *JHEP* **01**, 033 (2021) doi:10.1007/JHEP01(2021)033 [arXiv:2006.09274 [hep-ex]].

G. Aad *et al.* [ATLAS], "Search for top squarks in events with a Higgs or Z boson using 139 fb^{-1} of pp collision data at $\sqrt{s} = 13$ TeV with the ATLAS detector," *Eur. Phys. J. C* **80**, no.11, 1080 (2020) doi:10.1140/epjc/s10052-020-08469-8 [arXiv:2006.05880 [hep-ex]].

G. Aad *et al.* [ATLAS], "Search for pairs of scalar leptoquarks decaying into quarks and electrons or muons in $\sqrt{s} = 13$ TeV pp collisions with the ATLAS detector," *JHEP* **10**, 112 (2020) doi:10.1007/JHEP10(2020)112 [arXiv:2006.05872 [hep-ex]].

G. Aad *et al.* [ATLAS], "Search for Higgs boson decays into two new low-mass spin-0 particles in the $4b$ channel with the ATLAS detector using pp collisions at $\sqrt{s} = 13$ TeV," *Phys. Rev. D* **102**, no.11, 112006 (2020) doi:10.1103/PhysRevD.102.112006 [arXiv:2005.12236 [hep-ex]].

G. Aad *et al.* [ATLAS], "Performance of the missing transverse momentum triggers for the ATLAS detector during Run-2 data taking," *JHEP* **08**, 080 (2020) doi:10.1007/JHEP08(2020)080 [arXiv:2005.09554 [hep-ex]].

- G. Aad *et al.* [ATLAS], “A search for the $Z\gamma$ decay mode of the Higgs boson in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector,” *Phys. Lett. B* **809**, 135754 (2020) doi:10.1016/j.physletb.2020.135754 [arXiv:2005.05382 [hep-ex]].
- G. Aad *et al.* [ATLAS], “Search for $t\bar{t}$ resonances in fully hadronic final states in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector,” *JHEP* **10**, 061 (2020) doi:10.1007/JHEP10(2020)061 [arXiv:2005.05138 [hep-ex]].
- G. Aad *et al.* [CMS and ATLAS], “Combination of the W boson polarization measurements in top quark decays using ATLAS and CMS data at $\sqrt{s} = 8$ TeV,” *JHEP* **08**, no.08, 051 (2020) doi:10.1007/JHEP08(2020)051 [arXiv:2005.03799 [hep-ex]].
- G. Aad *et al.* [ATLAS], “Dijet resonance search with weak supervision using $\sqrt{s} = 13$ TeV pp collisions in the ATLAS detector,” *Phys. Rev. Lett.* **125**, no.13, 131801 (2020) doi:10.1103/PhysRevLett.125.131801 [arXiv:2005.02983 [hep-ex]].
- G. Aad *et al.* [ATLAS], “Search for heavy diboson resonances in semileptonic final states in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector,” *Eur. Phys. J. C* **80**, no.12, 1165 (2020) doi:10.1140/epjc/s10052-020-08554-y [arXiv:2004.14636 [hep-ex]].
- G. Aad *et al.* [ATLAS], “Search for a scalar partner of the top quark in the all-hadronic $t\bar{t}$ plus missing transverse momentum final state at $\sqrt{s} = 13$ TeV with the ATLAS detector,” *Eur. Phys. J. C* **80**, no.8, 737 (2020) doi:10.1140/epjc/s10052-020-8102-8 [arXiv:2004.14060 [hep-ex]].
- G. Aad *et al.* [ATLAS], “Performance of the ATLAS muon triggers in Run 2,” *JINST* **15**, no.09, P09015 (2020) doi:10.1088/1748-0221/15/09/p09015 [arXiv:2004.13447 [physics.ins-det]].
- G. Aad *et al.* [ATLAS], “ CP Properties of Higgs Boson Interactions with Top Quarks in the $t\bar{t}H$ and tH Processes Using $H \rightarrow \gamma\gamma$ with the ATLAS Detector,” *Phys. Rev. Lett.* **125**, no.6, 061802 (2020) doi:10.1103/PhysRevLett.125.061802 [arXiv:2004.04545 [hep-ex]].
- G. Aad *et al.* [ATLAS], “Measurements of the Higgs boson inclusive and differential fiducial cross sections in the 4ℓ decay channel at $\sqrt{s} = 13$ TeV,” *Eur. Phys. J. C* **80**, no.10, 942 (2020) doi:10.1140/epjc/s10052-020-8223-0 [arXiv:2004.03969 [hep-ex]].
- G. Aad *et al.* [ATLAS], “Higgs boson production cross-section measurements and their EFT interpretation in the 4ℓ decay channel at $\sqrt{s} = 13$ TeV with the ATLAS detector,” *Eur. Phys. J. C* **80**, no.10, 957 (2020) [erratum: *Eur. Phys. J. C* **81**, no.1, 29 (2021); erratum: *Eur. Phys. J. C* **81**, no.5, 398 (2021)] doi:10.1140/epjc/s10052-020-8227-9 [arXiv:2004.03447 [hep-ex]].
- G. Aad *et al.* [ATLAS], “Search for Higgs Boson Decays into a Z Boson and a Light Hadronically Decaying Resonance Using 13 TeV pp Collision Data from the ATLAS Detector,” *Phys. Rev. Lett.* **125**, no.22, 221802 (2020) doi:10.1103/PhysRevLett.125.221802 [arXiv:2004.01678 [hep-ex]].
- G. Aad *et al.* [ATLAS], “Measurements of the production cross-section for a Z boson in association with b -jets in proton-proton collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector,” *JHEP* **07**, 044 (2020) doi:10.1007/JHEP07(2020)044 [arXiv:2003.11960 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Study of central exclusive $\pi^+\pi^-$ production in proton-proton collisions

at $\sqrt{s} = 5.02$ and 13 TeV," *Eur. Phys. J. C* **80**, no.8, 718 (2020) doi:10.1140/epjc/s10052-020-8166-5 [arXiv:2003.02811 [hep-ex]].

A. M. Sirunyan *et al.* [CMS and TOTEM], "Measurement of single-diffractive dijet production in proton-proton collisions at $\sqrt{s} = 8$ TeV with the CMS and TOTEM experiments," *Eur. Phys. J. C* **80**, no.12, 1164 (2020) [erratum: *Eur. Phys. J. C* **81**, no.5, 383 (2021)] doi:10.1140/epjc/s10052-020-08562-y [arXiv:2002.12146 [hep-ex]].

G. Aad *et al.* [ATLAS], "Search for heavy Higgs bosons decaying into two tau leptons with the ATLAS detector using pp collisions at $\sqrt{s} = 13$ TeV," *Phys. Rev. Lett.* **125**, no.5, 051801 (2020) doi:10.1103/PhysRevLett.125.051801 [arXiv:2002.12223 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Measurements with silicon photomultipliers of dose-rate effects in the radiation damage of plastic scintillator tiles in the CMS hadron endcap calorimeter," *JINST* **15**, no.06, P06009 (2020) doi:10.1088/1748-0221/15/06/P06009 [arXiv:2001.06553 [physics.ins-det]].

A. M. Sirunyan *et al.* [CMS], "Search for an excited lepton that decays via a contact interaction to a lepton and two jets in proton-proton collisions at $\sqrt{s} = 13$ TeV," *JHEP* **05**, 052 (2020) doi:10.1007/JHEP05(2020)052 [arXiv:2001.04521 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Search for a heavy Higgs boson decaying to a pair of W bosons in proton-proton collisions at $\sqrt{s} = 13$ TeV," *JHEP* **03**, 034 (2020) doi:10.1007/JHEP03(2020)034 [arXiv:1912.01594 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Search for lepton flavour violating decays of a neutral heavy Higgs boson to $\mu\tau$ and $e\tau$ in proton-proton collisions at $\sqrt{s} = 13$ TeV," *JHEP* **03**, 103 (2020) doi:10.1007/JHEP03(2020)103 [arXiv:1911.10267 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Search for new neutral Higgs bosons through the $H \rightarrow ZA \rightarrow \ell^+ \ell^- b\bar{b}$ process in pp collisions at $\sqrt{s} = 13$ TeV," *JHEP* **03**, 055 (2020) doi:10.1007/JHEP03(2020)055 [arXiv:1911.03781 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Studies of charm quark diffusion inside jets using PbPb and pp collisions at $\sqrt{s_{NN}} = 5.02$ TeV," *Phys. Rev. Lett.* **125**, no.10, 102001 (2020) doi:10.1103/PhysRevLett.125.102001 [arXiv:1911.01461 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Search for a heavy pseudoscalar Higgs boson decaying into a 125 GeV Higgs boson and a Z boson in final states with two tau and two light leptons at $\sqrt{s} = 13$ TeV," *JHEP* **03**, 065 (2020) doi:10.1007/JHEP03(2020)065 [arXiv:1910.11634 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Bose-Einstein correlations of charged hadrons in proton-proton collisions at $\sqrt{s} = 13$ TeV," *JHEP* **03**, 014 (2020) doi:10.1007/JHEP03(2020)014 [arXiv:1910.08815 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Mixed higher-order anisotropic flow and nonlinear response coefficients of charged particles in PbPb collisions at $\sqrt{s_{NN}} = 2.76$ and 5.02 TeV," *Eur. Phys. J. C* **80**, no.6, 534 (2020) doi:10.1140/epjc/s10052-020-7834-9 [arXiv:1910.08789 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Strange hadron production in pp and pPb collisions at $\sqrt{s_{NN}} = 5.02$ TeV," *Phys. Rev. C* **101**, no.6, 064906 (2020) doi:10.1103/PhysRevC.101.064906 [arXiv:1910.04812 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Measurement of the top quark polarization and $t\bar{t}$ spin correlations using dilepton final states in proton-proton collisions at $\sqrt{s} = 13$ TeV," *Phys. Rev. D* **100**, no.7, 072002 (2019) doi:10.1103/PhysRevD.100.072002 [arXiv:1907.03729 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Study of J/ψ meson production inside jets in pp collisions at $\sqrt{s} = 8$ TeV," *Phys. Lett. B* **804**, 135409 (2020) doi:10.1016/j.physletb.2020.135409 [arXiv:1910.01686 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Calibration of the CMS hadron calorimeters using proton-proton collision data at $\sqrt{s} = 13$ TeV," *JINST* **15**, no.05, P05002 (2020) doi:10.1088/1748-0221/15/05/P05002 [arXiv:1910.00079 [physics.ins-det]].

A. M. Sirunyan *et al.* [CMS], "Evidence for WW production from double-parton interactions in proton-proton collisions at $\sqrt{s} = 13$ TeV," *Eur. Phys. J. C* **80**, no.1, 41 (2020) doi:10.1140/epjc/s10052-019-7541-6 [arXiv:1909.06265 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Measurement of the $t\bar{t}b\bar{b}$ production cross section in the all-jet final state in pp collisions at $\sqrt{s} = 13$ TeV," *Phys. Lett. B* **803**, 135285 (2020) doi:10.1016/j.physletb.2020.135285 [arXiv:1909.05306 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Search for electroweak production of a vector-like T quark using fully hadronic final states," *JHEP* **01**, 036 (2020) doi:10.1007/JHEP01(2020)036 [arXiv:1909.04721 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Search for low mass vector resonances decaying into quark-antiquark pairs in proton-proton collisions at $\sqrt{s} = 13$ TeV," *Phys. Rev. D* **100**, no.11, 112007 (2019) doi:10.1103/PhysRevD.100.112007 [arXiv:1909.04114 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Search for a charged Higgs boson decaying into top and bottom quarks in events with electrons or muons in proton-proton collisions at $\sqrt{s} = 13$ TeV," *JHEP* **01**, 096 (2020) doi:10.1007/JHEP01(2020)096 [arXiv:1908.09206 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Search for supersymmetry using Higgs boson to diphoton decays at $\sqrt{s} = 13$ TeV," *JHEP* **11**, 109 (2019) doi:10.1007/JHEP11(2019)109 [arXiv:1908.08500 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Search for dark matter particles produced in association with a Higgs boson in proton-proton collisions at $\sqrt{s} = 13$ TeV," *JHEP* **03**, 025 (2020) doi:10.1007/JHEP03(2020)025 [arXiv:1908.01713 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Measurement of the average very forward energy as a function of the track multiplicity at central pseudorapidities in proton-proton collisions at $\sqrt{s} = 13$ TeV," *Eur. Phys. J. C* **79**, no.11, 893 (2019) doi:10.1140/epjc/s10052-019-7402-3 [arXiv:1908.01750 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Search for heavy Higgs bosons decaying to a top quark pair in proton-proton collisions at $\sqrt{s} = 13$ TeV," *JHEP* **04**, 171 (2020) doi:10.1007/JHEP04(2020)171 [arXiv:1908.01115 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Search for direct pair production of supersymmetric partners to the τ lepton in proton-proton collisions at $\sqrt{s} = 13$ TeV," *Eur. Phys. J. C* **80**, no.3, 189 (2020) doi:10.1140/epjc/s10052-

020-7739-7 [arXiv:1907.13179 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Measurement of top quark pair production in association with a Z boson in proton-proton collisions at $\sqrt{s} = 13$ TeV," JHEP **03**, 056 (2020) doi:10.1007/JHEP03(2020)056 [arXiv:1907.11270 [hep-ex]].

M. Mårtensson, M. Isacson, H. Hahne, R. Gonzalez Suarez and R. Brenner, "To catch a long-lived particle: hit selection towards a regional hardware track trigger implementation," JINST **14**, no.11, P11009 (2019) doi:10.1088/1748-0221/14/11/P11009 [arXiv:1907.09846 [physics.ins-det]].

A. M. Sirunyan *et al.* [CMS], "Measurements of triple-differential cross sections for inclusive isolated-photon+jet events in pp collisions at $\sqrt{s} = 8$ TeV," Eur. Phys. J. C **79**, no.11, 969 (2019) doi:10.1140/epjc/s10052-019-7451-7 [arXiv:1907.08155 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Search for anomalous triple gauge couplings in WW and WZ production in lepton + jet events in proton-proton collisions at $\sqrt{s} = 13$ TeV," JHEP **12**, 062 (2019) doi:10.1007/JHEP12(2019)062 [arXiv:1907.08354 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Measurement of differential cross sections and charge ratios for t-channel single top quark production in proton-proton collisions at $\sqrt{s} = 13$ TeV," Eur. Phys. J. C **80**, no.5, 370 (2020) doi:10.1140/epjc/s10052-020-7858-1 [arXiv:1907.08330 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Search for light pseudoscalar boson pairs produced from decays of the 125 GeV Higgs boson in final states with two muons and two nearby tracks in pp collisions at $\sqrt{s} = 13$ TeV," Phys. Lett. B **800**, 135087 (2020) doi:10.1016/j.physletb.2019.135087 [arXiv:1907.07235 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Search for Physics beyond the Standard Model in Events with Overlapping Photons and Jets," Phys. Rev. Lett. **123**, no.24, 241801 (2019) doi:10.1103/PhysRevLett.123.241801 [arXiv:1907.06275 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Study of the $B^+ \rightarrow J/\psi \bar{\Lambda} p$ decay in proton-proton collisions at $\sqrt{s} = 8$ TeV," JHEP **12**, 100 (2019) doi:10.1007/JHEP12(2019)100 [arXiv:1907.05461 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Search for MSSM Higgs bosons decaying to $\mu + \mu -$ in proton-proton collisions at $\sqrt{s} = 13$ TeV," Phys. Lett. B **798**, 134992 (2019) doi:10.1016/j.physletb.2019.134992 [arXiv:1907.03152 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Measurement of the top quark Yukawa coupling from $t\bar{t}$ kinematic distributions in the lepton+jets final state in proton-proton collisions at $\sqrt{s} = 13$ TeV," Phys. Rev. D **100**, no.7, 072007 (2019) doi:10.1103/PhysRevD.100.072007 [arXiv:1907.01590 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Combined search for supersymmetry with photons in proton-proton collisions at $\sqrt{s} = 13$ TeV," Phys. Lett. B **801**, 135183 (2020) doi:10.1016/j.physletb.2019.135183 [arXiv:1907.00857 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Search for pair production of vectorlike quarks in the fully hadronic final state," Phys. Rev. D **100**, no.7, 072001 (2019) doi:10.1103/PhysRevD.100.072001 [arXiv:1906.11903 [hep-ex]].

- A. M. Sirunyan *et al.* [CMS], “Search for long-lived particles using nonprompt jets and missing transverse momentum with proton-proton collisions at $\sqrt{s} = 13$ TeV,” *Phys. Lett. B* **797**, 134876 (2019) doi:10.1016/j.physletb.2019.134876 [arXiv:1906.06441 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “A multi-dimensional search for new heavy resonances decaying to boosted WW, WZ, or ZZ boson pairs in the dijet final state at 13 TeV,” *Eur. Phys. J. C* **80**, no.3, 237 (2020) doi:10.1140/epjc/s10052-020-7773-5 [arXiv:1906.05977 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Production of Λ_c^+ baryons in proton-proton and lead-lead collisions at $\sqrt{s_{NN}} = 5.02$ TeV,” *Phys. Lett. B* **803**, 135328 (2020) doi:10.1016/j.physletb.2020.135328 [arXiv:1906.03322 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Search for the production of four top quarks in the single-lepton and opposite-sign dilepton final states in proton-proton collisions at $\sqrt{s} = 13$ TeV,” *JHEP* **11**, 082 (2019) doi:10.1007/JHEP11(2019)082 [arXiv:1906.02805 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Combination of CMS searches for heavy resonances decaying to pairs of bosons or leptons,” *Phys. Lett. B* **798**, 134952 (2019) doi:10.1016/j.physletb.2019.134952 [arXiv:1906.00057 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Search for supersymmetry with a compressed mass spectrum in the vector boson fusion topology with 1-lepton and 0-lepton final states in proton-proton collisions at $\sqrt{s} = 13$ TeV,” *JHEP* **08**, 150 (2019) doi:10.1007/JHEP08(2019)150 [arXiv:1905.13059 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Search for vector-like leptons in multilepton final states in proton-proton collisions at $\sqrt{s} = 13$ TeV,” *Phys. Rev. D* **100**, no.5, 052003 (2019) doi:10.1103/PhysRevD.100.052003 [arXiv:1905.10853 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Search for Higgs and Z boson decays to J/ψ or Y pairs in the four-muon final state in proton-proton collisions at $s=13$ TeV,” *Phys. Lett. B* **797**, 134811 (2019) doi:10.1016/j.physletb.2019.134811 [arXiv:1905.10408 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Search for Low-Mass Quark-Antiquark Resonances Produced in Association with a Photon at $\sqrt{s}=13$ TeV,” *Phys. Rev. Lett.* **123**, no.23, 231803 (2019) doi:10.1103/PhysRevLett.123.231803 [arXiv:1905.10331 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Correlations of azimuthal anisotropy Fourier harmonics with subevent cumulants in pPb collisions at $\sqrt{s_{NN}}=8.16$ TeV,” *Phys. Rev. C* **103**, no.1, 014902 (2021) doi:10.1103/PhysRevC.103.014902 [arXiv:1905.09935 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Search for anomalous electroweak production of vector boson pairs in association with two jets in proton-proton collisions at 13 TeV,” *Phys. Lett. B* **798**, 134985 (2019) doi:10.1016/j.physletb.2019.134985 [arXiv:1905.07445 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Search for a light charged Higgs boson decaying to a W boson and a CP-odd Higgs boson in final states with $e\mu\mu$ or $\mu\mu\mu$ in proton-proton collisions at $\sqrt{s} = 13$ TeV,” *Phys. Rev. Lett.* **123**, no.13, 131802 (2019) doi:10.1103/PhysRevLett.123.131802 [arXiv:1905.07453 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Search for the production of $W^\pm W^\pm W^\mp$ events at $\sqrt{s} = 13$ TeV,”

Phys. Rev. D **100**, no.1, 012004 (2019) doi:10.1103/PhysRevD.100.012004 [arXiv:1905.04246 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Observation of nuclear modifications in W^\pm boson production in pPb collisions at $\sqrt{s_{NN}} = 8.16$ TeV,” Phys. Lett. B **800**, 135048 (2020) doi:10.1016/j.physletb.2019.135048 [arXiv:1905.01486 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Multiparticle correlation studies in pPb collisions at $\sqrt{s_{NN}} = 8.16$ TeV,” Phys. Rev. C **101**, no.1, 014912 (2020) doi:10.1103/PhysRevC.101.014912 [arXiv:1904.11519 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Measurement of $t\bar{t}$ normalised multi-differential cross sections in pp collisions at $\sqrt{s} = 13$ TeV, and simultaneous determination of the strong coupling strength, top quark pole mass, and parton distribution functions,” Eur. Phys. J. C **80**, no.7, 658 (2020) doi:10.1140/epjc/s10052-020-7917-7 [arXiv:1904.05237 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Search for resonances decaying to a pair of Higgs bosons in the $b\bar{b}q\bar{q}'\ell\nu$ final state in proton-proton collisions at $\sqrt{s} = 13$ TeV,” JHEP **10**, 125 (2019) doi:10.1007/JHEP10(2019)125 [arXiv:1904.04193 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Extraction and validation of a new set of CMS PYTHIA8 tunes from underlying-event measurements,” Eur. Phys. J. C **80**, no.1, 4 (2020) doi:10.1140/epjc/s10052-019-7499-4 [arXiv:1903.12179 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Search for new physics in top quark production in dilepton final states in proton-proton collisions at $\sqrt{s} = 13$ TeV,” Eur. Phys. J. C **79**, no.11, 886 (2019) doi:10.1140/epjc/s10052-019-7387-y [arXiv:1903.11144 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Search for a low-mass $\tau^+\tau^-$ resonance in association with a bottom quark in proton-proton collisions at $\sqrt{s} = 13$ TeV,” JHEP **05**, 210 (2019) doi:10.1007/JHEP05(2019)210 [arXiv:1903.10228 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Search for supersymmetry in final states with photons and missing transverse momentum in proton-proton collisions at 13 TeV,” JHEP **06**, 143 (2019) doi:10.1007/JHEP06(2019)143 [arXiv:1903.07070 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Constraints on anomalous HVV couplings from the production of Higgs bosons decaying to τ lepton pairs,” Phys. Rev. D **100**, no.11, 112002 (2019) doi:10.1103/PhysRevD.100.112002 [arXiv:1903.06973 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Performance of missing transverse momentum reconstruction in proton-proton collisions at $\sqrt{s} = 13$ TeV using the CMS detector,” JINST **14**, no.07, P07004 (2019) doi:10.1088/1748-0221/14/07/P07004 [arXiv:1903.06078 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Search for charged Higgs bosons in the $H^\pm \rightarrow \tau^\pm\nu_\tau$ decay channel in proton-proton collisions at $\sqrt{s} = 13$ TeV,” JHEP **07**, 142 (2019) doi:10.1007/JHEP07(2019)142 [arXiv:1903.04560 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Measurement of electroweak production of a W boson in association with two jets in proton-proton collisions at $\sqrt{s} = 13$ TeV,” Eur. Phys. J. C **80**, no.1, 43 (2020)

doi:10.1140/epjc/s10052-019-7585-7 [arXiv:1903.04040 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “An embedding technique to determine $\tau\tau$ backgrounds in proton-proton collision data,” JINST **14**, no.06, P06032 (2019) doi:10.1088/1748-0221/14/06/P06032 [arXiv:1903.01216 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Search for a heavy pseudoscalar boson decaying to a Z and a Higgs boson at $\sqrt{s} = 13$ TeV,” Eur. Phys. J. C **79**, no.7, 564 (2019) doi:10.1140/epjc/s10052-019-7058-z [arXiv:1903.00941 [hep-ex]].

M. Aaboud *et al.* [ATLAS and CMS], “Combinations of single-top-quark production cross-section measurements and $-f_{LV}V_{tb}$ determinations at $\sqrt{s} = 7$ and 8 TeV with the ATLAS and CMS experiments,” JHEP **05**, 088 (2019) doi:10.1007/JHEP05(2019)088 [arXiv:1902.07158 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Azimuthal separation in nearly back-to-back jet topologies in inclusive 2- and 3-jet events in pp collisions at $\sqrt{s} = 13$ TeV,” Eur. Phys. J. C **79**, no.9, 773 (2019) doi:10.1140/epjc/s10052-019-7276-4 [arXiv:1902.04374 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Pseudorapidity distributions of charged hadrons in xenon-xenon collisions at $\sqrt{s_{NN}} = 5.44$ TeV,” Phys. Lett. B **799**, 135049 (2019) doi:10.1016/j.physletb.2019.135049 [arXiv:1902.03603 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Measurement of exclusive $\rho(770)^0$ photoproduction in ultraperipheral pPb collisions at $\sqrt{s_{NN}} = 5.02$ TeV,” Eur. Phys. J. C **79**, no.8, 702 (2019) doi:10.1140/epjc/s10052-019-7202-9 [arXiv:1902.01339 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Observation of Two Excited B_c^+ States and Measurement of the $B_c^+(2S)$ Mass in pp Collisions at $\sqrt{s} = 13$ TeV,” Phys. Rev. Lett. **122**, no.13, 132001 (2019) doi:10.1103/PhysRevLett.122.132001 [arXiv:1902.00571 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Search for W boson decays to three charged pions,” Phys. Rev. Lett. **122**, no.15, 151802 (2019) doi:10.1103/PhysRevLett.122.151802 [arXiv:1901.11201 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Charged-particle angular correlations in XeXe collisions at $\sqrt{s_{NN}} = 5.44$ TeV,” Phys. Rev. C **100**, no.4, 044902 (2019) doi:10.1103/PhysRevC.100.044902 [arXiv:1901.07997 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Search for supersymmetry in events with a photon, jets, b -jets, and missing transverse momentum in proton-proton collisions at 13 TeV,” Eur. Phys. J. C **79**, no.5, 444 (2019) doi:10.1140/epjc/s10052-019-6926-x [arXiv:1901.06726 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Measurement of electroweak WZ boson production and search for new physics in WZ + two jets events in pp collisions at $\sqrt{s} = 13$ TeV,” Phys. Lett. B **795**, 281-307 (2019) doi:10.1016/j.physletb.2019.05.042 [arXiv:1901.04060 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Measurements of the $pp \rightarrow WZ$ inclusive and differential production cross section and constraints on charged anomalous triple gauge couplings at $\sqrt{s} = 13$ TeV,” JHEP **04**, 122 (2019) doi:10.1007/JHEP04(2019)122 [arXiv:1901.03428 [hep-ex]].

- A. M. Sirunyan *et al.* [CMS], “Search for dark matter produced in association with a single top quark or a top quark pair in proton-proton collisions at $\sqrt{s} = 13$ TeV,” JHEP **03**, 141 (2019) doi:10.1007/JHEP03(2019)141 [arXiv:1901.01553 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Search for the pair production of light top squarks in the $e^{\pm}\mu^{\mp}$ final state in proton-proton collisions at $\sqrt{s} = 13$ TeV,” JHEP **03**, 101 (2019) doi:10.1007/JHEP03(2019)101 [arXiv:1901.01288 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Measurements of the Higgs boson width and anomalous HVV couplings from on-shell and off-shell production in the four-lepton final state,” Phys. Rev. D **99**, no.11, 112003 (2019) doi:10.1103/PhysRevD.99.112003 [arXiv:1901.00174 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Search for contact interactions and large extra dimensions in the dilepton mass spectra from proton-proton collisions at $\sqrt{s} = 13$ TeV,” JHEP **04**, 114 (2019) doi:10.1007/JHEP04(2019)114 [arXiv:1812.10443 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Measurement of the single top quark and antiquark production cross sections in the t channel and their ratio in proton-proton collisions at $\sqrt{s} = 13$ TeV,” Phys. Lett. B **800**, 135042 (2020) doi:10.1016/j.physletb.2019.135042 [arXiv:1812.10514 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Measurement of the $t\bar{t}$ production cross section, the top quark mass, and the strong coupling constant using dilepton events in pp collisions at $\sqrt{s} = 13$ TeV,” Eur. Phys. J. C **79**, no.5, 368 (2019) doi:10.1140/epjc/s10052-019-6863-8 [arXiv:1812.10505 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Measurement of the differential Drell-Yan cross section in proton-proton collisions at $\sqrt{s} = 13$ TeV,” JHEP **12**, 059 (2019) doi:10.1007/JHEP12(2019)059 [arXiv:1812.10529 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Measurement of the top quark mass in the all-jets final state at $\sqrt{s} = 13$ TeV and combination with the lepton+jets channel,” Eur. Phys. J. C **79**, no.4, 313 (2019) doi:10.1140/epjc/s10052-019-6788-2 [arXiv:1812.10534 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Search for vector-like quarks in events with two oppositely charged leptons and jets in proton-proton collisions at $\sqrt{s} = 13$ TeV,” Eur. Phys. J. C **79**, no.4, 364 (2019) doi:10.1140/epjc/s10052-019-6855-8 [arXiv:1812.09768 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Measurement and interpretation of differential cross sections for Higgs boson production at $\sqrt{s} = 13$ TeV,” Phys. Lett. B **792**, 369-396 (2019) doi:10.1016/j.physletb.2019.03.059 [arXiv:1812.06504 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Search for a heavy resonance decaying to a top quark and a vector-like top quark in the lepton+jets final state in pp collisions at $\sqrt{s} = 13$ TeV,” Eur. Phys. J. C **79**, no.3, 208 (2019) doi:10.1140/epjc/s10052-019-6688-5 [arXiv:1812.06489 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Search for an exotic decay of the Higgs boson to a pair of light pseudoscalars in the final state with two muons and two b quarks in pp collisions at 13 TeV,” Phys. Lett. B **795**, 398-423 (2019) doi:10.1016/j.physletb.2019.06.021 [arXiv:1812.06359 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Inclusive search for supersymmetry in pp collisions at $\sqrt{s} = 13$ TeV using razor variables and boosted object identification in zero and one lepton final states,” JHEP **03**, 031

(2019) doi:10.1007/JHEP03(2019)031 [arXiv:1812.06302 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Observation of Single Top Quark Production in Association with a Z Boson in Proton-Proton Collisions at $\sqrt{s} = 13$ TeV,” *Phys. Rev. Lett.* **122**, no.13, 132003 (2019) doi:10.1103/PhysRevLett.122.132003 [arXiv:1812.05900 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Search for supersymmetry in events with a photon, a lepton, and missing transverse momentum in proton-proton collisions at $\sqrt{s} = 13$ TeV,” *JHEP* **01**, 154 (2019) doi:10.1007/JHEP01(2019)154 [arXiv:1812.04066 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Measurement of the energy density as a function of pseudorapidity in proton-proton collisions at $\sqrt{s} = 13$ TeV,” *Eur. Phys. J. C* **79**, no.5, 391 (2019) doi:10.1140/epjc/s10052-019-6861-x [arXiv:1812.04095 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Measurement of inclusive very forward jet cross sections in proton-lead collisions at $\sqrt{s_{NN}} = 5.02$ TeV,” *JHEP* **05**, 043 (2019) doi:10.1007/JHEP05(2019)043 [arXiv:1812.01691 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “A search for pair production of new light bosons decaying into muons in proton-proton collisions at 13 TeV,” *Phys. Lett. B* **796**, 131-154 (2019) doi:10.1016/j.physletb.2019.07.013 [arXiv:1812.00380 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Search for dark matter in events with a leptoquark and missing transverse momentum in proton-proton collisions at 13 TeV,” *Phys. Lett. B* **795**, 76-99 (2019) doi:10.1016/j.physletb.2019.05.046 [arXiv:1811.10151 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Measurement of associated production of a W boson and a charm quark in proton-proton collisions at $\sqrt{s} = 13$ TeV,” *Eur. Phys. J. C* **79**, no.3, 269 (2019) doi:10.1140/epjc/s10052-019-6752-1 [arXiv:1811.10021 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Combination of searches for Higgs boson pair production in proton-proton collisions at $\sqrt{s} = 13$ TeV,” *Phys. Rev. Lett.* **122**, no.12, 121803 (2019) doi:10.1103/PhysRevLett.122.121803 [arXiv:1811.09689 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Search for resonant production of second-generation sleptons with same-sign dimuon events in proton-proton collisions at $\sqrt{s} = 13$ TeV,” *Eur. Phys. J. C* **79**, no.4, 305 (2019) doi:10.1140/epjc/s10052-019-6800-x [arXiv:1811.09760 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Search for associated production of a Higgs boson and a single top quark in proton-proton collisions at $\sqrt{s} = 13$ TeV,” *Phys. Rev. D* **99**, no.9, 092005 (2019) doi:10.1103/PhysRevD.99.092005 [arXiv:1811.09696 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Search for a standard model-like Higgs boson in the mass range between 70 and 110 GeV in the diphoton final state in proton-proton collisions at $\sqrt{s} = 8$ and 13 TeV,” *Phys. Lett. B* **793**, 320-347 (2019) doi:10.1016/j.physletb.2019.03.064 [arXiv:1811.08459 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Search for long-lived particles decaying into displaced jets in proton-proton collisions at $\sqrt{s} = 13$ TeV,” *Phys. Rev. D* **99**, no.3, 032011 (2019) doi:10.1103/PhysRevD.99.032011 [arXiv:1811.07991 [hep-ex]].

- A. M. Sirunyan *et al.* [CMS], "Search for a W' boson decaying to a vector-like quark and a top or bottom quark in the all-jets final state," JHEP **03**, 127 (2019) doi:10.1007/JHEP03(2019)127 [arXiv:1811.07010 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], "Measurements of $t\bar{t}$ differential cross sections in proton-proton collisions at $\sqrt{s} = 13$ TeV using events containing two leptons," JHEP **02**, 149 (2019) doi:10.1007/JHEP02(2019)149 [arXiv:1811.06625 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], "Search for dark matter produced in association with a Higgs boson decaying to a pair of bottom quarks in proton-proton collisions at $\sqrt{s} = 13$ TeV," Eur. Phys. J. C **79**, no.3, 280 (2019) doi:10.1140/epjc/s10052-019-6730-7 [arXiv:1811.06562 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], "Search for excited leptons in $\ell\ell\gamma$ final states in proton-proton collisions at $\sqrt{s} = 13$ TeV," JHEP **04**, 015 (2019) doi:10.1007/JHEP04(2019)015 [arXiv:1811.03052 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], "Search for pair production of first-generation scalar leptoquarks at $\sqrt{s} = 13$ TeV," Phys. Rev. D **99**, no.5, 052002 (2019) doi:10.1103/PhysRevD.99.052002 [arXiv:1811.01197 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], "Search for heavy neutrinos and third-generation leptoquarks in hadronic states of two τ leptons and two jets in proton-proton collisions at $\sqrt{s} = 13$ TeV," JHEP **03**, 170 (2019) doi:10.1007/JHEP03(2019)170 [arXiv:1811.00806 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], "Event shape variables measured using multijet final states in proton-proton collisions at $\sqrt{s} = 13$ TeV," JHEP **12**, 117 (2018) doi:10.1007/JHEP12(2018)117 [arXiv:1811.00588 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], "Search for nonresonant Higgs boson pair production in the $b\bar{b}b\bar{b}$ final state at $\sqrt{s} = 13$ TeV," JHEP **04**, 112 (2019) doi:10.1007/JHEP04(2019)112 [arXiv:1810.11854 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], "Search for low-mass resonances decaying into bottom quark-antiquark pairs in proton-proton collisions at $\sqrt{s} = 13$ TeV," Phys. Rev. D **99**, no.1, 012005 (2019) doi:10.1103/PhysRevD.99.012005 [arXiv:1810.11822 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], "Studies of Beauty Suppression via Nonprompt D^0 Mesons in Pb-Pb Collisions at $Q^2 = 4$ GeV²," Phys. Rev. Lett. **123**, no.2, 022001 (2019) doi:10.1103/PhysRevLett.123.022001 [arXiv:1810.11102 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], "Search for rare decays of Z and Higgs bosons to J/ψ and a photon in proton-proton collisions at $\sqrt{s} = 13$ TeV," Eur. Phys. J. C **79**, no.2, 94 (2019) doi:10.1140/epjc/s10052-019-6562-5 [arXiv:1810.10056 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], "Search for pair-produced three-jet resonances in proton-proton collisions at $\sqrt{s} = 13$ TeV," Phys. Rev. D **99**, no.1, 012010 (2019) doi:10.1103/PhysRevD.99.012010 [arXiv:1810.10092 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], "Search for new particles decaying to a jet and an emerging jet," JHEP **02**,

179 (2019) doi:10.1007/JHEP02(2019)179 [arXiv:1810.10069 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Search for resonant $t\bar{t}$ production in proton-proton collisions at $\sqrt{s} = 13$ TeV,” JHEP **04**, 031 (2019) doi:10.1007/JHEP04(2019)031 [arXiv:1810.05905 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Centrality and pseudorapidity dependence of the transverse energy density in pPb collisions at $\sqrt{s_{NN}} = 5.02$ TeV,” Phys. Rev. C **100**, no.2, 024902 (2019) doi:10.1103/PhysRevC.100.024902 [arXiv:1810.05745 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Evidence for light-by-light scattering and searches for axion-like particles in ultraperipheral PbPb collisions at $\sqrt{s_{NN}} = 5.02$ TeV,” Phys. Lett. B **797**, 134826 (2019) doi:10.1016/j.physletb.2019.134826 [arXiv:1810.04602 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Search for top quark partners with charge 5/3 in the same-sign dilepton and single-lepton final states in proton-proton collisions at $\sqrt{s} = 13$ TeV,” JHEP **03**, 082 (2019) doi:10.1007/JHEP03(2019)082 [arXiv:1810.03188 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Measurement of B_s^0 meson production in pp and PbPb collisions at $\sqrt{s_{NN}} = 5.02$ TeV,” Phys. Lett. B **796**, 168-190 (2019) doi:10.1016/j.physletb.2019.07.014 [arXiv:1810.03022 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Observation of prompt J/ψ meson elliptic flow in high-multiplicity pPb collisions at $\sqrt{s_{NN}} = 8.16$ TeV,” Phys. Lett. B **791**, 172-194 (2019) doi:10.1016/j.physletb.2019.02.018 [arXiv:1810.01473 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Search for new physics in final states with a single photon and missing transverse momentum in proton-proton collisions at $\sqrt{s} = 13$ TeV,” JHEP **02**, 074 (2019) doi:10.1007/JHEP02(2019)074 [arXiv:1810.00196 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Measurement of exclusive Υ photoproduction from protons in pPb collisions at $\sqrt{s_{NN}} = 5.02$ TeV,” Eur. Phys. J. C **79**, no.3, 277 (2019) doi:10.1140/epjc/s10052-019-6774-8 [arXiv:1809.11080 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Combined measurements of Higgs boson couplings in proton-proton collisions at $\sqrt{s} = 13$ TeV,” Eur. Phys. J. C **79**, no.5, 421 (2019) doi:10.1140/epjc/s10052-019-6909-y [arXiv:1809.10733 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Search for single production of vector-like quarks decaying to a top quark and a W boson in proton-proton collisions at $\sqrt{s} = 13$ TeV,” Eur. Phys. J. C **79**, 90 (2019) doi:10.1140/epjc/s10052-019-6556-3 [arXiv:1809.08597 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Jet Shapes of Isolated Photon-Tagged Jets in Pb-Pb and pp Collisions at $\sqrt{s_{NN}} = 5.02$ TeV,” Phys. Rev. Lett. **122**, no.15, 152001 (2019) doi:10.1103/PhysRevLett.122.152001 [arXiv:1809.08602 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Search for invisible decays of a Higgs boson produced through vector boson fusion in proton-proton collisions at $\sqrt{s} = 13$ TeV,” Phys. Lett. B **793**, 520-551 (2019) doi:10.1016/j.physletb.2019.04.025 [arXiv:1809.05937 [hep-ex]].

- A. M. Sirunyan *et al.* [CMS], “Search for leptoquarks coupled to third-generation quarks in proton-proton collisions at $\sqrt{s} = 13$ TeV,” *Phys. Rev. Lett.* **121**, no.24, 241802 (2018) doi:10.1103/PhysRevLett.121.241802 [arXiv:1809.05558 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Studies of $B_{s2}^*(5840)^0$ and $B_{s1}(5830)^0$ mesons including the observation of the $B_{s2}^*(5840)^0 \rightarrow B^0 K_S^0$ decay in proton-proton collisions at $\sqrt{s} = 8$ TeV,” *Eur. Phys. J. C* **78**, no.11, 939 (2018) doi:10.1140/epjc/s10052-018-6390-z [arXiv:1809.03578 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Search for the associated production of the Higgs boson and a vector boson in proton-proton collisions at $\sqrt{s} = 13$ TeV via Higgs boson decays to τ leptons,” *JHEP* **06**, 093 (2019) doi:10.1007/JHEP06(2019)093 [arXiv:1809.03590 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Performance of reconstruction and identification of τ leptons decaying to hadrons and ν_τ in pp collisions at $\sqrt{s} = 13$ TeV,” *JINST* **13**, no.10, P10005 (2018) doi:10.1088/1748-0221/13/10/P10005 [arXiv:1809.02816 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Search for physics beyond the standard model in high-mass diphoton events from proton-proton collisions at $\sqrt{s} = 13$ TeV,” *Phys. Rev. D* **98**, no.9, 092001 (2018) doi:10.1103/PhysRevD.98.092001 [arXiv:1809.00327 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Charged-particle nuclear modification factors in XeXe collisions at $\sqrt{s_{NN}} = 5.44$ TeV,” *JHEP* **10**, 138 (2018) doi:10.1007/JHEP10(2018)138 [arXiv:1809.00201 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Observation of Higgs boson decay to bottom quarks,” *Phys. Rev. Lett.* **121**, no.12, 121801 (2018) doi:10.1103/PhysRevLett.121.121801 [arXiv:1808.08242 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Measurement of jet substructure observables in $t\bar{t}$ events from proton-proton collisions at $\sqrt{s} = 13$ TeV,” *Phys. Rev. D* **98**, no.9, 092014 (2018) doi:10.1103/PhysRevD.98.092014 [arXiv:1808.07340 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Search for a charged Higgs boson decaying to charm and bottom quarks in proton-proton collisions at $\sqrt{s} = 8$ TeV,” *JHEP* **11**, 115 (2018) doi:10.1007/JHEP11(2018)115 [arXiv:1808.06575 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Search for pair production of second-generation leptoquarks at $\sqrt{s} = 13$ TeV,” *Phys. Rev. D* **99**, no.3, 032014 (2019) doi:10.1103/PhysRevD.99.032014 [arXiv:1808.05082 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Search for an $L_\mu - L_\tau$ gauge boson using $Z \rightarrow 4\mu$ events in proton-proton collisions at $\sqrt{s} = 13$ TeV,” *Phys. Lett. B* **792**, 345-368 (2019) doi:10.1016/j.physletb.2019.01.072 [arXiv:1808.03684 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Search for pair-produced resonances decaying to quark pairs in proton-proton collisions at $\sqrt{s} = 13$ TeV,” *Phys. Rev. D* **98**, no.11, 112014 (2018) doi:10.1103/PhysRevD.98.112014 [arXiv:1808.03124 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Search for long-lived particles with displaced vertices in multijet events in proton-proton collisions at $\sqrt{s} = 13$ TeV,” *Phys. Rev. D* **98**, no.9, 092011 (2018) doi:10.1103/PhysRevD.98.092011 [arXiv:1808.03078 [hep-ex]].

- A. M. Sirunyan *et al.* [CMS], "Evidence for the associated production of a single top quark and a photon in proton-proton collisions at $\sqrt{s} = 13$ TeV," *Phys. Rev. Lett.* **121**, no.22, 221802 (2018) doi:10.1103/PhysRevLett.121.221802 [arXiv:1808.02913 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], "Search for resonances in the mass spectrum of muon pairs produced in association with b quark jets in proton-proton collisions at $\sqrt{s} = 8$ and 13 TeV," *JHEP* **11**, 161 (2018) doi:10.1007/JHEP11(2018)161 [arXiv:1808.01890 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], "Search for production of Higgs boson pairs in the four b quark final state using large-area jets in proton-proton collisions at $\sqrt{s} = 13$ TeV," *JHEP* **01**, 040 (2019) doi:10.1007/JHEP01(2019)040 [arXiv:1808.01473 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], "Search for narrow $H\gamma$ resonances in proton-proton collisions at $\sqrt{s} = 13$ TeV," *Phys. Rev. Lett.* **122**, no.8, 081804 (2019) doi:10.1103/PhysRevLett.122.081804 [arXiv:1808.01257 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], "Search for heavy resonances decaying into two Higgs bosons or into a Higgs boson and a W or Z boson in proton-proton collisions at 13 TeV," *JHEP* **01**, 051 (2019) doi:10.1007/JHEP01(2019)051 [arXiv:1808.01365 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], "Search for a W' boson decaying to a τ lepton and a neutrino in proton-proton collisions at $\sqrt{s} = 13$ TeV," *Phys. Lett. B* **792**, 107-131 (2019) doi:10.1016/j.physletb.2019.01.069 [arXiv:1807.11421 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], "Searches for pair production of charginos and top squarks in final states with two oppositely charged leptons in proton-proton collisions at $\sqrt{s} = 13$ TeV," *JHEP* **11**, 079 (2018) doi:10.1007/JHEP11(2018)079 [arXiv:1807.07799 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], "Search for the Higgs boson decaying to two muons in proton-proton collisions at $\sqrt{s} = 13$ TeV," *Phys. Rev. Lett.* **122**, no.2, 021801 (2019) doi:10.1103/PhysRevLett.122.021801 [arXiv:1807.06325 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], "Search for dark matter particles produced in association with a top quark pair at $\sqrt{s} = 13$ TeV," *Phys. Rev. Lett.* **122**, no.1, 011803 (2019) doi:10.1103/PhysRevLett.122.011803 [arXiv:1807.06522 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], "Measurements of the differential jet cross section as a function of the jet mass in dijet events from proton-proton collisions at $\sqrt{s} = 13$ TeV," *JHEP* **11**, 113 (2018) doi:10.1007/JHEP11(2018)113 [arXiv:1807.05974 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], "Measurement of inclusive and differential Higgs boson production cross sections in the diphoton decay channel in proton-proton collisions at $\sqrt{s} = 13$ TeV," *JHEP* **01**, 183 (2019) doi:10.1007/JHEP01(2019)183 [arXiv:1807.03825 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], "Precision measurement of the structure of the CMS inner tracking system using nuclear interactions," *JINST* **13**, no.10, P10034 (2018) doi:10.1088/1748-0221/13/10/P10034 [arXiv:1807.03289 [physics.ins-det]].

- A. M. Sirunyan *et al.* [CMS], “Search for heavy resonances decaying into a vector boson and a Higgs boson in final states with charged leptons, neutrinos and b quarks at $\sqrt{s} = 13$ TeV,” JHEP **11**, 172 (2018) doi:10.1007/JHEP11(2018)172 [arXiv:1807.02826 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Study of the underlying event in top quark pair production in pp collisions at 13 TeV,” Eur. Phys. J. C **79**, no.2, 123 (2019) doi:10.1140/epjc/s10052-019-6620-z [arXiv:1807.02810 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Search for supersymmetry in events with a τ lepton pair and missing transverse momentum in proton-proton collisions at $\sqrt{s} = 13$ TeV,” JHEP **11**, 151 (2018) doi:10.1007/JHEP11(2018)151 [arXiv:1807.02048 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Measurement of differential cross sections for inclusive isolated-photon and photon+jets production in proton-proton collisions at $\sqrt{s} = 13$ TeV,” Eur. Phys. J. C **79**, no.1, 20 (2019) doi:10.1140/epjc/s10052-018-6482-9 [arXiv:1807.00782 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Measurement of charged particle spectra in minimum-bias events from proton-proton collisions at $\sqrt{s} = 13$ TeV,” Eur. Phys. J. C **78**, no.9, 697 (2018) doi:10.1140/epjc/s10052-018-6144-y [arXiv:1806.11245 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Measurement of differential cross sections for Z boson pair production in association with jets at $\sqrt{s} = 8$ and 13 TeV,” Phys. Lett. B **789**, 19-44 (2019) doi:10.1016/j.physletb.2018.11.007 [arXiv:1806.11073 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Search for heavy Majorana neutrinos in same-sign dilepton channels in proton-proton collisions at $\sqrt{s} = 13$ TeV,” JHEP **01**, 122 (2019) doi:10.1007/JHEP01(2019)122 [arXiv:1806.10905 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Search for the decay of a Higgs boson in the $\ell\ell\gamma$ channel in proton-proton collisions at $\sqrt{s} = 13$ TeV,” JHEP **11**, 152 (2018) doi:10.1007/JHEP11(2018)152 [arXiv:1806.05996 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Measurements of properties of the Higgs boson decaying to a W boson pair in pp collisions at $\sqrt{s} = 13$ TeV,” Phys. Lett. B **791**, 96 (2019) doi:10.1016/j.physletb.2018.12.073 [arXiv:1806.05246 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Search for supersymmetric partners of electrons and muons in proton-proton collisions at $\sqrt{s} = 13$ TeV,” Phys. Lett. B **790**, 140-166 (2019) doi:10.1016/j.physletb.2019.01.005 [arXiv:1806.05264 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Search for dark matter produced in association with a Higgs boson decaying to $\gamma\gamma$ or $\tau^+\tau^-$ at $\sqrt{s} = 13$ TeV,” JHEP **09**, 046 (2018) doi:10.1007/JHEP09(2018)046 [arXiv:1806.04771 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Observation of the $Z \rightarrow \psi\ell^+\ell^-$ decay in pp collisions at $\sqrt{s} = 13$ TeV,” Phys. Rev. Lett. **121**, no.14, 141801 (2018) doi:10.1103/PhysRevLett.121.141801 [arXiv:1806.04213 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Search for resonant pair production of Higgs bosons decaying to bottom quark-antiquark pairs in proton-proton collisions at 13 TeV,” JHEP **08**, 152 (2018) doi:10.1007/JHEP08(2018)152

[arXiv:1806.03548 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Search for a singly produced third-generation scalar leptoquark decaying to a τ lepton and a bottom quark in proton-proton collisions at $\sqrt{s} = 13$ TeV," JHEP **07**, 115 (2018) doi:10.1007/JHEP07(2018)115 [arXiv:1806.03472 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Search for pair-produced resonances each decaying into at least four quarks in proton-proton collisions at $\sqrt{s} = 13$ TeV," Phys. Rev. Lett. **121**, no.14, 141802 (2018) doi:10.1103/PhysRevLett.121.141802 [arXiv:1806.01058 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Measurement of the weak mixing angle using the forward-backward asymmetry of Drell-Yan events in pp collisions at 8 TeV," Eur. Phys. J. C **78**, no.9, 701 (2018) doi:10.1140/epjc/s10052-018-6148-7 [arXiv:1806.00863 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Search for narrow and broad dijet resonances in proton-proton collisions at $\sqrt{s} = 13$ TeV and constraints on dark matter mediators and other new particles," JHEP **08**, 130 (2018) doi:10.1007/JHEP08(2018)130 [arXiv:1806.00843 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Angular analysis of the decay $B^+ \rightarrow K^+ \mu^+ \mu^-$ in proton-proton collisions at $\sqrt{s} = 8$ TeV," Phys. Rev. D **98**, no.11, 112011 (2018) doi:10.1103/PhysRevD.98.112011 [arXiv:1806.00636 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Search for Higgs boson pair production in the $\gamma\gamma b\bar{b}$ final state in pp collisions at $\sqrt{s} = 13$ TeV," Phys. Lett. B **788**, 7-36 (2019) doi:10.1016/j.physletb.2018.10.056 [arXiv:1806.00408 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Search for beyond the standard model Higgs bosons decaying into a $b\bar{b}$ pair in pp collisions at $\sqrt{s} = 13$ TeV," JHEP **08**, 113 (2018) doi:10.1007/JHEP08(2018)113 [arXiv:1805.12191 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Observation of the $\chi_{b1}(3P)$ and $\chi_{b2}(3P)$ and measurement of their masses," Phys. Rev. Lett. **121**, 092002 (2018) doi:10.1103/PhysRevLett.121.092002 [arXiv:1805.11192 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Search for an exotic decay of the Higgs boson to a pair of light pseudoscalars in the final state with two b quarks and two τ leptons in proton-proton collisions at $\sqrt{s} = 13$ TeV," Phys. Lett. B **785**, 462 (2018) doi:10.1016/j.physletb.2018.08.057 [arXiv:1805.10191 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Constraints on models of scalar and vector leptoquarks decaying to a quark and a neutrino at $\sqrt{s} = 13$ TeV," Phys. Rev. D **98**, no.3, 032005 (2018) doi:10.1103/PhysRevD.98.032005 [arXiv:1805.10228 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Measurement of nuclear modification factors of $\Upsilon(1S)$, $\Upsilon(2S)$, and $\Upsilon(3S)$ mesons in PbPb collisions at $\sqrt{s_{NN}} = 5.02$ TeV," Phys. Lett. B **790**, 270-293 (2019) doi:10.1016/j.physletb.2019.01.006 [arXiv:1805.09215 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Measurement of the production cross section for single top quarks in association with W bosons in proton-proton collisions at $\sqrt{s} = 13$ TeV," JHEP **10**, 117 (2018) doi:10.1007/JHEP10(2018)117 [arXiv:1805.07399 [hep-ex]].

- A. M. Sirunyan *et al.* [CMS], "Search for black holes and sphalerons in high-multiplicity final states in proton-proton collisions at $\sqrt{s} = 13$ TeV," JHEP **11**, 042 (2018) doi:10.1007/JHEP11(2018)042 [arXiv:1805.06013 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], "Search for top squarks decaying via four-body or chargino-mediated modes in single-lepton final states in proton-proton collisions at $\sqrt{s} = 13$ TeV," JHEP **09**, 065 (2018) doi:10.1007/JHEP09(2018)065 [arXiv:1805.05784 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], "Measurement of the groomed jet mass in PbPb and pp collisions at $\sqrt{s_{NN}} = 5.02$ TeV," JHEP **10**, 161 (2018) doi:10.1007/JHEP10(2018)161 [arXiv:1805.05145 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], "Search for an exotic decay of the Higgs boson to a pair of light pseudoscalars in the final state of two muons and two τ leptons in proton-proton collisions at $\sqrt{s} = 13$ TeV," JHEP **11**, 018 (2018) doi:10.1007/JHEP11(2018)018 [arXiv:1805.04865 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], "Search for vector-like T and B quark pairs in final states with leptons at $\sqrt{s} = 13$ TeV," JHEP **08**, 177 (2018) doi:10.1007/JHEP08(2018)177 [arXiv:1805.04758 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], "Constraining gluon distributions in nuclei using dijets in proton-proton and proton-lead collisions at $\sqrt{s_{NN}} = 5.02$ TeV," Phys. Rev. Lett. **121**, no.6, 062002 (2018) doi:10.1103/PhysRevLett.121.062002 [arXiv:1805.04736 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], "Measurement of prompt $\psi(2S)$ production cross sections in proton-lead and proton-proton collisions at $\sqrt{s_{NN}} = 5.02$ TeV," Phys. Lett. B **790**, 509-532 (2019) doi:10.1016/j.physletb.2019.01.058 [arXiv:1805.02248 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], "Measurement of the top quark mass with lepton+jets final states using p p collisions at $\sqrt{s} = 13$ TeV," Eur. Phys. J. C **78**, no.11, 891 (2018) doi:10.1140/epjc/s10052-018-6332-9 [arXiv:1805.01428 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], "Elliptic flow of charm and strange hadrons in high-multiplicity pPb collisions at $\sqrt{s_{NN}} = 8.16$ TeV," Phys. Rev. Lett. **121**, no.8, 082301 (2018) doi:10.1103/PhysRevLett.121.082301 [arXiv:1804.09767 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], "Search for disappearing tracks as a signature of new long-lived particles in proton-proton collisions at $\sqrt{s} = 13$ TeV," JHEP **08**, 016 (2018) doi:10.1007/JHEP08(2018)016 [arXiv:1804.07321 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], "Measurement of differential cross sections for Z boson production in association with jets in proton-proton collisions at $\sqrt{s} = 13$ TeV," Eur. Phys. J. C **78**, no.11, 965 (2018) doi:10.1140/epjc/s10052-018-6373-0 [arXiv:1804.05252 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], "Performance of the CMS muon detector and muon reconstruction with proton-proton collisions at $\sqrt{s} = 13$ TeV," JINST **13**, no.06, P06015 (2018) doi:10.1088/1748-0221/13/06/P06015 [arXiv:1804.04528 [physics.ins-det]].
- A. M. Sirunyan *et al.* [CMS], "Search for $t\bar{t}H$ production in the $H \rightarrow b\bar{b}$ decay channel with leptonic $t\bar{t}$ decays in proton-proton collisions at $\sqrt{s} = 13$ TeV," JHEP **03**, 026 (2019) doi:10.1007/JHEP03(2019)026

[arXiv:1804.03682 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Measurements of Higgs boson properties in the diphoton decay channel in proton-proton collisions at $\sqrt{s} = 13$ TeV,” JHEP **11**, 185 (2018) doi:10.1007/JHEP11(2018)185 [arXiv:1804.02716 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Observation of $t\bar{t}H$ production,” Phys. Rev. Lett. **120**, no.23, 231801 (2018) doi:10.1103/PhysRevLett.120.231801 [arXiv:1804.02610 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Search for a new scalar resonance decaying to a pair of Z bosons in proton-proton collisions at $\sqrt{s} = 13$ TeV,” JHEP **06**, 127 (2018) [erratum: JHEP **03**, 128 (2019)] doi:10.1007/JHEP06(2018)127 [arXiv:1804.01939 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Search for a heavy right-handed W boson and a heavy neutrino in events with two same-flavor leptons and two jets at $\sqrt{s} = 13$ TeV,” JHEP **05**, 148 (2018) doi:10.1007/JHEP05(2018)148 [arXiv:1803.11116 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Search for high-mass resonances in final states with a lepton and missing transverse momentum at $\sqrt{s} = 13$ TeV,” JHEP **06**, 128 (2018) doi:10.1007/JHEP06(2018)128 [arXiv:1803.11133 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Search for a heavy resonance decaying into a Z boson and a Z or W boson in $2\ell 2q$ final states at $\sqrt{s} = 13$ TeV,” JHEP **09**, 101 (2018) doi:10.1007/JHEP09(2018)101 [arXiv:1803.10093 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Measurement of differential cross sections for the production of top quark pairs and of additional jets in lepton+jets events from pp collisions at $\sqrt{s} = 13$ TeV,” Phys. Rev. D **97**, no.11, 112003 (2018) doi:10.1103/PhysRevD.97.112003 [arXiv:1803.08856 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Search for new physics in dijet angular distributions using proton-proton collisions at $\sqrt{s} = 13$ TeV and constraints on dark matter and other models,” Eur. Phys. J. C **78**, no.9, 789 (2018) doi:10.1140/epjc/s10052-018-6242-x [arXiv:1803.08030 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Search for $t\bar{t}H$ production in the all-jet final state in proton-proton collisions at $\sqrt{s} = 13$ TeV,” JHEP **06**, 101 (2018) doi:10.1007/JHEP06(2018)101 [arXiv:1803.06986 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Search for additional neutral MSSM Higgs bosons in the $\tau\tau$ final state in proton-proton collisions at $\sqrt{s} = 13$ TeV,” JHEP **09**, 007 (2018) doi:10.1007/JHEP09(2018)007 [arXiv:1803.06553 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Search for high-mass resonances in dilepton final states in proton-proton collisions at $\sqrt{s} = 13$ TeV,” JHEP **06**, 120 (2018) doi:10.1007/JHEP06(2018)120 [arXiv:1803.06292 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Evidence for associated production of a Higgs boson with a top quark pair in final states with electrons, muons, and hadronically decaying τ leptons at $\sqrt{s} = 13$ TeV,” JHEP **08**, 066 (2018) doi:10.1007/JHEP08(2018)066 [arXiv:1803.05485 [hep-ex]].

A. M. Sirunyan *et al.* [CMS and TOTEM], “Observation of proton-tagged, central (semi)exclusive

production of high-mass lepton pairs in pp collisions at 13 TeV with the CMS-TOTEM precision proton spectrometer,” JHEP **07**, 153 (2018) doi:10.1007/JHEP07(2018)153 [arXiv:1803.04496 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Measurements of differential cross sections of top quark pair production as a function of kinematic event variables in proton-proton collisions at $\sqrt{s} = 13$ TeV,” JHEP **06**, 002 (2018) doi:10.1007/JHEP06(2018)002 [arXiv:1803.03991 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Search for a heavy resonance decaying into a Z boson and a vector boson in the $\nu\bar{\nu}q\bar{q}$ final state,” JHEP **07**, 075 (2018) doi:10.1007/JHEP07(2018)075 [arXiv:1803.03838 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Search for third-generation scalar leptoquarks decaying to a top quark and a τ lepton at $\sqrt{s} = 13$ TeV,” Eur. Phys. J. C **78**, 707 (2018) doi:10.1140/epjc/s10052-018-6143-z [arXiv:1803.02864 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Jet properties in PbPb and pp collisions at $\sqrt{s_{NN}} = 5.02$ TeV,” JHEP **05**, 006 (2018) doi:10.1007/JHEP05(2018)006 [arXiv:1803.00042 [nucl-ex]].

A. M. Sirunyan *et al.* [CMS], “Search for a heavy resonance decaying to a pair of vector bosons in the lepton plus merged jet final state at $\sqrt{s} = 13$ TeV,” JHEP **05**, 088 (2018) doi:10.1007/JHEP05(2018)088 [arXiv:1802.09407 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Search for narrow resonances in the b-tagged dijet mass spectrum in proton-proton collisions at $\sqrt{s} = 8$ TeV,” Phys. Rev. Lett. **120**, no.20, 201801 (2018) doi:10.1103/PhysRevLett.120.201801 [arXiv:1802.06149 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Measurement of the Λ_b polarization and angular parameters in $\Lambda_b \rightarrow J/\psi \Lambda$ decays from pp collisions at $\sqrt{s} = 7$ and 8 TeV,” Phys. Rev. D **97**, no.7, 072010 (2018) doi:10.1103/PhysRevD.97.072010 [arXiv:1802.04867 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Search for heavy neutral leptons in events with three charged leptons in proton-proton collisions at $\sqrt{s} = 13$ TeV,” Phys. Rev. Lett. **120**, no.22, 221801 (2018) doi:10.1103/PhysRevLett.120.221801 [arXiv:1802.02965 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Measurement of the inelastic proton-proton cross section at $\sqrt{s} = 13$ TeV,” JHEP **07**, 161 (2018) doi:10.1007/JHEP07(2018)161 [arXiv:1802.02613 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Search for natural and split supersymmetry in proton-proton collisions at $\sqrt{s} = 13$ TeV in final states with jets and missing transverse momentum,” JHEP **05**, 025 (2018) doi:10.1007/JHEP05(2018)025 [arXiv:1802.02110 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Search for single production of vector-like quarks decaying to a b quark and a Higgs boson,” JHEP **06**, 031 (2018) doi:10.1007/JHEP06(2018)031 [arXiv:1802.01486 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Search for lepton-flavor violating decays of heavy resonances and quantum black holes to $e\mu$ final states in proton-proton collisions at $\sqrt{s} = 13$ TeV,” JHEP **04**, 073 (2018) doi:10.1007/JHEP04(2018)073 [arXiv:1802.01122 [hep-ex]].

- A. M. Sirunyan *et al.* [CMS], “Comparing transverse momentum balance of b jet pairs in pp and PbPb collisions at $\sqrt{s_{NN}} = 5.02$ TeV,” JHEP **03**, 181 (2018) doi:10.1007/JHEP03(2018)181 [arXiv:1802.00707 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Search for dark matter in events with energetic, hadronically decaying top quarks and missing transverse momentum at $\sqrt{s} = 13$ TeV,” JHEP **06**, 027 (2018) doi:10.1007/JHEP06(2018)027 [arXiv:1801.08427 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Observation of Medium-Induced Modifications of Jet Fragmentation in Pb-Pb Collisions at $\sqrt{s_{NN}} = 5.02$ TeV Using Isolated Photon-Tagged Jets,” Phys. Rev. Lett. **121**, no.24, 242301 (2018) doi:10.1103/PhysRevLett.121.242301 [arXiv:1801.04895 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Combined search for electroweak production of charginos and neutralinos in proton-proton collisions at $\sqrt{s} = 13$ TeV,” JHEP **03**, 160 (2018) doi:10.1007/JHEP03(2018)160 [arXiv:1801.03957 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Measurement of the $Z\gamma^* \rightarrow \tau\tau$ cross section in pp collisions at $\sqrt{s} = 13$ TeV and validation of τ lepton analysis techniques,” Eur. Phys. J. C **78**, no.9, 708 (2018) doi:10.1140/epjc/s10052-018-6146-9 [arXiv:1801.03535 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Search for new physics in events with two soft oppositely charged leptons and missing transverse momentum in proton-proton collisions at $\sqrt{s} = 13$ TeV,” Phys. Lett. B **782**, 440-467 (2018) doi:10.1016/j.physletb.2018.05.062 [arXiv:1801.01846 [hep-ex]]. A. M. Sirunyan *et al.* [CMS], “Measurement of the top quark mass in the all-jets final state at $\sqrt{s} = 13$ TeV and combination with the lepton+jets channel,” Eur. Phys. J. C **79** (2019) no.4, 313 doi:10.1140/epjc/s10052-019-6788-2 [arXiv:1812.10534 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Measurement of the single top quark and antiquark production cross sections in the t channel and their ratio in proton-proton collisions at $\sqrt{s} = 13$ TeV,” Phys. Lett. B **800** (2020), 135042 doi:10.1016/j.physletb.2019.135042 [arXiv:1812.10514 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Measurement of the $t\bar{t}$ production cross section, the top quark mass, and the strong coupling constant using dilepton events in pp collisions at $\sqrt{s} = 13$ TeV,” Eur. Phys. J. C **79** (2019) no.5, 368 doi:10.1140/epjc/s10052-019-6863-8 [arXiv:1812.10505 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Measurement of the differential Drell-Yan cross section in proton-proton collisions at $\sqrt{s} = 13$ TeV,” JHEP **12** (2019), 059 doi:10.1007/JHEP12(2019)059 [arXiv:1812.10529 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Search for contact interactions and large extra dimensions in the dilepton mass spectra from proton-proton collisions at $\sqrt{s} = 13$ TeV,” JHEP **04** (2019), 114 doi:10.1007/JHEP04(2019)114 [arXiv:1812.10443 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Search for vector-like quarks in events with two oppositely charged leptons and jets in proton-proton collisions at $\sqrt{s} = 13$ TeV,” Eur. Phys. J. C **79** (2019) no.4, 364 doi:10.1140/epjc/s10052-019-6855-8 [arXiv:1812.09768 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Search for a heavy resonance decaying to a top quark and a vector-like top quark in the lepton+jets final state in pp collisions at $\sqrt{s} = 13$ TeV,” Eur. Phys. J. C **79** (2019) no.3, 208 doi:10.1140/epjc/s10052-019-6688-5 [arXiv:1812.06489 [hep-ex]].

- A. M. Sirunyan *et al.* [CMS], "Measurement and interpretation of differential cross sections for Higgs boson production at $\sqrt{s} = 13$ TeV," *Phys. Lett. B* **792** (2019), 369-396 doi:10.1016/j.physletb.2019.03.059 [arXiv:1812.06504 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], "Search for an exotic decay of the Higgs boson to a pair of light pseudoscalars in the final state with two muons and two b quarks in pp collisions at 13 TeV," *Phys. Lett. B* **795** (2019), 398-423 doi:10.1016/j.physletb.2019.06.021 [arXiv:1812.06359 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], "Inclusive search for supersymmetry in pp collisions at $\sqrt{s} = 13$ TeV using razor variables and boosted object identification in zero and one lepton final states," *JHEP* **03** (2019), 031 doi:10.1007/JHEP03(2019)031 [arXiv:1812.06302 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], "Observation of Single Top Quark Production in Association with a Z Boson in Proton-Proton Collisions at $\sqrt{s} = 13$ TeV," *Phys. Rev. Lett.* **122** (2019) no.13, 132003 doi:10.1103/PhysRevLett.122.132003 [arXiv:1812.05900 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], "Measurement of the energy density as a function of pseudorapidity in proton-proton collisions at $\sqrt{s} = 13$ TeV," *Eur. Phys. J. C* **79** (2019) no.5, 391 doi:10.1140/epjc/s10052-019-6861-x [arXiv:1812.04095 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], "Search for supersymmetry in events with a photon, a lepton, and missing transverse momentum in proton-proton collisions at $\sqrt{s} = 13$ TeV," *JHEP* **01** (2019), 154 doi:10.1007/JHEP01(2019)154 [arXiv:1812.04066 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], "Measurement of inclusive very forward jet cross sections in proton-lead collisions at $\sqrt{s_{NN}} = 5.02$ TeV," *JHEP* **05** (2019), 043 doi:10.1007/JHEP05(2019)043 [arXiv:1812.01691 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], "A search for pair production of new light bosons decaying into muons in proton-proton collisions at 13 TeV," *Phys. Lett. B* **796** (2019), 131-154 doi:10.1016/j.physletb.2019.07.013 [arXiv:1812.00380 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], "Measurement of associated production of a W boson and a charm quark in proton-proton collisions at $\sqrt{s} = 13$ TeV," *Eur. Phys. J. C* **79** (2019) no.3, 269 doi:10.1140/epjc/s10052-019-6752-1 [arXiv:1811.10021 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], "Search for dark matter in events with a leptoquark and missing transverse momentum in proton-proton collisions at 13 TeV," *Phys. Lett. B* **795** (2019), 76-99 doi:10.1016/j.physletb.2019.05.046 [arXiv:1811.10151 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], "Search for resonant production of second-generation sleptons with same-sign dimuon events in proton-proton collisions at $\sqrt{s} = 13$ TeV," *Eur. Phys. J. C* **79** (2019) no.4, 305 doi:10.1140/epjc/s10052-019-6800-x [arXiv:1811.09760 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], "Combination of searches for Higgs boson pair production in proton-proton collisions at $\sqrt{s} = 13$ TeV," *Phys. Rev. Lett.* **122** (2019) no.12, 121803 doi:10.1103/PhysRevLett.122.121803 [arXiv:1811.09689 [hep-ex]].

- A. M. Sirunyan *et al.* [CMS], “Search for associated production of a Higgs boson and a single top quark in proton-proton collisions at $\sqrt{s} = 13$ TeV,” *Phys. Rev. D* **99** (2019) no.9, 092005 doi:10.1103/PhysRevD.99.092005 [arXiv:1811.09696 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Search for a standard model-like Higgs boson in the mass range between 70 and 110 GeV in the diphoton final state in proton-proton collisions at $\sqrt{s} = 8$ and 13 TeV,” *Phys. Lett. B* **793** (2019), 320-347 doi:10.1016/j.physletb.2019.03.064 [arXiv:1811.08459 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Search for long-lived particles decaying into displaced jets in proton-proton collisions at $\sqrt{s} = 13$ TeV,” *Phys. Rev. D* **99** (2019) no.3, 032011 doi:10.1103/PhysRevD.99.032011 [arXiv:1811.07991 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Search for a W' boson decaying to a vector-like quark and a top or bottom quark in the all-jets final state,” *JHEP* **03** (2019), 127 doi:10.1007/JHEP03(2019)127 [arXiv:1811.07010 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Measurements of $t\bar{t}$ differential cross sections in proton-proton collisions at $\sqrt{s} = 13$ TeV using events containing two leptons,” *JHEP* **02** (2019), 149 doi:10.1007/JHEP02(2019)149 [arXiv:1811.06625 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Search for dark matter produced in association with a Higgs boson decaying to a pair of bottom quarks in proton-proton collisions at $\sqrt{s} = 13$ TeV,” *Eur. Phys. J. C* **79** (2019) no.3, 280 doi:10.1140/epjc/s10052-019-6730-7 [arXiv:1811.06562 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Search for excited leptons in $\ell\ell\gamma$ final states in proton-proton collisions at $\sqrt{s} = 13$ TeV,” *JHEP* **04** (2019), 015 doi:10.1007/JHEP04(2019)015 [arXiv:1811.03052 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Search for pair production of first-generation scalar leptoquarks at $\sqrt{s} = 13$ TeV,” *Phys. Rev. D* **99** (2019) no.5, 052002 doi:10.1103/PhysRevD.99.052002 [arXiv:1811.01197 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Search for heavy neutrinos and third-generation leptoquarks in hadronic states of two τ leptons and two jets in proton-proton collisions at $\sqrt{s} = 13$ TeV,” *JHEP* **03** (2019), 170 doi:10.1007/JHEP03(2019)170 [arXiv:1811.00806 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Event shape variables measured using multijet final states in proton-proton collisions at $\sqrt{s} = 13$ TeV,” *JHEP* **12** (2018), 117 doi:10.1007/JHEP12(2018)117 [arXiv:1811.00588 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Search for nonresonant Higgs boson pair production in the $b\bar{b}b\bar{b}$ final state at $\sqrt{s} = 13$ TeV,” *JHEP* **04** (2019), 112 doi:10.1007/JHEP04(2019)112 [arXiv:1810.11854 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Search for low-mass resonances decaying into bottom quark-antiquark pairs in proton-proton collisions at $\sqrt{s} = 13$ TeV,” *Phys. Rev. D* **99** (2019) no.1, 012005 doi:10.1103/PhysRevD.99.012005 [arXiv:1810.11822 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Studies of Beauty Suppression via Nonprompt D^0 Mesons in Pb-Pb Collisions at $Q^2 = 4$ GeV²,” *Phys. Rev. Lett.* **123** (2019) no.2, 022001 doi:10.1103/PhysRevLett.123.022001 [arXiv:1810.11102 [hep-ex]].

- A. M. Sirunyan *et al.* [CMS], “Search for new particles decaying to a jet and an emerging jet,” JHEP **02** (2019), 179 doi:10.1007/JHEP02(2019)179 [arXiv:1810.10069 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Search for rare decays of Z and Higgs bosons to J/ψ and a photon in proton-proton collisions at $\sqrt{s} = 13$ TeV,” Eur. Phys. J. C **79** (2019) no.2, 94 doi:10.1140/epjc/s10052-019-6562-5 [arXiv:1810.10056 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Search for pair-produced three-jet resonances in proton-proton collisions at $\sqrt{s} = 13$ TeV,” Phys. Rev. D **99** (2019) no.1, 012010 doi:10.1103/PhysRevD.99.012010 [arXiv:1810.10092 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Search for resonant $t\bar{t}$ production in proton-proton collisions at $\sqrt{s} = 13$ TeV,” JHEP **04** (2019), 031 doi:10.1007/JHEP04(2019)031 [arXiv:1810.05905 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Centrality and pseudorapidity dependence of the transverse energy density in pPb collisions at $\sqrt{s_{NN}} = 5.02$ TeV,” Phys. Rev. C **100** (2019) no.2, 024902 doi:10.1103/PhysRevC.100.024902 [arXiv:1810.05745 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Evidence for light-by-light scattering and searches for axion-like particles in ultraperipheral PbPb collisions at $\sqrt{s_{NN}} = 5.02$ TeV,” Phys. Lett. B **797** (2019), 134826 doi:10.1016/j.physletb.2019.134826 [arXiv:1810.04602 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Search for top quark partners with charge 5/3 in the same-sign dilepton and single-lepton final states in proton-proton collisions at $\sqrt{s} = 13$ TeV,” JHEP **03** (2019), 082 doi:10.1007/JHEP03(2019)082 [arXiv:1810.03188 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Measurement of B_s^0 meson production in pp and PbPb collisions at $\sqrt{s_{NN}} = 5.02$ TeV,” Phys. Lett. B **796** (2019), 168-190 doi:10.1016/j.physletb.2019.07.014 [arXiv:1810.03022 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Observation of prompt J/ψ meson elliptic flow in high-multiplicity pPb collisions at $\sqrt{s_{NN}} = 8.16$ TeV,” Phys. Lett. B **791** (2019), 172-194 doi:10.1016/j.physletb.2019.02.018 [arXiv:1810.01473 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Search for new physics in final states with a single photon and missing transverse momentum in proton-proton collisions at $\sqrt{s} = 13$ TeV,” JHEP **02** (2019), 074 doi:10.1007/JHEP02(2019)074 [arXiv:1810.00196 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Measurement of exclusive Υ photoproduction from protons in pPb collisions at $\sqrt{s_{NN}} = 5.02$ TeV,” Eur. Phys. J. C **79** (2019) no.3, 277 doi:10.1140/epjc/s10052-019-6774-8 [arXiv:1809.11080 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Combined measurements of Higgs boson couplings in proton-proton collisions at $\sqrt{s} = 13$ TeV,” Eur. Phys. J. C **79** (2019) no.5, 421 doi:10.1140/epjc/s10052-019-6909-y [arXiv:1809.10733 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Jet Shapes of Isolated Photon-Tagged Jets in Pb-Pb and pp Collisions at $\sqrt{s_{NN}} = 5.02$ TeV,” Phys. Rev. Lett. **122** (2019) no.15, 152001 doi:10.1103/PhysRevLett.122.152001

[arXiv:1809.08602 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Search for single production of vector-like quarks decaying to a top quark and a W boson in proton-proton collisions at $\sqrt{s} = 13$ TeV,” *Eur. Phys. J. C* **79** (2019), 90 doi:10.1140/epjc/s10052-019-6556-3 [arXiv:1809.08597 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Search for invisible decays of a Higgs boson produced through vector boson fusion in proton-proton collisions at $\sqrt{s} = 13$ TeV,” *Phys. Lett. B* **793** (2019), 520-551 doi:10.1016/j.physletb.2019.04.025 [arXiv:1809.05937 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Search for leptoquarks coupled to third-generation quarks in proton-proton collisions at $\sqrt{s} = 13$ TeV,” *Phys. Rev. Lett.* **121** (2018) no.24, 241802 doi:10.1103/PhysRevLett.121.241802 [arXiv:1809.05558 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Studies of $B_{s2}^*(5840)^0$ and $B_{s1}(5830)^0$ mesons including the observation of the $B_{s2}^*(5840)^0 \rightarrow B^0 K_S^0$ decay in proton-proton collisions at $\sqrt{s} = 8$ TeV,” *Eur. Phys. J. C* **78** (2018) no.11, 939 doi:10.1140/epjc/s10052-018-6390-z [arXiv:1809.03578 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Search for the associated production of the Higgs boson and a vector boson in proton-proton collisions at $\sqrt{s} = 13$ TeV via Higgs boson decays to τ leptons,” *JHEP* **06** (2019), 093 doi:10.1007/JHEP06(2019)093 [arXiv:1809.03590 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Performance of reconstruction and identification of τ leptons decaying to hadrons and ν_τ in pp collisions at $\sqrt{s} = 13$ TeV,” *JINST* **13** (2018) no.10, P10005 doi:10.1088/1748-0221/13/10/P10005 [arXiv:1809.02816 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Search for physics beyond the standard model in high-mass diphoton events from proton-proton collisions at $\sqrt{s} = 13$ TeV,” *Phys. Rev. D* **98** (2018) no.9, 092001 doi:10.1103/PhysRevD.98.092001 [arXiv:1809.00327 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Charged-particle nuclear modification factors in XeXe collisions at $\sqrt{s_{NN}} = 5.44$ TeV,” *JHEP* **10** (2018), 138 doi:10.1007/JHEP10(2018)138 [arXiv:1809.00201 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Observation of Higgs boson decay to bottom quarks,” *Phys. Rev. Lett.* **121** (2018) no.12, 121801 doi:10.1103/PhysRevLett.121.121801 [arXiv:1808.08242 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Measurement of jet substructure observables in $t\bar{t}$ events from proton-proton collisions at $\sqrt{s} = 13$ TeV,” *Phys. Rev. D* **98** (2018) no.9, 092014 doi:10.1103/PhysRevD.98.092014 [arXiv:1808.07340 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Search for a charged Higgs boson decaying to charm and bottom quarks in proton-proton collisions at $\sqrt{s} = 8$ TeV,” *JHEP* **11** (2018), 115 doi:10.1007/JHEP11(2018)115 [arXiv:1808.06575 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Search for pair production of second-generation leptoquarks at $\sqrt{s} = 13$ TeV,” *Phys. Rev. D* **99** (2019) no.3, 032014 doi:10.1103/PhysRevD.99.032014 [arXiv:1808.05082 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Search for an $L_\mu - L_\tau$ gauge boson using $Z \rightarrow 4\mu$ events in proton-proton collisions at $\sqrt{s} = 13$ TeV,” *Phys. Lett. B* **792** (2019), 345-368 doi:10.1016/j.physletb.2019.01.072

[arXiv:1808.03684 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Search for long-lived particles with displaced vertices in multijet events in proton-proton collisions at $\sqrt{s} = 13$ TeV,” Phys. Rev. D **98** (2018) no.9, 092011 doi:10.1103/PhysRevD.98.092011 [arXiv:1808.03078 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Search for pair-produced resonances decaying to quark pairs in proton-proton collisions at $\sqrt{s} = 13$ TeV,” Phys. Rev. D **98** (2018) no.11, 112014 doi:10.1103/PhysRevD.98.112014 [arXiv:1808.03124 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Evidence for the associated production of a single top quark and a photon in proton-proton collisions at $\sqrt{s} = 13$ TeV,” Phys. Rev. Lett. **121** (2018) no.22, 221802 doi:10.1103/PhysRevLett.121.221802 [arXiv:1808.02913 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Search for resonances in the mass spectrum of muon pairs produced in association with b quark jets in proton-proton collisions at $\sqrt{s} = 8$ and 13 TeV,” JHEP **11** (2018), 161 doi:10.1007/JHEP11(2018)161 [arXiv:1808.01890 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Search for production of Higgs boson pairs in the four b quark final state using large-area jets in proton-proton collisions at $\sqrt{s} = 13$ TeV,” JHEP **01** (2019), 040 doi:10.1007/JHEP01(2019)040 [arXiv:1808.01473 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Search for heavy resonances decaying into two Higgs bosons or into a Higgs boson and a W or Z boson in proton-proton collisions at 13 TeV,” JHEP **01** (2019), 051 doi:10.1007/JHEP01(2019)051 [arXiv:1808.01365 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Search for narrow $H\gamma$ resonances in proton-proton collisions at $\sqrt{s} = 13$ TeV,” Phys. Rev. Lett. **122** (2019) no.8, 081804 doi:10.1103/PhysRevLett.122.081804 [arXiv:1808.01257 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Search for a W' boson decaying to a τ lepton and a neutrino in proton-proton collisions at $\sqrt{s} = 13$ TeV,” Phys. Lett. B **792** (2019), 107-131 doi:10.1016/j.physletb.2019.01.069 [arXiv:1807.11421 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Searches for pair production of charginos and top squarks in final states with two oppositely charged leptons in proton-proton collisions at $\sqrt{s} = 13$ TeV,” JHEP **11** (2018), 079 doi:10.1007/JHEP11(2018)079 [arXiv:1807.07799 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Search for dark matter particles produced in association with a top quark pair at $\sqrt{s} = 13$ TeV,” Phys. Rev. Lett. **122** (2019) no.1, 011803 doi:10.1103/PhysRevLett.122.011803 [arXiv:1807.06522 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Search for the Higgs boson decaying to two muons in proton-proton collisions at $\sqrt{s} = 13$ TeV,” Phys. Rev. Lett. **122** (2019) no.2, 021801 doi:10.1103/PhysRevLett.122.021801 [arXiv:1807.06325 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Measurements of the differential jet cross section as a function of the jet mass in dijet events from proton-proton collisions at $\sqrt{s} = 13$ TeV,” JHEP **11** (2018), 113 doi:10.1007/JHEP11(2018)113 [arXiv:1807.05974 [hep-ex]].

- A. M. Sirunyan *et al.* [CMS], "Measurement of inclusive and differential Higgs boson production cross sections in the diphoton decay channel in proton-proton collisions at $\sqrt{s} = 13$ TeV," JHEP **01** (2019), 183 doi:10.1007/JHEP01(2019)183 [arXiv:1807.03825 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], "Precision measurement of the structure of the CMS inner tracking system using nuclear interactions," JINST **13** (2018) no.10, P10034 doi:10.1088/1748-0221/13/10/P10034 [arXiv:1807.03289 [physics.ins-det]].
- A. M. Sirunyan *et al.* [CMS], "Search for heavy resonances decaying into a vector boson and a Higgs boson in final states with charged leptons, neutrinos and b quarks at $\sqrt{s} = 13$ TeV," JHEP **11** (2018), 172 doi:10.1007/JHEP11(2018)172 [arXiv:1807.02826 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], "Study of the underlying event in top quark pair production in pp collisions at 13 TeV," Eur. Phys. J. C **79** (2019) no.2, 123 doi:10.1140/epjc/s10052-019-6620-z [arXiv:1807.02810 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], "Search for supersymmetry in events with a τ lepton pair and missing transverse momentum in proton-proton collisions at $\sqrt{s} = 13$ TeV," JHEP **11** (2018), 151 doi:10.1007/JHEP11(2018)151 [arXiv:1807.02048 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], "Measurement of differential cross sections for inclusive isolated-photon and photon+jets production in proton-proton collisions at $\sqrt{s} = 13$ TeV," Eur. Phys. J. C **79** (2019) no.1, 20 doi:10.1140/epjc/s10052-018-6482-9 [arXiv:1807.00782 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], "Measurement of charged particle spectra in minimum-bias events from proton-proton collisions at $\sqrt{s} = 13$ TeV," Eur. Phys. J. C **78** (2018) no.9, 697 doi:10.1140/epjc/s10052-018-6144-y [arXiv:1806.11245 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], "Search for heavy Majorana neutrinos in same-sign dilepton channels in proton-proton collisions at $\sqrt{s} = 13$ TeV," JHEP **01** (2019), 122 doi:10.1007/JHEP01(2019)122 [arXiv:1806.10905 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], "Measurement of differential cross sections for Z boson pair production in association with jets at $\sqrt{s} = 8$ and 13 TeV," Phys. Lett. B **789** (2019), 19-44 doi:10.1016/j.physletb.2018.11.007 [arXiv:1806.11073 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], "Search for the decay of a Higgs boson in the $\ell\ell\gamma$ channel in proton-proton collisions at $\sqrt{s} = 13$ TeV," JHEP **11** (2018), 152 doi:10.1007/JHEP11(2018)152 [arXiv:1806.05996 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], "Search for supersymmetric partners of electrons and muons in proton-proton collisions at $\sqrt{s} = 13$ TeV," Phys. Lett. B **790** (2019), 140-166 doi:10.1016/j.physletb.2019.01.005 [arXiv:1806.05264 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], "Measurements of properties of the Higgs boson decaying to a W boson pair in pp collisions at $\sqrt{s} = 13$ TeV," Phys. Lett. B **791** (2019), 96 doi:10.1016/j.physletb.2018.12.073 [arXiv:1806.05246 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], "Search for dark matter produced in association with a Higgs boson

decaying to $\gamma\gamma$ or $\tau^+\tau^-$ at $\sqrt{s} = 13$ TeV," JHEP **09** (2018), 046 doi:10.1007/JHEP09(2018)046 [arXiv:1806.04771 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Observation of the $Z \rightarrow \psi\ell^+\ell^-$ decay in pp collisions at $\sqrt{s} = 13$ TeV," Phys. Rev. Lett. **121** (2018) no.14, 141801 doi:10.1103/PhysRevLett.121.141801 [arXiv:1806.04213 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Search for resonant pair production of Higgs bosons decaying to bottom quark-antiquark pairs in proton-proton collisions at 13 TeV," JHEP **08** (2018), 152 doi:10.1007/JHEP08(2018)152 [arXiv:1806.03548 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Search for a singly produced third-generation scalar leptoquark decaying to a τ lepton and a bottom quark in proton-proton collisions at $\sqrt{s} = 13$ TeV," JHEP **07** (2018), 115 doi:10.1007/JHEP07(2018)115 [arXiv:1806.03472 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Search for pair-produced resonances each decaying into at least four quarks in proton-proton collisions at $\sqrt{s} = 13$ TeV," Phys. Rev. Lett. **121** (2018) no.14, 141802 doi:10.1103/PhysRevLett.121.141802 [arXiv:1806.01058 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Search for narrow and broad dijet resonances in proton-proton collisions at $\sqrt{s} = 13$ TeV and constraints on dark matter mediators and other new particles," JHEP **08** (2018), 130 doi:10.1007/JHEP08(2018)130 [arXiv:1806.00843 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Measurement of the weak mixing angle using the forward-backward asymmetry of Drell-Yan events in pp collisions at 8 TeV," Eur. Phys. J. C **78** (2018) no.9, 701 doi:10.1140/epjc/s10052-018-6148-7 [arXiv:1806.00863 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Angular analysis of the decay $B^+ \rightarrow K^+\mu^+\mu^-$ in proton-proton collisions at $\sqrt{s} = 8$ TeV," Phys. Rev. D **98** (2018) no.11, 112011 doi:10.1103/PhysRevD.98.112011 [arXiv:1806.00636 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Search for Higgs boson pair production in the $\gamma\gamma b\bar{b}$ final state in pp collisions at $\sqrt{s} = 13$ TeV," Phys. Lett. B **788** (2019), 7-36 doi:10.1016/j.physletb.2018.10.056 [arXiv:1806.00408 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Search for beyond the standard model Higgs bosons decaying into a $b\bar{b}$ pair in pp collisions at $\sqrt{s} = 13$ TeV," JHEP **08** (2018), 113 doi:10.1007/JHEP08(2018)113 [arXiv:1805.12191 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Observation of the $\chi_{b1}(3P)$ and $\chi_{b2}(3P)$ and measurement of their masses," Phys. Rev. Lett. **121** (2018), 092002 doi:10.1103/PhysRevLett.121.092002 [arXiv:1805.11192 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Constraints on models of scalar and vector leptoquarks decaying to a quark and a neutrino at $\sqrt{s} = 13$ TeV," Phys. Rev. D **98** (2018) no.3, 032005 doi:10.1103/PhysRevD.98.032005 [arXiv:1805.10228 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Search for an exotic decay of the Higgs boson to a pair of light pseudoscalars in the final state with two b quarks and two τ leptons in proton-proton collisions at $\sqrt{s} = 13$ TeV," Phys.

Lett. B **785** (2018), 462 doi:10.1016/j.physletb.2018.08.057 [arXiv:1805.10191 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Measurement of nuclear modification factors of $\Upsilon(1S)$, $\Upsilon(2S)$, and $\Upsilon(3S)$ mesons in PbPb collisions at $\sqrt{s_{NN}} = 5.02$ TeV,” Phys. Lett. B **790** (2019), 270-293 doi:10.1016/j.physletb.2019.01.006 [arXiv:1805.09215 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Measurement of the production cross section for single top quarks in association with W bosons in proton-proton collisions at $\sqrt{s} = 13$ TeV,” JHEP **10** (2018), 117 doi:10.1007/JHEP10(2018)117 [arXiv:1805.07399 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Search for top squarks decaying via four-body or chargino-mediated modes in single-lepton final states in proton-proton collisions at $\sqrt{s} = 13$ TeV,” JHEP **09** (2018), 065 doi:10.1007/JHEP09(2018)065 [arXiv:1805.05784 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Search for black holes and sphalerons in high-multiplicity final states in proton-proton collisions at $\sqrt{s} = 13$ TeV,” JHEP **11** (2018), 042 doi:10.1007/JHEP11(2018)042 [arXiv:1805.06013 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Measurement of the groomed jet mass in PbPb and pp collisions at $\sqrt{s_{NN}} = 5.02$ TeV,” JHEP **10** (2018), 161 doi:10.1007/JHEP10(2018)161 [arXiv:1805.05145 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Search for an exotic decay of the Higgs boson to a pair of light pseudoscalars in the final state of two muons and two τ leptons in proton-proton collisions at $\sqrt{s} = 13$ TeV,” JHEP **11** (2018), 018 doi:10.1007/JHEP11(2018)018 [arXiv:1805.04865 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Search for vector-like T and B quark pairs in final states with leptons at $\sqrt{s} = 13$ TeV,” JHEP **08** (2018), 177 doi:10.1007/JHEP08(2018)177 [arXiv:1805.04758 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Constraining gluon distributions in nuclei using dijets in proton-proton and proton-lead collisions at $\sqrt{s_{NN}} = 5.02$ TeV,” Phys. Rev. Lett. **121** (2018) no.6, 062002 doi:10.1103/PhysRevLett.121.062002 [arXiv:1805.04736 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Measurement of prompt $\psi(2S)$ production cross sections in proton-lead and proton-proton collisions at $\sqrt{s_{NN}} = 5.02$ TeV,” Phys. Lett. B **790** (2019), 509-532 doi:10.1016/j.physletb.2019.01.058 [arXiv:1805.02248 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Measurement of the top quark mass with lepton+jets final states using p p collisions at $\sqrt{s} = 13$ TeV,” Eur. Phys. J. C **78** (2018) no.11, 891 doi:10.1140/epjc/s10052-018-6332-9 [arXiv:1805.01428 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Elliptic flow of charm and strange hadrons in high-multiplicity pPb collisions at $\sqrt{s_{NN}} = 8.16$ TeV,” Phys. Rev. Lett. **121** (2018) no.8, 082301 doi:10.1103/PhysRevLett.121.082301 [arXiv:1804.09767 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Search for disappearing tracks as a signature of new long-lived particles in proton-proton collisions at $\sqrt{s} = 13$ TeV,” JHEP **08** (2018), 016 doi:10.1007/JHEP08(2018)016 [arXiv:1804.07321 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Measurement of differential cross sections for Z boson production

in association with jets in proton-proton collisions at $\sqrt{s} = 13$ TeV," *Eur. Phys. J. C* **78** (2018) no.11, 965 doi:10.1140/epjc/s10052-018-6373-0 [arXiv:1804.05252 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Performance of the CMS muon detector and muon reconstruction with proton-proton collisions at $\sqrt{s} = 13$ TeV," *JINST* **13** (2018) no.06, P06015 doi:10.1088/1748-0221/13/06/P06015 [arXiv:1804.04528 [physics.ins-det]].

A. M. Sirunyan *et al.* [CMS], "Search for $t\bar{t}H$ production in the $H \rightarrow b\bar{b}$ decay channel with leptonic $t\bar{t}$ decays in proton-proton collisions at $\sqrt{s} = 13$ TeV," *JHEP* **03** (2019), 026 doi:10.1007/JHEP03(2019)026 [arXiv:1804.03682 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Measurements of Higgs boson properties in the diphoton decay channel in proton-proton collisions at $\sqrt{s} = 13$ TeV," *JHEP* **11** (2018), 185 doi:10.1007/JHEP11(2018)185 [arXiv:1804.02716 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Observation of $t\bar{t}H$ production," *Phys. Rev. Lett.* **120** (2018) no.23, 231801 doi:10.1103/PhysRevLett.120.231801 [arXiv:1804.02610 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Search for a new scalar resonance decaying to a pair of Z bosons in proton-proton collisions at $\sqrt{s} = 13$ TeV," *JHEP* **06** (2018), 127 [erratum: *JHEP* **03** (2019), 128] doi:10.1007/JHEP06(2018)127 [arXiv:1804.01939 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Search for high-mass resonances in final states with a lepton and missing transverse momentum at $\sqrt{s} = 13$ TeV," *JHEP* **06** (2018), 128 doi:10.1007/JHEP06(2018)128 [arXiv:1803.11133 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Search for a heavy right-handed W boson and a heavy neutrino in events with two same-flavor leptons and two jets at $\sqrt{s} = 13$ TeV," *JHEP* **05** (2018), 148 doi:10.1007/JHEP05(2018)148 [arXiv:1803.11116 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Search for a heavy resonance decaying into a Z boson and a Z or W boson in $2\ell 2q$ final states at $\sqrt{s} = 13$ TeV," *JHEP* **09** (2018), 101 doi:10.1007/JHEP09(2018)101 [arXiv:1803.10093 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Measurement of differential cross sections for the production of top quark pairs and of additional jets in lepton+jets events from pp collisions at $\sqrt{s} = 13$ TeV," *Phys. Rev. D* **97** (2018) no.11, 112003 doi:10.1103/PhysRevD.97.112003 [arXiv:1803.08856 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Search for new physics in dijet angular distributions using proton-proton collisions at $\sqrt{s} = 13$ TeV and constraints on dark matter and other models," *Eur. Phys. J. C* **78** (2018) no.9, 789 doi:10.1140/epjc/s10052-018-6242-x [arXiv:1803.08030 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Search for $t\bar{t}H$ production in the all-jet final state in proton-proton collisions at $\sqrt{s} = 13$ TeV," *JHEP* **06** (2018), 101 doi:10.1007/JHEP06(2018)101 [arXiv:1803.06986 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Search for additional neutral MSSM Higgs bosons in the $\tau\tau$ final state in proton-proton collisions at $\sqrt{s} = 13$ TeV," *JHEP* **09** (2018), 007 doi:10.1007/JHEP09(2018)007 [arXiv:1803.06553 [hep-ex]].

- A. M. Sirunyan *et al.* [CMS], “Search for high-mass resonances in dilepton final states in proton-proton collisions at $\sqrt{s} = 13$ TeV,” JHEP **06** (2018), 120 doi:10.1007/JHEP06(2018)120 [arXiv:1803.06292 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Evidence for associated production of a Higgs boson with a top quark pair in final states with electrons, muons, and hadronically decaying τ leptons at $\sqrt{s} = 13$ TeV,” JHEP **08** (2018), 066 doi:10.1007/JHEP08(2018)066 [arXiv:1803.05485 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS and TOTEM], “Observation of proton-tagged, central (semi)exclusive production of high-mass lepton pairs in pp collisions at 13 TeV with the CMS-TOTEM precision proton spectrometer,” JHEP **07** (2018), 153 doi:10.1007/JHEP07(2018)153 [arXiv:1803.04496 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Measurements of differential cross sections of top quark pair production as a function of kinematic event variables in proton-proton collisions at $\sqrt{s} = 13$ TeV,” JHEP **06** (2018), 002 doi:10.1007/JHEP06(2018)002 [arXiv:1803.03991 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Search for a heavy resonance decaying into a Z boson and a vector boson in the $\nu\bar{\nu}q\bar{q}$ final state,” JHEP **07** (2018), 075 doi:10.1007/JHEP07(2018)075 [arXiv:1803.03838 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Search for third-generation scalar leptoquarks decaying to a top quark and a τ lepton at $\sqrt{s} = 13$ TeV,” Eur. Phys. J. C **78** (2018), 707 doi:10.1140/epjc/s10052-018-6143-z [arXiv:1803.02864 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Jet properties in PbPb and pp collisions at $\sqrt{s_{NN}} = 5.02$ TeV,” JHEP **05** (2018), 006 doi:10.1007/JHEP05(2018)006 [arXiv:1803.00042 [nucl-ex]].
- A. M. Sirunyan *et al.* [CMS], “Search for a heavy resonance decaying to a pair of vector bosons in the lepton plus merged jet final state at $\sqrt{s} = 13$ TeV,” JHEP **05** (2018), 088 doi:10.1007/JHEP05(2018)088 [arXiv:1802.09407 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Search for narrow resonances in the b-tagged dijet mass spectrum in proton-proton collisions at $\sqrt{s} = 8$ TeV,” Phys. Rev. Lett. **120** (2018) no.20, 201801 doi:10.1103/PhysRevLett.120.201801 [arXiv:1802.06149 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Measurement of the Λ_b polarization and angular parameters in $\Lambda_b \rightarrow J/\psi \Lambda$ decays from pp collisions at $\sqrt{s} = 7$ and 8 TeV,” Phys. Rev. D **97** (2018) no.7, 072010 doi:10.1103/PhysRevD.97.072010 [arXiv:1802.04867 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Search for heavy neutral leptons in events with three charged leptons in proton-proton collisions at $\sqrt{s} = 13$ TeV,” Phys. Rev. Lett. **120** (2018) no.22, 221801 doi:10.1103/PhysRevLett.120.221801 [arXiv:1802.02965 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Measurement of the inelastic proton-proton cross section at $\sqrt{s} = 13$ TeV,” JHEP **07** (2018), 161 doi:10.1007/JHEP07(2018)161 [arXiv:1802.02613 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Search for natural and split supersymmetry in proton-proton collisions at $\sqrt{s} = 13$ TeV in final states with jets and missing transverse momentum,” JHEP **05** (2018), 025 doi:10.1007/JHEP05(2018)025 [arXiv:1802.02110 [hep-ex]].

- A. M. Sirunyan *et al.* [CMS], "Search for single production of vector-like quarks decaying to a b quark and a Higgs boson," JHEP **06** (2018), 031 doi:10.1007/JHEP06(2018)031 [arXiv:1802.01486 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], "Search for lepton-flavor violating decays of heavy resonances and quantum black holes to $e\mu$ final states in proton-proton collisions at $\sqrt{s} = 13$ TeV," JHEP **04** (2018), 073 doi:10.1007/JHEP04(2018)073 [arXiv:1802.01122 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], "Comparing transverse momentum balance of b jet pairs in pp and PbPb collisions at $\sqrt{s_{NN}} = 5.02$ TeV," JHEP **03** (2018), 181 doi:10.1007/JHEP03(2018)181 [arXiv:1802.00707 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], "Search for dark matter in events with energetic, hadronically decaying top quarks and missing transverse momentum at $\sqrt{s} = 13$ TeV," JHEP **06** (2018), 027 doi:10.1007/JHEP06(2018)027 [arXiv:1801.08427 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], "Observation of Medium-Induced Modifications of Jet Fragmentation in Pb-Pb Collisions at $\sqrt{s_{NN}} = 5.02$ TeV Using Isolated Photon-Tagged Jets," Phys. Rev. Lett. **121** (2018) no.24, 242301 doi:10.1103/PhysRevLett.121.242301 [arXiv:1801.04895 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], "Combined search for electroweak production of charginos and neutralinos in proton-proton collisions at $\sqrt{s} = 13$ TeV," JHEP **03** (2018), 160 doi:10.1007/JHEP03(2018)160 [arXiv:1801.03957 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], "Measurement of the $Z\gamma^* \rightarrow \tau\tau$ cross section in pp collisions at $\sqrt{s} = 13$ TeV and validation of τ lepton analysis techniques," Eur. Phys. J. C **78** (2018) no.9, 708 doi:10.1140/epjc/s10052-018-6146-9 [arXiv:1801.03535 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], "Search for new physics in events with two soft oppositely charged leptons and missing transverse momentum in proton-proton collisions at $\sqrt{s} = 13$ TeV," Phys. Lett. B **782** (2018), 440-467 doi:10.1016/j.physletb.2018.05.062 [arXiv:1801.01846 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], "Search for decays of stopped exotic long-lived particles produced in proton-proton collisions at $\sqrt{s} = 13$ TeV," JHEP **05** (2018), 127 doi:10.1007/JHEP05(2018)127 [arXiv:1801.00359 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], "Electroweak production of two jets in association with a Z boson in proton-proton collisions at $\sqrt{s} = 13$ TeV," Eur. Phys. J. C **78** (2018) no.7, 589 doi:10.1140/epjc/s10052-018-6049-9 [arXiv:1712.09814 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], "Search for R -parity violating supersymmetry in pp collisions at $\sqrt{s} = 13$ TeV using b jets in a final state with a single lepton, many jets, and high sum of large-radius jet masses," Phys. Lett. B **783** (2018), 114-139 doi:10.1016/j.physletb.2018.06.028 [arXiv:1712.08920 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], "Measurement of prompt and nonprompt charmonium suppression in PbPb collisions at 5.02 TeV," Eur. Phys. J. C **78** (2018) no.6, 509 doi:10.1140/epjc/s10052-018-5950-6 [arXiv:1712.08959 [nucl-ex]].

- A. M. Sirunyan *et al.* [CMS], "Search for Physics Beyond the Standard Model in Events with High-Momentum Higgs Bosons and Missing Transverse Momentum in Proton-Proton Collisions at 13 TeV," *Phys. Rev. Lett.* **120** (2018) no.24, 241801 doi:10.1103/PhysRevLett.120.241801 [arXiv:1712.08501 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], "Bose-Einstein correlations in pp , pPb , and $PbPb$ collisions at $\sqrt{s_{NN}} = 0.9-7$ TeV," *Phys. Rev. C* **97** (2018) no.6, 064912 doi:10.1103/PhysRevC.97.064912 [arXiv:1712.07198 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], "Search for lepton flavour violating decays of the Higgs boson to $\mu\tau$ and $e\tau$ in proton-proton collisions at $\sqrt{s} = 13$ TeV," *JHEP* **06** (2018), 001 doi:10.1007/JHEP06(2018)001 [arXiv:1712.07173 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], "Identification of heavy-flavour jets with the CMS detector in pp collisions at 13 TeV," *JINST* **13** (2018) no.05, P05011 doi:10.1088/1748-0221/13/05/P05011 [arXiv:1712.07158 [physics.ins-det]].
- A. M. Sirunyan *et al.* [CMS], "Search for the $X(5568)$ state decaying into $B_s^0\pi^\pm$ in proton-proton collisions at $\sqrt{s} = 8$ TeV," *Phys. Rev. Lett.* **120** (2018) no.20, 202005 doi:10.1103/PhysRevLett.120.202005 [arXiv:1712.06144 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], "Azimuthal correlations for inclusive 2-jet, 3-jet, and 4-jet events in pp collisions at $\sqrt{s} = 13$ TeV," *Eur. Phys. J. C* **78** (2018) no.7, 566 doi:10.1140/epjc/s10052-018-6033-4 [arXiv:1712.05471 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], "Search for $Z\gamma$ resonances using leptonic and hadronic final states in proton-proton collisions at $\sqrt{s} = 13$ TeV," *JHEP* **09** (2018), 148 doi:10.1007/JHEP09(2018)148 [arXiv:1712.03143 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], "Measurement of the associated production of a single top quark and a Z boson in pp collisions at $\sqrt{s} = 13$ TeV," *Phys. Lett. B* **779** (2018), 358-384 doi:10.1016/j.physletb.2018.02.025 [arXiv:1712.02825 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], "Search for the flavor-changing neutral current interactions of the top quark and the Higgs boson which decays into a pair of b quarks at $\sqrt{s} = 13$ TeV," *JHEP* **06** (2018), 102 doi:10.1007/JHEP06(2018)102 [arXiv:1712.02399 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], "Constraints on the double-parton scattering cross section from same-sign W boson pair production in proton-proton collisions at $\sqrt{s} = 8$ TeV," *JHEP* **02** (2018), 032 doi:10.1007/JHEP02(2018)032 [arXiv:1712.02280 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], "Search for new physics in final states with an energetic jet or a hadronically decaying W or Z boson and transverse momentum imbalance at $\sqrt{s} = 13$ TeV," *Phys. Rev. D* **97** (2018) no.9, 092005 doi:10.1103/PhysRevD.97.092005 [arXiv:1712.02345 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], "Search for pair production of excited top quarks in the lepton + jets final state," *Phys. Lett. B* **778** (2018), 349-370 doi:10.1016/j.physletb.2018.01.049 [arXiv:1711.10949 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], "Study of jet quenching with isolated-photon+jet correlations in $PbPb$ and pp collisions at $\sqrt{s_{NN}} = 5.02$ TeV," *Phys. Lett. B* **785** (2018), 14-39 doi:10.1016/j.physletb.2018.07.061

[arXiv:1711.09738 [nucl-ex]].

A. M. Sirunyan *et al.* [CMS], "Search for new long-lived particles at $\sqrt{s} = 13$ TeV," Phys. Lett. B **780** (2018), 432-454 doi:10.1016/j.physletb.2018.03.019 [arXiv:1711.09120 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Search for gauge-mediated supersymmetry in events with at least one photon and missing transverse momentum in pp collisions at $\sqrt{s} = 13$ TeV," Phys. Lett. B **780** (2018), 118-143 doi:10.1016/j.physletb.2018.02.045 [arXiv:1711.08008 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Non-Gaussian elliptic-flow fluctuations in PbPb collisions at $\sqrt{s_{NN}} = 5.02$ TeV," Phys. Lett. B **789** (2019), 643-665 doi:10.1016/j.physletb.2018.11.063 [arXiv:1711.05594 [nucl-ex]].

A. M. Sirunyan *et al.* [CMS], "Search for excited quarks of light and heavy flavor in γ + jet final states in proton-proton collisions at $\sqrt{s} = 13$ TeV," Phys. Lett. B **781** (2018), 390-411 doi:10.1016/j.physletb.2018.04.007 [arXiv:1711.04652 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Measurement of the underlying event activity in inclusive Z boson production in proton-proton collisions at $\sqrt{s} = 13$ TeV," JHEP **07** (2018), 032 doi:10.1007/JHEP07(2018)032 [arXiv:1711.04299 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Search for ZZ resonances in the $2\ell 2\nu$ final state in proton-proton collisions at 13 TeV," JHEP **03** (2018), 003 doi:10.1007/JHEP03(2018)003 [arXiv:1711.04370 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Measurement of the inclusive $t\bar{t}$ cross section in pp collisions at $\sqrt{s} = 5.02$ TeV using final states with at least one charged lepton," JHEP **03** (2018), 115 doi:10.1007/JHEP03(2018)115 [arXiv:1711.03143 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Measurement of the cross section for top quark pair production in association with a W or Z boson in proton-proton collisions at $\sqrt{s} = 13$ TeV," JHEP **08** (2018), 011 doi:10.1007/JHEP08(2018)011 [arXiv:1711.02547 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Measurement of associated Z + charm production in proton-proton collisions at $\sqrt{s} = 8$ TeV," Eur. Phys. J. C **78** (2018) no.4, 287 doi:10.1140/epjc/s10052-018-5752-x [arXiv:1711.02143 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Search for top squarks and dark matter particles in opposite-charge dilepton final states at $\sqrt{s} = 13$ TeV," Phys. Rev. D **97** (2018) no.3, 032009 doi:10.1103/PhysRevD.97.032009 [arXiv:1711.00752 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Search for new physics in events with a leptonically decaying Z boson and a large transverse momentum imbalance in proton-proton collisions at $\sqrt{s} = 13$ TeV," Eur. Phys. J. C **78** (2018) no.4, 291 doi:10.1140/epjc/s10052-018-5740-1 [arXiv:1711.00431 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Measurement of quarkonium production cross sections in pp collisions at $\sqrt{s} = 13$ TeV," Phys. Lett. B **780** (2018), 251-272 doi:10.1016/j.physletb.2018.02.033 [arXiv:1710.11002 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Search for supersymmetry in proton-proton collisions at 13 TeV using identified top quarks," Phys. Rev. D **97** (2018) no.1, 012007 doi:10.1103/PhysRevD.97.012007

[arXiv:1710.11188 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Search for standard model production of four top quarks with same-sign and multilepton final states in proton-proton collisions at $\sqrt{s} = 13$ TeV," *Eur. Phys. J. C* **78** (2018) no.2, 140 doi:10.1140/epjc/s10052-018-5607-5 [arXiv:1710.10614 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Pseudorapidity distributions of charged hadrons in proton-lead collisions at $\sqrt{s_{NN}} = 5.02$ and 8.16 TeV," *JHEP* **01** (2018), 045 doi:10.1007/JHEP01(2018)045 [arXiv:1710.09355 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Search for supersymmetry in events with at least three electrons or muons, jets, and missing transverse momentum in proton-proton collisions at $\sqrt{s} = 13$ TeV," *JHEP* **02** (2018), 067 doi:10.1007/JHEP02(2018)067 [arXiv:1710.09154 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Measurement of b hadron lifetimes in pp collisions at $\sqrt{s} = 8$ TeV," *Eur. Phys. J. C* **78** (2018) no.6, 457 [erratum: *Eur. Phys. J. C* **78** (2018) no.7, 561] doi:10.1140/epjc/s10052-018-5929-3 [arXiv:1710.08949 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Measurement of differential cross sections in the kinematic angular variable ϕ^* for inclusive Z boson production in pp collisions at $\sqrt{s} = 8$ TeV," *JHEP* **03** (2018), 172 doi:10.1007/JHEP03(2018)172 [arXiv:1710.07955 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Pseudorapidity and transverse momentum dependence of flow harmonics in pPb and PbPb collisions," *Phys. Rev. C* **98** (2018) no.4, 044902 doi:10.1103/PhysRevC.98.044902 [arXiv:1710.07864 [nucl-ex]].

A. M. Sirunyan *et al.* [CMS], "Search for a massive resonance decaying to a pair of Higgs bosons in the four b quark final state in proton-proton collisions at $\sqrt{s} = 13$ TeV," *Phys. Lett. B* **781** (2018), 244-269 doi:10.1016/j.physletb.2018.03.084 [arXiv:1710.04960 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Measurement of angular parameters from the decay $B^0 \rightarrow K^{*0} \mu^+ \mu^-$ in proton-proton collisions at $\sqrt{s} = 8$ TeV," *Phys. Lett. B* **781** (2018), 517-541 doi:10.1016/j.physletb.2018.04.030 [arXiv:1710.02846 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Study of dijet events with a large rapidity gap between the two leading jets in pp collisions at $\sqrt{s} = 7$ TeV," *Eur. Phys. J. C* **78** (2018) no.3, 242 [erratum: *Eur. Phys. J. C* **80** (2020) no.5, 441] doi:10.1140/epjc/s10052-018-5691-6 [arXiv:1710.02586 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Search for pair production of vector-like quarks in the $bW\bar{b}W$ channel from proton-proton collisions at $\sqrt{s} = 13$ TeV," *Phys. Lett. B* **779** (2018), 82-106 doi:10.1016/j.physletb.2018.01.077 [arXiv:1710.01539 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Search for low mass vector resonances decaying into quark-antiquark pairs in proton-proton collisions at $\sqrt{s} = 13$ TeV," *JHEP* **01** (2018), 097 doi:10.1007/JHEP01(2018)097 [arXiv:1710.00159 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Search for supersymmetry in events with one lepton and multiple jets exploiting the angular correlation between the lepton and the missing transverse momentum in proton-proton collisions at $\sqrt{s} = 13$ TeV," *Phys. Lett. B* **780** (2018), 384-409 doi:10.1016/j.physletb.2018.03.028

[arXiv:1709.09814 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Search for new phenomena in final states with two opposite-charge, same-flavor leptons, jets, and missing transverse momentum in pp collisions at $\sqrt{s} = 13$ TeV,” JHEP **03** (2018), 076 doi:10.1007/s13130-018-7845-2 [arXiv:1709.08908 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Observation of Correlated Azimuthal Anisotropy Fourier Harmonics in pp and $p+Pb$ Collisions at the LHC,” Phys. Rev. Lett. **120** (2018) no.9, 092301 doi:10.1103/PhysRevLett.120.092301 [arXiv:1709.09189 [nucl-ex]].

A. M. Sirunyan *et al.* [CMS], “Measurements of the $pp \rightarrow ZZ$ production cross section and the $Z \rightarrow 4\ell$ branching fraction, and constraints on anomalous triple gauge couplings at $\sqrt{s} = 13$ TeV,” Eur. Phys. J. C **78** (2018), 165 [erratum: Eur. Phys. J. C **78** (2018) no.6, 515] doi:10.1140/epjc/s10052-018-5567-9 [arXiv:1709.08601 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Evidence for the Higgs boson decay to a bottom quark–antiquark pair,” Phys. Lett. B **780** (2018), 501-532 doi:10.1016/j.physletb.2018.02.050 [arXiv:1709.07497 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Observation of top quark production in proton-nucleus collisions,” Phys. Rev. Lett. **119** (2017) no.24, 242001 doi:10.1103/PhysRevLett.119.242001 [arXiv:1709.07411 [nucl-ex]].

A. M. Sirunyan *et al.* [CMS], “Observation of electroweak production of same-sign W boson pairs in the two jet and two same-sign lepton final state in proton-proton collisions at $\sqrt{s} = 13$ TeV,” Phys. Rev. Lett. **120** (2018) no.8, 081801 doi:10.1103/PhysRevLett.120.081801 [arXiv:1709.05822 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Inclusive search for a highly boosted Higgs boson decaying to a bottom quark-antiquark pair,” Phys. Rev. Lett. **120** (2018) no.7, 071802 doi:10.1103/PhysRevLett.120.071802 [arXiv:1709.05543 [hep-ex]].

M. Aaboud *et al.* [ATLAS and CMS], “Combination of inclusive and differential $t\bar{t}$ charge asymmetry measurements using ATLAS and CMS data at $\sqrt{s} = 7$ and 8 TeV,” JHEP **04** (2018), 033 doi:10.1007/JHEP04(2018)033 [arXiv:1709.05327 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Search for electroweak production of charginos and neutralinos in multilepton final states in proton-proton collisions at $\sqrt{s} = 13$ TeV,” JHEP **03** (2018), 166 doi:10.1007/JHEP03(2018)166 [arXiv:1709.05406 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Search for Higgsino pair production in pp collisions at $\sqrt{s} = 13$ TeV in final states with large missing transverse momentum and two Higgs bosons decaying via $H \rightarrow b\bar{b}$,” Phys. Rev. D **97** (2018) no.3, 032007 doi:10.1103/PhysRevD.97.032007 [arXiv:1709.04896 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Search for supersymmetry with Higgs boson to diphoton decays using the razor variables at $\sqrt{s} = 13$ TeV,” Phys. Lett. B **779** (2018), 166-190 doi:10.1016/j.physletb.2017.12.069 [arXiv:1709.00384 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Measurement of the Splitting Function in pp and Pb-Pb Collisions at $\sqrt{s_{NN}} = 5.02$ TeV,” Phys. Rev. Lett. **120** (2018) no.14, 142302 doi:10.1103/PhysRevLett.120.142302 [arXiv:1708.09429 [nucl-ex]].

- A. M. Sirunyan *et al.* [CMS], “Probing the chiral magnetic wave in pPb and PbPb collisions at $\sqrt{s_{NN}} = 5.02\text{TeV}$ using charge-dependent azimuthal anisotropies,” *Phys. Rev. C* **100** (2019) no.6, 064908 doi:10.1103/PhysRevC.100.064908 [arXiv:1708.08901 [nucl-ex]].
- A. M. Sirunyan *et al.* [CMS], “Search for heavy resonances decaying to a top quark and a bottom quark in the lepton+jets final state in proton–proton collisions at 13 TeV,” *Phys. Lett. B* **777** (2018), 39-63 doi:10.1016/j.physletb.2017.12.006 [arXiv:1708.08539 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Search for Evidence of the Type-III Seesaw Mechanism in Multilepton Final States in Proton-Proton Collisions at $\sqrt{s} = 13$ TeV,” *Phys. Rev. Lett.* **119** (2017) no.22, 221802 doi:10.1103/PhysRevLett.119.221802 [arXiv:1708.07962 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Measurement of normalized differential $t\bar{t}$ cross sections in the dilepton channel from pp collisions at $\sqrt{s} = 13$ TeV,” *JHEP* **04** (2018), 060 doi:10.1007/JHEP04(2018)060 [arXiv:1708.07638 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Principal-component analysis of two-particle azimuthal correlations in PbPb and pPb collisions at CMS,” *Phys. Rev. C* **96** (2017) no.6, 064902 doi:10.1103/PhysRevC.96.064902 [arXiv:1708.07113 [nucl-ex]].
- W. Adam *et al.* [Tracker Group], “Characterisation of irradiated thin silicon sensors for the CMS phase II pixel upgrade,” *Eur. Phys. J. C* **77** (2017) no.8, 567 doi:10.1140/epjc/s10052-017-5115-z
- A. M. Sirunyan *et al.* [CMS], “Search for massive resonances decaying into WW , WZ , ZZ , qW , and qZ with dijet final states at $\sqrt{s} = 13$ TeV,” *Phys. Rev. D* **97** (2018) no.7, 072006 doi:10.1103/PhysRevD.97.072006 [arXiv:1708.05379 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Nuclear modification factor of D^0 mesons in PbPb collisions at $\sqrt{s_{NN}} = 5.02$ TeV,” *Phys. Lett. B* **782** (2018), 474-496 doi:10.1016/j.physletb.2018.05.074 [arXiv:1708.04962 [nucl-ex]].
- A. M. Sirunyan *et al.* [CMS], “Search for resonant and nonresonant Higgs boson pair production in the $b\bar{b}l\nu l\nu$ final state in proton-proton collisions at $\sqrt{s} = 13$ TeV,” *JHEP* **01** (2018), 054 doi:10.1007/JHEP01(2018)054 [arXiv:1708.04188 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Measurement of prompt D^0 meson azimuthal anisotropy in Pb-Pb collisions at $\sqrt{s_{NN}} = 5.02$ TeV,” *Phys. Rev. Lett.* **120** (2018) no.20, 202301 doi:10.1103/PhysRevLett.120.202301 [arXiv:1708.03497 [nucl-ex]].
- A. M. Sirunyan *et al.* [CMS], “Measurement of vector boson scattering and constraints on anomalous quartic couplings from events with four leptons and two jets in proton–proton collisions at $\sqrt{s} = 13$ TeV,” *Phys. Lett. B* **774** (2017), 682-705 doi:10.1016/j.physletb.2017.10.020 [arXiv:1708.02812 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Search for vectorlike light-flavor quark partners in proton-proton collisions at $\sqrt{s} = 8$ TeV,” *Phys. Rev. D* **97** (2018), 072008 doi:10.1103/PhysRevD.97.072008 [arXiv:1708.02510 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Constraints on the chiral magnetic effect using charge-dependent azimuthal correlations in pPb and PbPb collisions at the CERN Large Hadron Collider,” *Phys. Rev. C* **97** (2018) no.4, 044912 doi:10.1103/PhysRevC.97.044912 [arXiv:1708.01602 [nucl-ex]].

- A. M. Sirunyan *et al.* [CMS], "Search for single production of a vector-like T quark decaying to a Z boson and a top quark in proton-proton collisions at $\sqrt{s} = 13$ TeV," *Phys. Lett. B* **781** (2018), 574-600 doi:10.1016/j.physletb.2018.04.036 [arXiv:1708.01062 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], "Observation of the Higgs boson decay to a pair of τ leptons with the CMS detector," *Phys. Lett. B* **779** (2018), 283-316 doi:10.1016/j.physletb.2018.02.004 [arXiv:1708.00373 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], "Search for a light pseudoscalar Higgs boson produced in association with bottom quarks in pp collisions at $\sqrt{s} = 8$ TeV," *JHEP* **11** (2017), 010 doi:10.1007/JHEP11(2017)010 [arXiv:1707.07283 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], "Search for the pair production of third-generation squarks with two-body decays to a bottom or charm quark and a neutralino in proton-proton collisions at $\sqrt{s} = 13$ TeV," *Phys. Lett. B* **778** (2018), 263-291 doi:10.1016/j.physletb.2018.01.012 [arXiv:1707.07274 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], "Measurement of the differential cross sections for the associated production of a W boson and jets in proton-proton collisions at $\sqrt{s} = 13$ TeV," *Phys. Rev. D* **96** (2017) no.7, 072005 doi:10.1103/PhysRevD.96.072005 [arXiv:1707.05979 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], "Search for supersymmetry in events with at least one photon, missing transverse momentum, and large transverse event activity in proton-proton collisions at $\sqrt{s} = 13$ TeV," *JHEP* **12** (2017), 142 doi:10.1007/JHEP12(2017)142 [arXiv:1707.06193 [hep-ex]].
- R. Gonzalez Suarez, "Recent CMS results in top and Higgs physics," *Mod. Phys. Lett. A* **32** (2017) no.29, 1730026 doi:10.1142/S0217732317300269 [arXiv:1707.05054 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], "Search for natural supersymmetry in events with top quark pairs and photons in pp collisions at $\sqrt{s} = 8$ TeV," *JHEP* **03** (2018), 167 doi:10.1007/JHEP03(2018)167 [arXiv:1707.03325 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], "Search for direct production of supersymmetric partners of the top quark in the all-jets final state in proton-proton collisions at $\sqrt{s} = 13$ TeV," *JHEP* **10** (2017), 005 doi:10.1007/JHEP10(2017)005 [arXiv:1707.03316 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], "Search for Higgs boson pair production in events with two bottom quarks and two tau leptons in proton-proton collisions at $\sqrt{s} = 13$ TeV," *Phys. Lett. B* **778** (2018), 101-127 doi:10.1016/j.physletb.2018.01.001 [arXiv:1707.02909 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], "Search for heavy resonances that decay into a vector boson and a Higgs boson in hadronic final states at $\sqrt{s} = 13$ TeV," *Eur. Phys. J. C* **77** (2017) no.9, 636 doi:10.1140/epjc/s10052-017-5192-z [arXiv:1707.01303 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], "Constraints on anomalous Higgs boson couplings using production and decay information in the four-lepton final state," *Phys. Lett. B* **775** (2017), 1-24 doi:10.1016/j.physletb.2017.10.021 [arXiv:1707.00541 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], "Search for Higgs boson pair production in the $bb\tau\tau$ final state in proton-proton

collisions at $\sqrt{s} = 8$ TeV," Phys. Rev. D **96** (2017) no.7, 072004 doi:10.1103/PhysRevD.96.072004 [arXiv:1707.00350 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Measurement of charged pion, kaon, and proton production in proton-proton collisions at $\sqrt{s} = 13$ TeV," Phys. Rev. D **96** (2017) no.11, 112003 doi:10.1103/PhysRevD.96.112003 [arXiv:1706.10194 [hep-ex]].

K. Klein *et al.* [CMS], "The Phase-2 Upgrade of the CMS Tracker," CERN-LHCC-2017-009.

A. M. Sirunyan *et al.* [CMS], "Search for electroweak production of charginos and neutralinos in WH events in proton-proton collisions at $\sqrt{s} = 13$ TeV," JHEP **11** (2017), 029 doi:10.1007/JHEP11(2017)029 [arXiv:1706.09933 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Measurements of properties of the Higgs boson decaying into the four-lepton final state in pp collisions at $\sqrt{s} = 13$ TeV," JHEP **11** (2017), 047 doi:10.1007/JHEP11(2017)047 [arXiv:1706.09936 [hep-ex]].

W. Adam *et al.* [CMS], "P-Type Silicon Strip Sensors for the new CMS Tracker at HL-LHC," JINST **12** (2017) no.06, P06018 doi:10.1088/1748-0221/12/06/P06018

A. M. Sirunyan *et al.* [CMS], "Search for a heavy composite Majorana neutrino in the final state with two leptons and two quarks at $\sqrt{s} = 13$ TeV," Phys. Lett. B **775** (2017), 315-337 doi:10.1016/j.physletb.2017.11.001 [arXiv:1706.08578 [hep-ex]].

V. Khachatryan *et al.* [CMS], "Exclusive and semi-exclusive $\pi^+\pi^-$ production in proton-proton collisions at $\sqrt{s} = 7$ TeV," [arXiv:1706.08310 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Measurement of the semileptonic $t\bar{t} + \gamma$ production cross section in pp collisions at $\sqrt{s} = 8$ TeV," JHEP **10** (2017), 006 doi:10.1007/JHEP10(2017)006 [arXiv:1706.08128 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Measurements of jet charge with dijet events in pp collisions at $\sqrt{s} = 8$ TeV," JHEP **10** (2017), 131 doi:10.1007/JHEP10(2017)131 [arXiv:1706.05868 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Suppression of Excited Υ States Relative to the Ground State in Pb-Pb Collisions at $\sqrt{s_{NN}} = 5.02$ TeV," Phys. Rev. Lett. **120** (2018) no.14, 142301 doi:10.1103/PhysRevLett.120.142301 [arXiv:1706.05984 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Particle-flow reconstruction and global event description with the CMS detector," JINST **12** (2017) no.10, P10003 doi:10.1088/1748-0221/12/10/P10003 [arXiv:1706.04965 [physics.ins-det]].

A. M. Sirunyan *et al.* [CMS], "Search for top squark pair production in pp collisions at $\sqrt{s} = 13$ TeV using single lepton events," JHEP **10** (2017), 019 doi:10.1007/JHEP10(2017)019 [arXiv:1706.04402 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Searches for W' bosons decaying to a top quark and a bottom quark in proton-proton collisions at 13 TeV," JHEP **08** (2017), 029 doi:10.1007/JHEP08(2017)029 [arXiv:1706.04260 [hep-ex]].

- A. M. Sirunyan *et al.* [CMS], “Search for new physics in the monophoton final state in proton-proton collisions at $\sqrt{s} = 13$ TeV,” JHEP **10** (2017), 073 doi:10.1007/JHEP10(2017)073 [arXiv:1706.03794 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Search for pair production of vector-like T and B quarks in single-lepton final states using boosted jet substructure in proton-proton collisions at $\sqrt{s} = 13$ TeV,” JHEP **11** (2017), 085 doi:10.1007/JHEP11(2017)085 [arXiv:1706.03408 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Search for dark matter produced in association with heavy-flavor quark pairs in proton-proton collisions at $\sqrt{s} = 13$ TeV,” Eur. Phys. J. C **77** (2017) no.12, 845 doi:10.1140/epjc/s10052-017-5317-4 [arXiv:1706.02581 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Search for top quark partners with charge 5/3 in proton-proton collisions at $\sqrt{s} = 13$ TeV,” JHEP **08** (2017), 073 doi:10.1007/JHEP08(2017)073 [arXiv:1705.10967 [hep-ex]].
- M. Dragicevic, M. Friedl, J. Hrubec, H. Steininger, A. Gädda, J. Härkönen, T. Lampén, P. Luukka, T. Peltola and E. Tuominen, *et al.* “Test Beam Performance Measurements for the Phase I Upgrade of the CMS Pixel Detector,” JINST **12** (2017) no.05, P05022 doi:10.1088/1748-0221/12/05/P05022 [arXiv:1706.00222 [physics.ins-det]].
- A. M. Sirunyan *et al.* [CMS], “Search for Low Mass Vector Resonances Decaying to Quark-Antiquark Pairs in Proton-Proton Collisions at $\sqrt{s} = 13$ TeV,” Phys. Rev. Lett. **119** (2017) no.11, 111802 doi:10.1103/PhysRevLett.119.111802 [arXiv:1705.10532 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Measurements of $t\bar{t}$ cross sections in association with b jets and inclusive jets and their ratio using dilepton final states in pp collisions at $\sqrt{s} = 13$ TeV,” Phys. Lett. B **776** (2018), 355-378 doi:10.1016/j.physletb.2017.11.043 [arXiv:1705.10141 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Combination of searches for heavy resonances decaying to WW, WZ, ZZ, WH, and ZH boson pairs in proton-proton collisions at $\sqrt{s} = 8$ and 13 TeV,” Phys. Lett. B **774** (2017), 533-558 doi:10.1016/j.physletb.2017.09.083 [arXiv:1705.09171 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Measurement of the B^\pm Meson Nuclear Modification Factor in Pb-Pb Collisions at $\sqrt{s_{NN}} = 5.02$ TeV,” Phys. Rev. Lett. **119** (2017) no.15, 152301 doi:10.1103/PhysRevLett.119.152301 [arXiv:1705.04727 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Search for new phenomena with the M_{T2} variable in the all-hadronic final state produced in proton-proton collisions at $\sqrt{s} = 13$ TeV,” Eur. Phys. J. C **77** (2017) no.10, 710 doi:10.1140/epjc/s10052-017-5267-x [arXiv:1705.04650 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Search for Supersymmetry in pp Collisions at $\sqrt{s} = 13$ TeV in the Single-Lepton Final State Using the Sum of Masses of Large-Radius Jets,” Phys. Rev. Lett. **119** (2017) no.15, 151802 doi:10.1103/PhysRevLett.119.151802 [arXiv:1705.04673 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Search for Charged Higgs Bosons Produced via Vector Boson Fusion and Decaying into a Pair of W and Z Bosons Using pp Collisions at $\sqrt{s} = 13$ TeV,” Phys. Rev. Lett. **119** (2017) no.14, 141802 doi:10.1103/PhysRevLett.119.141802 [arXiv:1705.02942 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Measurement of the triple-differential dijet cross section in proton-

proton collisions at $\sqrt{s} = 8$ TeV and constraints on parton distribution functions," *Eur. Phys. J. C* **77** (2017) no.11, 746 doi:10.1140/epjc/s10052-017-5286-7 [arXiv:1705.02628 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Search for black holes in high-multiplicity final states in proton-proton collisions at $\sqrt{s} = 13$ TeV," *Phys. Lett. B* **774** (2017), 279-307 doi:10.1016/j.physletb.2017.09.053 [arXiv:1705.01403 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Search for supersymmetry in multijet events with missing transverse momentum in proton-proton collisions at 13 TeV," *Phys. Rev. D* **96** (2017) no.3, 032003 doi:10.1103/PhysRevD.96.032003 [arXiv:1704.07781 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Search for physics beyond the standard model in events with two leptons of same sign, missing transverse momentum, and jets in proton-proton collisions at $\sqrt{s} = 13$ TeV," *Eur. Phys. J. C* **77** (2017) no.9, 578 doi:10.1140/epjc/s10052-017-5079-z [arXiv:1704.07323 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Measurement of the top quark mass in the dileptonic $t\bar{t}$ decay channel using the mass observables $M_{b\ell}$, M_{T2} , and $M_{b\ell\nu}$ in pp collisions at $\sqrt{s} = 8$ TeV," *Phys. Rev. D* **96** (2017) no.3, 032002 doi:10.1103/PhysRevD.96.032002 [arXiv:1704.06142 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Search for $t\bar{t}$ resonances in highly boosted lepton+jets and fully hadronic final states in proton-proton collisions at $\sqrt{s} = 13$ TeV," *JHEP* **07** (2017), 001 doi:10.1007/JHEP07(2017)001 [arXiv:1704.03366 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Measurements of the $pp \rightarrow W\gamma\gamma$ and $pp \rightarrow Z\gamma\gamma$ cross sections and limits on anomalous quartic gauge couplings at $\sqrt{s} = 8$ TeV," *JHEP* **10** (2017), 072 doi:10.1007/JHEP10(2017)072 [arXiv:1704.00366 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Search for new physics with dijet angular distributions in proton-proton collisions at $\sqrt{s} = 13$ TeV," *JHEP* **07** (2017), 013 doi:10.1007/JHEP07(2017)013 [arXiv:1703.09986 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Measurement of the jet mass in highly boosted $t\bar{t}$ events from pp collisions at $\sqrt{s} = 8$ TeV," *Eur. Phys. J. C* **77** (2017) no.7, 467 doi:10.1140/epjc/s10052-017-5030-3 [arXiv:1703.06330 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Search for a heavy resonance decaying to a top quark and a vector-like top quark at $\sqrt{s} = 13$ TeV," *JHEP* **09** (2017), 053 doi:10.1007/JHEP09(2017)053 [arXiv:1703.06352 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Search for anomalous couplings in boosted $WW/WZ \rightarrow \ell\nu q\bar{q}$ production in proton-proton collisions at $\sqrt{s} = 8$ TeV," *Phys. Lett. B* **772** (2017), 21-42 doi:10.1016/j.physletb.2017.06.009 [arXiv:1703.06095 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Search for associated production of dark matter with a Higgs boson decaying to $b\bar{b}$ or $\gamma\gamma$ at $\sqrt{s} = 13$ TeV," *JHEP* **10** (2017), 180 doi:10.1007/JHEP10(2017)180 [arXiv:1703.05236 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Search for third-generation scalar leptoquarks and heavy right-handed neutrinos in final states with two tau leptons and two jets in proton-proton collisions at $\sqrt{s} = 13$ TeV," *JHEP* **07** (2017), 121 doi:10.1007/JHEP07(2017)121 [arXiv:1703.03995 [hep-ex]].

- A. M. Sirunyan *et al.* [CMS], “Measurement of the top quark mass using single top quark events in proton-proton collisions at $\sqrt{s} = 8$ TeV,” *Eur. Phys. J. C* **77** (2017) no.5, 354 doi:10.1140/epjc/s10052-017-4912-8 [arXiv:1703.02530 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Search for dark matter produced with an energetic jet or a hadronically decaying W or Z boson at $\sqrt{s} = 13$ TeV,” *JHEP* **07** (2017), 014 doi:10.1007/JHEP07(2017)014 [arXiv:1703.01651 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Measurement of double-differential cross sections for top quark pair production in pp collisions at $\sqrt{s} = 8$ TeV and impact on parton distribution functions,” *Eur. Phys. J. C* **77** (2017) no.7, 459 doi:10.1140/epjc/s10052-017-4984-5 [arXiv:1703.01630 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Search for standard model production of four top quarks in proton-proton collisions at $\sqrt{s} = 13$ TeV,” *Phys. Lett. B* **772** (2017), 336-358 doi:10.1016/j.physletb.2017.06.064 [arXiv:1702.06164 [hep-ex]].
- V. Khachatryan *et al.* [CMS], “Measurement of the cross section for electroweak production of $Z\gamma$ in association with two jets and constraints on anomalous quartic gauge couplings in proton-proton collisions at $\sqrt{s} = 8$ TeV,” *Phys. Lett. B* **770** (2017), 380-402 doi:10.1016/j.physletb.2017.04.071 [arXiv:1702.03025 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Measurement of prompt and nonprompt J/ψ production in pp and pPb collisions at $\sqrt{s_{NN}} = 5.02$ TeV,” *Eur. Phys. J. C* **77** (2017) no.4, 269 doi:10.1140/epjc/s10052-017-4828-3 [arXiv:1702.01462 [nucl-ex]].
- A. M. Sirunyan *et al.* [CMS], “Search for associated production of a Z boson with a single top quark and for tZ flavour-changing interactions in pp collisions at $\sqrt{s} = 8$ TeV,” *JHEP* **07** (2017), 003 doi:10.1007/JHEP07(2017)003 [arXiv:1702.01404 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Study of Jet Quenching with $Z + \text{jet}$ Correlations in Pb-Pb and pp Collisions at $\sqrt{s_{NN}} = 5.02$ TeV,” *Phys. Rev. Lett.* **119** (2017) no.8, 082301 doi:10.1103/PhysRevLett.119.082301 [arXiv:1702.01060 [nucl-ex]].
- A. M. Sirunyan *et al.* [CMS], “Azimuthal anisotropy of charged particles with transverse momentum up to 100 GeV/ c in PbPb collisions at $\sqrt{s_{NN}} = 5.02$ TeV,” *Phys. Lett. B* **776** (2018), 195-216 doi:10.1016/j.physletb.2017.11.041 [arXiv:1702.00630 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Measurement of the inclusive energy spectrum in the very forward direction in proton-proton collisions at $\sqrt{s} = 13$ TeV,” *JHEP* **08** (2017), 046 doi:10.1007/JHEP08(2017)046 [arXiv:1701.08695 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Search for single production of vector-like quarks decaying into a b quark and a W boson in proton-proton collisions at $\sqrt{s} = 13$ TeV,” *Phys. Lett. B* **772** (2017), 634-656 doi:10.1016/j.physletb.2017.07.022 [arXiv:1701.08328 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Search for single production of vector-like quarks decaying to a Z boson and a top or a bottom quark in proton-proton collisions at $\sqrt{s} = 13$ TeV,” *JHEP* **05** (2017), 029 doi:10.1007/JHEP05(2017)029 [arXiv:1701.07409 [hep-ex]].

- V. Khachatryan *et al.* [CMS], “Search for new phenomena with multiple charged leptons in proton–proton collisions at $\sqrt{s} = 13$ TeV,” *Eur. Phys. J. C* **77** (2017) no.9, 635 doi:10.1140/epjc/s10052-017-5182-1 [arXiv:1701.06940 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Measurement of the $t\bar{t}$ production cross section using events with one lepton and at least one jet in pp collisions at $\sqrt{s} = 13$ TeV,” *JHEP* **09** (2017), 051 doi:10.1007/JHEP09(2017)051 [arXiv:1701.06228 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Search for dark matter and unparticles in events with a Z boson and missing transverse momentum in proton-proton collisions at $\sqrt{s} = 13$ TeV,” *JHEP* **03** (2017), 061 [erratum: *JHEP* **09** (2017), 106] doi:10.1007/JHEP03(2017)061 [arXiv:1701.02042 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Mechanical stability of the CMS strip tracker measured with a laser alignment system,” *JINST* **12** (2017) no.04, P04023 doi:10.1088/1748-0221/12/04/P04023 [arXiv:1701.02022 [physics.ins-det]].
- V. Khachatryan *et al.* [CMS], “Search for supersymmetry in the all-hadronic final state using top quark tagging in pp collisions at $\sqrt{s} = 13$ TeV,” *Phys. Rev. D* **96** (2017) no.1, 012004 doi:10.1103/PhysRevD.96.012004 [arXiv:1701.01954 [hep-ex]].
- V. Khachatryan *et al.* [CMS], “Search for light bosons in decays of the 125 GeV Higgs boson in proton-proton collisions at $\sqrt{s} = 8$ TeV,” *JHEP* **10** (2017), 076 doi:10.1007/JHEP10(2017)076 [arXiv:1701.02032 [hep-ex]].
- V. Khachatryan *et al.* [CMS], “Search for leptophobic Z' bosons decaying into four-lepton final states in proton–proton collisions at $\sqrt{s} = 8$ TeV,” *Phys. Lett. B* **773** (2017), 563-584 doi:10.1016/j.physletb.2017.08.069 [arXiv:1701.01345 [hep-ex]].
- W. Adam *et al.* [CMS Tracker], “Test beam demonstration of silicon microstrip modules with transverse momentum discrimination for the future CMS tracking detector,” *JINST* **13** (2018) no.03, P03003 doi:10.1088/1748-0221/13/03/P03003
- A. M. Sirunyan *et al.* [CMS], “Search for high-mass $Z\gamma$ resonances in proton-proton collisions at $\sqrt{s} = 8$ and 13 TeV using jet substructure techniques,” *Phys. Lett. B* **772** (2017), 363-387 doi:10.1016/j.physletb.2017.06.062 [arXiv:1612.09516 [hep-ex]].
- V. Khachatryan *et al.* [CMS], “Search for heavy gauge W' boson in events with an energetic lepton and large missing transverse momentum at $\sqrt{s} = 13$ TeV,” *Phys. Lett. B* **770** (2017), 278-301 doi:10.1016/j.physletb.2017.04.043 [arXiv:1612.09274 [hep-ex]].
- V. Khachatryan *et al.* [CMS], “Measurement of electroweak-induced production of $W\gamma$ with two jets in pp collisions at $\sqrt{s} = 8$ TeV and constraints on anomalous quartic gauge couplings,” *JHEP* **06** (2017), 106 doi:10.1007/JHEP06(2017)106 [arXiv:1612.09256 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Search for massive resonances decaying into WW, WZ or ZZ bosons in proton-proton collisions at $\sqrt{s} = 13$ TeV,” *JHEP* **03** (2017), 162 doi:10.1007/JHEP03(2017)162 [arXiv:1612.09159 [hep-ex]].
- A. M. Sirunyan *et al.* [CMS], “Measurements of the charm jet cross section and nuclear modification factor in

pPb collisions at $\sqrt{s_{NN}} = 5.02$ TeV," Phys. Lett. B **772** (2017), 306-329 doi:10.1016/j.physletb.2017.06.053 [arXiv:1612.08972 [nucl-ex]].

A. M. Sirunyan *et al.* [CMS], "Search for electroweak production of a vector-like quark decaying to a top quark and a Higgs boson using boosted topologies in fully hadronic final states," JHEP **04** (2017), 136 doi:10.1007/JHEP04(2017)136 [arXiv:1612.05336 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Searches for pair production of third-generation squarks in $\sqrt{s} = 13$ TeV pp collisions," Eur. Phys. J. C **77** (2017) no.5, 327 doi:10.1140/epjc/s10052-017-4853-2 [arXiv:1612.03877 [hep-ex]].

V. Khachatryan *et al.* [CMS], "Search for heavy neutrinos or third-generation leptoquarks in final states with two hadronically decaying τ leptons and two jets in proton-proton collisions at $\sqrt{s} = 13$ TeV," JHEP **03** (2017), 077 doi:10.1007/JHEP03(2017)077 [arXiv:1612.01190 [hep-ex]].

V. Khachatryan *et al.* [CMS], "Search for single production of a heavy vector-like T quark decaying to a Higgs boson and a top quark with a lepton and jets in the final state," Phys. Lett. B **771** (2017), 80-105 doi:10.1016/j.physletb.2017.05.019 [arXiv:1612.00999 [hep-ex]].

V. Khachatryan *et al.* [CMS], "Search for CP violation in $t\bar{t}$ production and decay in proton-proton collisions at $\sqrt{s} = 8$ TeV," JHEP **03** (2017), 101 doi:10.1007/JHEP03(2017)101 [arXiv:1611.08931 [hep-ex]].

V. Khachatryan *et al.* [CMS], "Search for heavy resonances decaying to tau lepton pairs in proton-proton collisions at $\sqrt{s} = 13$ TeV," JHEP **02** (2017), 048 doi:10.1007/JHEP02(2017)048 [arXiv:1611.06594 [hep-ex]].

V. Khachatryan *et al.* [CMS], "Search for supersymmetry in events with photons and missing transverse energy in pp collisions at 13 TeV," Phys. Lett. B **769** (2017), 391-412 doi:10.1016/j.physletb.2017.04.005 [arXiv:1611.06604 [hep-ex]].

V. Khachatryan *et al.* [CMS], "Measurements of the associated production of a Z boson and b jets in pp collisions at $\sqrt{s} = 8$ TeV," Eur. Phys. J. C **77** (2017) no.11, 751 doi:10.1140/epjc/s10052-017-5140-y [arXiv:1611.06507 [hep-ex]].

V. Khachatryan *et al.* [CMS], "Measurement of the $t\bar{t}$ production cross section using events in the $e\mu$ final state in pp collisions at $\sqrt{s} = 13$ TeV," Eur. Phys. J. C **77** (2017), 172 doi:10.1140/epjc/s10052-017-4718-8 [arXiv:1611.04040 [hep-ex]].

V. Khachatryan *et al.* [CMS], "Measurements of differential production cross sections for a Z boson in association with jets in pp collisions at $\sqrt{s} = 8$ TeV," JHEP **04** (2017), 022 doi:10.1007/JHEP04(2017)022 [arXiv:1611.03844 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], "Search for dijet resonances in proton-proton collisions at $\sqrt{s} = 13$ TeV and constraints on dark matter and other models," Phys. Lett. B **769** (2017), 520-542 [erratum: Phys. Lett. B **772** (2017), 882-883] doi:10.1016/j.physletb.2017.02.012 [arXiv:1611.03568 [hep-ex]].

V. Khachatryan *et al.* [CMS], "Charged-particle nuclear modification factors in PbPb and pPb collisions at $\sqrt{s_{NN}} = 5.02$ TeV," JHEP **04** (2017), 039 doi:10.1007/JHEP04(2017)039 [arXiv:1611.01664 [nucl-ex]].

- V. Khachatryan *et al.* [CMS], "Suppression of $\Upsilon(1S)$, $\Upsilon(2S)$ and $\Upsilon(3S)$ production in PbPb collisions at $\sqrt{s_{NN}} = 2.76$ TeV," Phys. Lett. B **770** (2017), 357-379 doi:10.1016/j.physletb.2017.04.031 [arXiv:1611.01510 [nucl-ex]].
- A. M. Sirunyan *et al.* [CMS], "Relative Modification of Prompt $\psi(2S)$ and J/ψ Yields from pp to PbPb Collisions at $\sqrt{s_{NN}} = 5.02$ TeV," Phys. Rev. Lett. **118** (2017) no.16, 162301 doi:10.1103/PhysRevLett.118.162301 [arXiv:1611.01438 [nucl-ex]].
- V. Khachatryan *et al.* [CMS], "A search for new phenomena in pp collisions at $\sqrt{s} = 13$ TeV in final states with missing transverse momentum and at least one jet using the α_T variable," Eur. Phys. J. C **77** (2017) no.5, 294 doi:10.1140/epjc/s10052-017-4787-8 [arXiv:1611.00338 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], "Measurement of the mass difference between top quark and antiquark in pp collisions at $\sqrt{s} = 8$ TeV," Phys. Lett. B **770** (2017), 50-71 doi:10.1016/j.physletb.2017.04.028 [arXiv:1610.09551 [hep-ex]].
- V. Khachatryan *et al.* [CMS], "Searches for invisible decays of the Higgs boson in pp collisions at $\sqrt{s} = 7, 8,$ and 13 TeV," JHEP **02** (2017), 135 doi:10.1007/JHEP02(2017)135 [arXiv:1610.09218 [hep-ex]].
- V. Khachatryan *et al.* [CMS], "Search for heavy resonances decaying into a vector boson and a Higgs boson in final states with charged leptons, neutrinos, and b quarks," Phys. Lett. B **768** (2017), 137-162 doi:10.1016/j.physletb.2017.02.040 [arXiv:1610.08066 [hep-ex]].
- V. Khachatryan *et al.* [CMS], "Observation of $\Upsilon(1S)$ pair production in proton-proton collisions at $\sqrt{s} = 8$ TeV," JHEP **05** (2017), 013 doi:10.1007/JHEP05(2017)013 [arXiv:1610.07095 [hep-ex]].
- V. Khachatryan *et al.* [CMS], "Search for R-parity violating supersymmetry with displaced vertices in proton-proton collisions at $\sqrt{s} = 8$ TeV," Phys. Rev. D **95** (2017) no.1, 012009 doi:10.1103/PhysRevD.95.012009 [arXiv:1610.05133 [hep-ex]].
- V. Khachatryan *et al.* [CMS], "Search for top quark decays via Higgs-boson-mediated flavor-changing neutral currents in pp collisions at $\sqrt{s} = 8$ TeV," JHEP **02** (2017), 079 doi:10.1007/JHEP02(2017)079 [arXiv:1610.04857 [hep-ex]].
- V. Khachatryan *et al.* [CMS], "Search for electroweak production of charginos in final states with two τ leptons in pp collisions at $\sqrt{s} = 8$ TeV," JHEP **04** (2017), 018 doi:10.1007/JHEP04(2017)018 [arXiv:1610.04870 [hep-ex]].
- V. Khachatryan *et al.* [CMS], "Measurement of differential cross sections for top quark pair production using the lepton+jets final state in proton-proton collisions at 13 TeV," Phys. Rev. D **95** (2017) no.9, 092001 doi:10.1103/PhysRevD.95.092001 [arXiv:1610.04191 [hep-ex]].
- V. Khachatryan *et al.* [CMS], "Measurements of differential cross sections for associated production of a W boson and jets in proton-proton collisions at $\sqrt{s} = 8$ TeV," Phys. Rev. D **95** (2017), 052002 doi:10.1103/PhysRevD.95.052002 [arXiv:1610.04222 [hep-ex]].
- V. Khachatryan *et al.* [CMS], "Search for anomalous Wtb couplings and flavour-changing neutral currents in t-channel single top quark production in pp collisions at $\sqrt{s} = 7$ and 8 TeV," JHEP **02** (2017),

028 doi:10.1007/JHEP02(2017)028 [arXiv:1610.03545 [hep-ex]].

V. Khachatryan *et al.* [CMS], “Search for high-mass $Z\gamma$ resonances in $e^+e^-\gamma$ and $\mu^+\mu^-\gamma$ final states in proton-proton collisions at $\sqrt{s} = 8$ and 13 TeV,” JHEP **01** (2017), 076 doi:10.1007/JHEP01(2017)076 [arXiv:1610.02960 [hep-ex]].

A. M. Sirunyan *et al.* [CMS], “Cross section measurement of t -channel single top quark production in pp collisions at $\sqrt{s} = 13$ TeV,” Phys. Lett. B **772** (2017), 752-776 doi:10.1016/j.physletb.2017.07.047 [arXiv:1610.00678 [hep-ex]].

V. Khachatryan *et al.* [CMS], “Suppression and azimuthal anisotropy of prompt and nonprompt J/ψ production in PbPb collisions at $\sqrt{s_{NN}} = 2.76$ TeV,” Eur. Phys. J. C **77** (2017) no.4, 252 doi:10.1140/epjc/s10052-017-4781-1 [arXiv:1610.00613 [nucl-ex]].

V. Khachatryan *et al.* [CMS], “Observation of charge-dependent azimuthal correlations in p -Pb collisions and its implication for the search for the chiral magnetic effect,” Phys. Rev. Lett. **118** (2017) no.12, 122301 doi:10.1103/PhysRevLett.118.122301 [arXiv:1610.00263 [nucl-ex]].

V. Khachatryan *et al.* [CMS], “Search for supersymmetry in events with one lepton and multiple jets in proton-proton collisions at $\sqrt{s} = 13$ TeV,” Phys. Rev. D **95** (2017) no.1, 012011 doi:10.1103/PhysRevD.95.012011 [arXiv:1609.09386 [hep-ex]].

V. Khachatryan *et al.* [CMS], “Search for long-lived charged particles in proton-proton collisions at $\sqrt{s} = 13$ TeV,” Phys. Rev. D **94** (2016) no.11, 112004 doi:10.1103/PhysRevD.94.112004 [arXiv:1609.08382 [hep-ex]].

V. Khachatryan *et al.* [CMS], “Inclusive search for supersymmetry using razor variables in pp collisions at $\sqrt{s} = 13$ TeV,” Phys. Rev. D **95** (2017) no.1, 012003 doi:10.1103/PhysRevD.95.012003 [arXiv:1609.07658 [hep-ex]].

V. Khachatryan *et al.* [CMS], “Measurement of the WZ production cross section in pp collisions at $\sqrt{s} = 7$ and 8 TeV and search for anomalous triple gauge couplings at $\sqrt{s} = 8$ TeV,” Eur. Phys. J. C **77** (2017) no.4, 236 doi:10.1140/epjc/s10052-017-4730-z [arXiv:1609.05721 [hep-ex]].

V. Khachatryan *et al.* [CMS], “Measurement and QCD analysis of double-differential inclusive jet cross sections in pp collisions at $\sqrt{s} = 8$ TeV and cross section ratios to 2.76 and 7 TeV,” JHEP **03** (2017), 156 doi:10.1007/JHEP03(2017)156 [arXiv:1609.05331 [hep-ex]].

V. Khachatryan *et al.* [CMS], “Search for narrow resonances in dilepton mass spectra in proton-proton collisions at $\sqrt{s} = 13$ TeV and combination with 8 TeV data,” Phys. Lett. B **768** (2017), 57-80 doi:10.1016/j.physletb.2017.02.010 [arXiv:1609.05391 [hep-ex]].

V. Khachatryan *et al.* [CMS], “Measurement of inclusive jet cross sections in pp and PbPb collisions at $\sqrt{s_{NN}} = 2.76$ TeV,” Phys. Rev. C **96** (2017) no.1, 015202 doi:10.1103/PhysRevC.96.015202 [arXiv:1609.05383 [nucl-ex]].

V. Khachatryan *et al.* [CMS], “Studies of inclusive four-jet production with two b -tagged jets in proton-proton collisions at 7 TeV,” Phys. Rev. D **94** (2016) no.11, 112005 doi:10.1103/PhysRevD.94.112005 [arXiv:1609.03489 [hep-ex]].

- V. Khachatryan *et al.* [CMS], “Decomposing transverse momentum balance contributions for quenched jets in PbPb collisions at $\sqrt{s_{NN}} = 2.76$ TeV,” JHEP **11** (2016), 055 doi:10.1007/JHEP11(2016)055 [arXiv:1609.02466 [nucl-ex]].
- V. Khachatryan *et al.* [CMS], “Search for high-mass diphoton resonances in proton–proton collisions at 13 TeV and combination with 8 TeV search,” Phys. Lett. B **767** (2017), 147-170 doi:10.1016/j.physletb.2017.01.027 [arXiv:1609.02507 [hep-ex]].
- V. Khachatryan *et al.* [CMS], “The CMS trigger system,” JINST **12** (2017) no.01, P01020 doi:10.1088/1748-0221/12/01/P01020 [arXiv:1609.02366 [physics.ins-det]].
- V. Khachatryan *et al.* [CMS], “Measurement of the total and differential inclusive B^+ hadron cross sections in pp collisions at $\sqrt{s} = 13$ TeV,” Phys. Lett. B **771** (2017), 435-456 doi:10.1016/j.physletb.2017.05.074 [arXiv:1609.00873 [hep-ex]].
- V. Khachatryan *et al.* [CMS], “Measurement of the production cross section of a W boson in association with two b jets in pp collisions at $\sqrt{s} = 8$ TeV,” Eur. Phys. J. C **77** (2017) no.2, 92 doi:10.1140/epjc/s10052-016-4573-z [arXiv:1608.07561 [hep-ex]].
- V. Khachatryan *et al.* [CMS], “Measurement of the mass of the top quark in decays with a J/ψ meson in pp collisions at 8 TeV,” JHEP **12** (2016), 123 doi:10.1007/JHEP12(2016)123 [arXiv:1608.03560 [hep-ex]].
- V. Khachatryan *et al.* [CMS], “Search for new phenomena in events with high jet multiplicity and low missing transverse momentum in proton–proton collisions at $\sqrt{s} = 8$ TeV,” Phys. Lett. B **770** (2017), 257-267 doi:10.1016/j.physletb.2017.01.073 [arXiv:1608.01224 [hep-ex]].
- V. Khachatryan *et al.* [CMS], “Measurement of the ZZ production cross section and $Z \rightarrow \ell^+ \ell^- \ell'^+ \ell'^-$ branching fraction in pp collisions at $\sqrt{s}=13$ TeV,” Phys. Lett. B **763** (2016), 280-303 [erratum: Phys. Lett. B **772** (2017), 884-884] doi:10.1016/j.physletb.2016.10.054 [arXiv:1607.08834 [hep-ex]].
- V. Khachatryan *et al.* [CMS], “Measurement of electroweak production of a W boson and two forward jets in proton-proton collisions at $\sqrt{s} = 8$ TeV,” JHEP **11** (2016), 147 doi:10.1007/JHEP11(2016)147 [arXiv:1607.06975 [hep-ex]].
- V. Khachatryan *et al.* [CMS], “Measurement of the WZ production cross section in pp collisions at $\sqrt{s} = 13$ TeV,” Phys. Lett. B **766** (2017), 268-290 doi:10.1016/j.physletb.2017.01.011 [arXiv:1607.06943 [hep-ex]].
- V. Khachatryan *et al.* [CMS], “Search for dark matter in proton-proton collisions at 8 TeV with missing transverse momentum and vector boson tagged jets,” JHEP **12** (2016), 083 [erratum: JHEP **08** (2017), 035] doi:10.1007/JHEP12(2016)083 [arXiv:1607.05764 [hep-ex]].
- V. Khachatryan *et al.* [CMS], “Jet energy scale and resolution in the CMS experiment in pp collisions at 8 TeV,” JINST **12** (2017) no.02, P02014 doi:10.1088/1748-0221/12/02/P02014 [arXiv:1607.03663 [hep-ex]].
- V. Khachatryan *et al.* [CMS], “Search for lepton flavour violating decays of the Higgs boson to $e\tau$ and $e\mu$ in proton–proton collisions at $\sqrt{s} = 8$ TeV,” Phys. Lett. B **763** (2016), 472-500 doi:10.1016/j.physletb.2016.09.062

[arXiv:1607.03561 [hep-ex]].

V. Khachatryan *et al.* [CMS], "Observation of the decay $B^+ \rightarrow \psi(2S)\phi(1020)K^+$ in pp collisions at $\sqrt{s} = 8$ TeV," Phys. Lett. B **764** (2017), 66-86 doi:10.1016/j.physletb.2016.11.001 [arXiv:1607.02638 [hep-ex]].

V. Khachatryan *et al.* [CMS], "Search for new physics in final states with two opposite-sign, same-flavor leptons, jets, and missing transverse momentum in pp collisions at $\sqrt{s} = 13$ TeV," JHEP **12** (2016), 013 doi:10.1007/JHEP12(2016)013 [arXiv:1607.00915 [hep-ex]].

V. Khachatryan *et al.* [CMS], "Measurement of the differential cross sections for top quark pair production as a function of kinematic event variables in pp collisions at $\sqrt{s}=7$ and 8 TeV," Phys. Rev. D **94** (2016) no.5, 052006 doi:10.1103/PhysRevD.94.052006 [arXiv:1607.00837 [hep-ex]].

V. Khachatryan *et al.* [CMS], "Searches for R -parity-violating supersymmetry in pp collisions at $\sqrt{s} = 8$ TeV in final states with 0-4 leptons," Phys. Rev. D **94** (2016) no.11, 112009 doi:10.1103/PhysRevD.94.112009 [arXiv:1606.08076 [hep-ex]].

V. Khachatryan *et al.* [CMS], "Evidence for collectivity in pp collisions at the LHC," Phys. Lett. B **765** (2017), 193-220 doi:10.1016/j.physletb.2016.12.009 [arXiv:1606.06198 [nucl-ex]].

V. Khachatryan *et al.* [CMS], "Measurement of the transverse momentum spectra of weak vector bosons produced in proton-proton collisions at $\sqrt{s} = 8$ TeV," JHEP **02** (2017), 096 doi:10.1007/JHEP02(2017)096 [arXiv:1606.05864 [hep-ex]].

V. Khachatryan *et al.* [CMS], "Search for Resonant Production of High-Mass Photon Pairs in Proton-Proton Collisions at $\sqrt{s} = 8$ and 13 TeV," Phys. Rev. Lett. **117** (2016) no.5, 051802 doi:10.1103/PhysRevLett.117.051802 [arXiv:1606.04093 [hep-ex]].

V. Khachatryan *et al.* [CMS], "Phenomenological MSSM interpretation of CMS searches in pp collisions at $\sqrt{s} = 7$ and 8 TeV," JHEP **10** (2016), 129 doi:10.1007/JHEP10(2016)129 [arXiv:1606.03577 [hep-ex]].

G. Aad *et al.* [ATLAS and CMS], "Measurements of the Higgs boson production and decay rates and constraints on its couplings from a combined ATLAS and CMS analysis of the LHC pp collision data at $\sqrt{s} = 7$ and 8 TeV," JHEP **08** (2016), 045 doi:10.1007/JHEP08(2016)045 [arXiv:1606.02266 [hep-ex]].

V. Khachatryan *et al.* [CMS], "Measurement of the transverse momentum spectrum of the Higgs boson produced in pp collisions at $\sqrt{s} = 8$ TeV using $H \rightarrow WW$ decays," JHEP **03** (2017), 032 doi:10.1007/JHEP03(2017)032 [arXiv:1606.01522 [hep-ex]].

V. Khachatryan *et al.* [CMS], "Search for Dark Matter and Supersymmetry with a Compressed Mass Spectrum in the Vector Boson Fusion Topology in Proton-Proton Collisions at $\sqrt{s} = 8$ TeV," Phys. Rev. Lett. **118** (2017) no.2, 021802 doi:10.1103/PhysRevLett.118.021802 [arXiv:1605.09305 [hep-ex]].

V. Khachatryan *et al.* [CMS], "Measurement of the W boson helicity fractions in the decays of top quark pairs to lepton + jets final states produced in pp collisions at $\sqrt{s} = 8$ TeV," Phys. Lett. B **762** (2016), 512-534 doi:10.1016/j.physletb.2016.10.007 [arXiv:1605.09047 [hep-ex]].

- V. Khachatryan *et al.* [CMS], “Search for top squark pair production in compressed-mass-spectrum scenarios in proton-proton collisions at $\sqrt{s} = 8$ TeV using the α_T variable,” *Phys. Lett. B* **767** (2017), 403-430 doi:10.1016/j.physletb.2017.02.007 [arXiv:1605.08993 [hep-ex]].
- V. Khachatryan *et al.* [CMS], “Coherent J/ψ photoproduction in ultra-peripheral PbPb collisions at $\sqrt{s_{NN}} = 2.76$ TeV with the CMS experiment,” *Phys. Lett. B* **772** (2017), 489-511 doi:10.1016/j.physletb.2017.07.001 [arXiv:1605.06966 [nucl-ex]].
- V. Khachatryan *et al.* [CMS], “Multiplicity and rapidity dependence of strange hadron production in pp, pPb, and PbPb collisions at the LHC,” *Phys. Lett. B* **768** (2017), 103-129 doi:10.1016/j.physletb.2017.01.075 [arXiv:1605.06699 [nucl-ex]].
- V. Khachatryan *et al.* [CMS], “Search for supersymmetry in pp collisions at $\sqrt{s} = 13$ TeV in the single-lepton final state using the sum of masses of large-radius jets,” *JHEP* **08** (2016), 122 doi:10.1007/JHEP08(2016)122 [arXiv:1605.04608 [hep-ex]].
- V. Khachatryan *et al.* [CMS], “Measurement of the double-differential inclusive jet cross section in proton-proton collisions at $\sqrt{s} = 13$ TeV,” *Eur. Phys. J. C* **76** (2016) no.8, 451 doi:10.1140/epjc/s10052-016-4286-3 [arXiv:1605.04436 [hep-ex]].
- V. Khachatryan *et al.* [CMS], “Search for new physics in same-sign dilepton events in proton-proton collisions at $\sqrt{s} = 13$ TeV,” *Eur. Phys. J. C* **76** (2016) no.8, 439 doi:10.1140/epjc/s10052-016-4261-z [arXiv:1605.03171 [hep-ex]].
- V. Khachatryan *et al.* [CMS], “Search for Higgs boson off-shell production in proton-proton collisions at 7 and 8 TeV and derivation of constraints on its total decay width,” *JHEP* **09** (2016), 051 doi:10.1007/JHEP09(2016)051 [arXiv:1605.02329 [hep-ex]].
- V. Khachatryan *et al.* [CMS], “Measurement of the integrated and differential $t\bar{t}$ production cross sections for high- p_t top quarks in pp collisions at $\sqrt{s} = 8$ TeV,” *Phys. Rev. D* **94** (2016) no.7, 072002 doi:10.1103/PhysRevD.94.072002 [arXiv:1605.00116 [hep-ex]].
- V. Khachatryan *et al.* [CMS], “Search for narrow resonances in dijet final states at $\sqrt{s} = 8$ TeV with the novel CMS technique of data scouting,” *Phys. Rev. Lett.* **117** (2016) no.3, 031802 doi:10.1103/PhysRevLett.117.031802 [arXiv:1604.08907 [hep-ex]].
- V. Khachatryan *et al.* [CMS], “Search for lepton flavour violating decays of heavy resonances and quantum black holes to an $e\mu$ pair in proton-proton collisions at $\sqrt{s} = 8$ TeV,” *Eur. Phys. J. C* **76** (2016) no.6, 317 doi:10.1140/epjc/s10052-016-4149-y [arXiv:1604.05239 [hep-ex]].
- V. Khachatryan *et al.* [CMS], “Pseudorapidity dependence of long-range two-particle correlations in pPb collisions at $\sqrt{s_{NN}} = 5.02$ TeV,” *Phys. Rev. C* **96** (2017) no.1, 014915 doi:10.1103/PhysRevC.96.014915 [arXiv:1604.05347 [nucl-ex]].
- V. Khachatryan *et al.* [CMS], “Evidence for exclusive $\gamma\gamma \rightarrow W^+W^-$ production and constraints on anomalous quartic gauge couplings in pp collisions at $\sqrt{s} = 7$ and 8 TeV,” *JHEP* **08** (2016), 119 doi:10.1007/JHEP08(2016)119 [arXiv:1604.04464 [hep-ex]].
- V. Khachatryan *et al.* [CMS], “Search for dark matter particles in proton-proton collisions at $\sqrt{s} = 8$

TeV using the razor variables," JHEP **12** (2016), 088 doi:10.1007/JHEP12(2016)088 [arXiv:1603.08914 [hep-ex]].

V. Khachatryan *et al.* [CMS], "Search for two Higgs bosons in final states containing two photons and two bottom quarks in proton-proton collisions at 8 TeV," Phys. Rev. D **94** (2016) no.5, 052012 doi:10.1103/PhysRevD.94.052012 [arXiv:1603.06896 [hep-ex]].

V. Khachatryan *et al.* [CMS], "Measurement of the top quark mass using charged particles in pp collisions at $\sqrt{s} = 8$ TeV," Phys. Rev. D **93** (2016) no.9, 092006 doi:10.1103/PhysRevD.93.092006 [arXiv:1603.06536 [hep-ex]].

V. Khachatryan *et al.* [CMS], "Measurements of $t\bar{t}$ charge asymmetry using dilepton final states in pp collisions at $\sqrt{s} = 8$ TeV," Phys. Lett. B **760** (2016), 365-386 doi:10.1016/j.physletb.2016.07.006 [arXiv:1603.06221 [hep-ex]].

V. Khachatryan *et al.* [CMS], "Search for new physics with the M_{T2} variable in all-jets final states produced in pp collisions at $\sqrt{s} = 13$ TeV," JHEP **10** (2016), 006 doi:10.1007/JHEP10(2016)006 [arXiv:1603.04053 [hep-ex]].

V. Khachatryan *et al.* [CMS], " $\Upsilon(nS)$ polarizations versus particle multiplicity in pp collisions at $\sqrt{s} = 7$ TeV," Phys. Lett. B **761** (2016), 31-52 doi:10.1016/j.physletb.2016.07.065 [arXiv:1603.02913 [hep-ex]].

V. Khachatryan *et al.* [CMS], "Search for neutral resonances decaying into a Z boson and a pair of b jets or τ leptons," Phys. Lett. B **759** (2016), 369-394 doi:10.1016/j.physletb.2016.05.087 [arXiv:1603.02991 [hep-ex]].

V. Khachatryan *et al.* [CMS], "Search for s channel single top quark production in pp collisions at $\sqrt{s} = 7$ and 8 TeV," JHEP **09** (2016), 027 doi:10.1007/JHEP09(2016)027 [arXiv:1603.02555 [hep-ex]].

V. Khachatryan *et al.* [CMS], "Search for heavy Majorana neutrinos in $ee +$ jets and $e\mu +$ jets events in proton-proton collisions at $\sqrt{s} = 8$ TeV," JHEP **04** (2016), 169 doi:10.1007/JHEP04(2016)169 [arXiv:1603.02248 [hep-ex]].

V. Khachatryan *et al.* [CMS], "Measurement of the t-tbar production cross section in the e-mu channel in proton-proton collisions at $\sqrt{s} = 7$ and 8 TeV," JHEP **08** (2016), 029 doi:10.1007/JHEP08(2016)029 [arXiv:1603.02303 [hep-ex]].

V. Khachatryan *et al.* [CMS], "Measurement of the differential cross section and charge asymmetry for inclusive $pp \rightarrow W^\pm + X$ production at $\sqrt{s} = 8$ TeV," Eur. Phys. J. C **76** (2016) no.8, 469 doi:10.1140/epjc/s10052-016-4293-4 [arXiv:1603.01803 [hep-ex]].

V. Khachatryan *et al.* [CMS], "Search for direct pair production of supersymmetric top quarks decaying to all-hadronic final states in pp collisions at $\sqrt{s} = 8$ TeV," Eur. Phys. J. C **76** (2016) no.8, 460 doi:10.1140/epjc/s10052-016-4292-5 [arXiv:1603.00765 [hep-ex]].

V. Khachatryan *et al.* [CMS], "Measurements of the $t\bar{t}$ production cross section in lepton+jets final states in pp collisions at 8 TeV and ratio of 8 to 7 TeV cross sections," Eur. Phys. J. C **77** (2017) no.1, 15 doi:10.1140/epjc/s10052-016-4504-z [arXiv:1602.09024 [hep-ex]].

- V. Khachatryan *et al.* [CMS], “Search for heavy resonances decaying to two Higgs bosons in final states containing four b quarks,” *Eur. Phys. J. C* **76** (2016) no.7, 371 doi:10.1140/epjc/s10052-016-4206-6 [arXiv:1602.08762 [hep-ex]].
- V. Khachatryan *et al.* [CMS], “Search for supersymmetry in electroweak production with photons and large missing transverse energy in pp collisions at $\sqrt{s} = 8$ TeV,” *Phys. Lett. B* **759** (2016), 479-500 doi:10.1016/j.physletb.2016.05.088 [arXiv:1602.08772 [hep-ex]].
- V. Khachatryan *et al.* [CMS], “Measurement of the $Z\gamma \rightarrow \nu\bar{\nu}\gamma$ production cross section in pp collisions at $\sqrt{s} = 8$ TeV and limits on anomalous $ZZ\gamma$ and $Z\gamma\gamma$ trilinear gauge boson couplings,” *Phys. Lett. B* **760** (2016), 448-468 doi:10.1016/j.physletb.2016.06.080 [arXiv:1602.07152 [hep-ex]].
- V. Khachatryan *et al.* [CMS], “Search for supersymmetry in the multijet and missing transverse momentum final state in pp collisions at 13 TeV,” *Phys. Lett. B* **758** (2016), 152-180 doi:10.1016/j.physletb.2016.05.002 [arXiv:1602.06581 [hep-ex]].
- V. Khachatryan *et al.* [CMS], “Search for R-parity violating decays of a top squark in proton-proton collisions at $\sqrt{s} = 8$ TeV,” *Phys. Lett. B* **760** (2016), 178-201 doi:10.1016/j.physletb.2016.06.039 [arXiv:1602.04334 [hep-ex]].
- V. Khachatryan *et al.* [CMS], “Measurement of dijet azimuthal decorrelation in pp collisions at $\sqrt{s} = 8$ TeV,” *Eur. Phys. J. C* **76** (2016) no.10, 536 doi:10.1140/epjc/s10052-016-4346-8 [arXiv:1602.04384 [hep-ex]].
- V. Khachatryan *et al.* [CMS], “Combined search for anomalous pseudoscalar HVV couplings in $VH(H \rightarrow b\bar{b})$ production and $H \rightarrow VV$ decay,” *Phys. Lett. B* **759** (2016), 672-696 doi:10.1016/j.physletb.2016.06.004 [arXiv:1602.04305 [hep-ex]].
- V. Khachatryan *et al.* [CMS], “Search for direct pair production of scalar top quarks in the single- and dilepton channels in proton-proton collisions at $\sqrt{s} = 8$ TeV,” *JHEP* **07** (2016), 027 [erratum: *JHEP* **09** (2016), 056] doi:10.1007/JHEP07(2016)027 [arXiv:1602.03169 [hep-ex]].
- V. Khachatryan *et al.* [CMS], “Search for supersymmetry in pp collisions at $\sqrt{s} = 8$ TeV in final states with boosted W bosons and b jets using razor variables,” *Phys. Rev. D* **93** (2016) no.9, 092009 doi:10.1103/PhysRevD.93.092009 [arXiv:1602.02917 [hep-ex]].
- V. Khachatryan *et al.* [CMS], “Azimuthal decorrelation of jets widely separated in rapidity in pp collisions at $\sqrt{s} = 7$ TeV,” *JHEP* **08** (2016), 139 doi:10.1007/JHEP08(2016)139 [arXiv:1601.06713 [hep-ex]].
- V. Khachatryan *et al.* [CMS], “Search for massive WH resonances decaying into the $\ell\nu b\bar{b}$ final state at $\sqrt{s} = 8$ TeV,” *Eur. Phys. J. C* **76** (2016) no.5, 237 doi:10.1140/epjc/s10052-016-4067-z [arXiv:1601.06431 [hep-ex]].
- V. Khachatryan *et al.* [CMS], “Forward-backward asymmetry of Drell-Yan lepton pairs in pp collisions at $\sqrt{s} = 8$ TeV,” *Eur. Phys. J. C* **76** (2016) no.6, 325 doi:10.1140/epjc/s10052-016-4156-z [arXiv:1601.04768 [hep-ex]].
- V. Khachatryan *et al.* [CMS], “Measurement of inclusive jet production and nuclear modifications in pPb collisions at $\sqrt{s_{NN}} = 5.02$ TeV,” *Eur. Phys. J. C* **76** (2016) no.7, 372 doi:10.1140/epjc/s10052-016-4205-7 [arXiv:1601.02001 [nucl-ex]].

- V. Khachatryan *et al.* [CMS], "Measurements of $t\bar{t}$ spin correlations and top quark polarization using dilepton final states in pp collisions at $\sqrt{s} = 8$ TeV," *Phys. Rev. D* **93** (2016) no.5, 052007 doi:10.1103/PhysRevD.93.052007 [arXiv:1601.01107 [hep-ex]].
- V. Khachatryan *et al.* [CMS], "Correlations between jets and charged particles in PbPb and pp collisions at $\sqrt{s_{NN}} = 2.76$ TeV," *JHEP* **02** (2016), 156 doi:10.1007/JHEP02(2016)156 [arXiv:1601.00079 [nucl-ex]].
- V. Khachatryan *et al.* [CMS], "Measurement of differential and integrated fiducial cross sections for Higgs boson production in the four-lepton decay channel in pp collisions at $\sqrt{s} = 7$ and 8 TeV," *JHEP* **04** (2016), 005 doi:10.1007/JHEP04(2016)005 [arXiv:1512.08377 [hep-ex]].
- V. Khachatryan *et al.* [CMS], "Search for supersymmetry in events with soft leptons, low jet multiplicity, and missing transverse energy in proton-proton collisions at $\sqrt{s}=8$ TeV," *Phys. Lett. B* **759** (2016), 9-35 doi:10.1016/j.physletb.2016.05.033 [arXiv:1512.08002 [hep-ex]].
- V. Khachatryan *et al.* [CMS], "Study of Z boson production in pPb collisions at $\sqrt{s_{NN}} = 5.02$ TeV," *Phys. Lett. B* **759** (2016), 36-57 doi:10.1016/j.physletb.2016.05.044 [arXiv:1512.06461 [hep-ex]].
- V. Khachatryan *et al.* [CMS], "Measurement of the inclusive jet cross section in pp collisions at $\sqrt{s} = 2.76$ TeV," *Eur. Phys. J. C* **76** (2016) no.5, 265 doi:10.1140/epjc/s10052-016-4083-z [arXiv:1512.06212 [hep-ex]].
- V. Khachatryan *et al.* [CMS], "Search for narrow resonances decaying to dijets in proton-proton collisions at $\sqrt{s} = 13$ TeV," *Phys. Rev. Lett.* **116** (2016) no.7, 071801 doi:10.1103/PhysRevLett.116.071801 [arXiv:1512.01224 [hep-ex]].
- V. Khachatryan *et al.* [CMS], "Event generator tunes obtained from underlying event and multiparton scattering measurements," *Eur. Phys. J. C* **76** (2016) no.3, 155 doi:10.1140/epjc/s10052-016-3988-x [arXiv:1512.00815 [hep-ex]].
- V. Khachatryan *et al.* [CMS], "Search for dark matter and unparticles produced in association with a Z boson in proton-proton collisions at $\sqrt{s} = 8$ TeV," *Phys. Rev. D* **93** (2016) no.5, 052011 [erratum: *Phys. Rev. D* **97** (2018) no.9, 099903] doi:10.1103/PhysRevD.93.052011 [arXiv:1511.09375 [hep-ex]].
- V. Khachatryan *et al.* [CMS], "Measurement of Spin Correlations in $t\bar{t}$ Production using the Matrix Element Method in the Muon+Jets Final State in pp Collisions at $\sqrt{s} = 8$ TeV," *Phys. Lett. B* **758** (2016), 321-346 doi:10.1016/j.physletb.2016.05.005 [arXiv:1511.06170 [hep-ex]].
- V. Khachatryan *et al.* [CMS], "Search for Anomalous Single Top Quark Production in Association with a Photon in pp Collisions at $\sqrt{s} = 8$ TeV," *JHEP* **04** (2016), 035 doi:10.1007/JHEP04(2016)035 [arXiv:1511.03951 [hep-ex]].
- V. Khachatryan *et al.* [CMS], "Search for a Low-Mass Pseudoscalar Higgs Boson Produced in Association with a $b\bar{b}$ Pair in pp Collisions at $\sqrt{s} = 8$ TeV," *Phys. Lett. B* **758** (2016), 296-320 doi:10.1016/j.physletb.2016.05.003 [arXiv:1511.03610 [hep-ex]].
- V. Khachatryan *et al.* [CMS], "Measurement of Top Quark Polarisation in T-Channel Single Top Quark

Production," JHEP **04** (2016), 073 doi:10.1007/JHEP04(2016)073 [arXiv:1511.02138 [hep-ex]].

V. Khachatryan *et al.* [CMS], "Search for Excited Leptons in Proton-Proton Collisions at $\sqrt{s} = 8$ TeV," JHEP **03** (2016), 125 doi:10.1007/JHEP03(2016)125 [arXiv:1511.01407 [hep-ex]].

V. Khachatryan *et al.* [CMS], "Reconstruction and identification of τ lepton decays to hadrons and $\nu\tau$ at CMS," JINST **11** (2016) no.01, P01019 doi:10.1088/1748-0221/11/01/P01019 [arXiv:1510.07488 [physics.ins-det]].

V. Khachatryan *et al.* [CMS], "Search for a very light NMSSM Higgs boson produced in decays of the 125 GeV scalar boson and decaying into τ leptons in pp collisions at $\sqrt{s} = 8$ TeV," JHEP **01** (2016), 079 doi:10.1007/JHEP01(2016)079 [arXiv:1510.06534 [hep-ex]].

V. Khachatryan *et al.* [CMS], "Measurement of the top quark pair production cross section in proton-proton collisions at $\sqrt{s} = 13$ TeV," Phys. Rev. Lett. **116** (2016) no.5, 052002 doi:10.1103/PhysRevLett.116.052002 [arXiv:1510.05302 [hep-ex]].

R. Gonzalez Suarez, "Run-1 Single-top measurements at CMS," [arXiv:1510.05235 [hep-ex]].

V. Khachatryan *et al.* [CMS], "Search for a light charged Higgs boson decaying to $c\bar{s}$ in pp collisions at $\sqrt{s} = 8$ TeV," JHEP **12** (2015), 178 doi:10.1007/JHEP12(2015)178 [arXiv:1510.04252 [hep-ex]].

V. Khachatryan *et al.* [CMS], "Transverse momentum spectra of inclusive b jets in pPb collisions at $\sqrt{s_{NN}} = 5.02$ TeV," Phys. Lett. B **754** (2016), 59 doi:10.1016/j.physletb.2016.01.010 [arXiv:1510.03373 [nucl-ex]].

V. Khachatryan *et al.* [CMS], "Measurement of $t\bar{t}$ production with additional jet activity, including b quark jets, in the dilepton decay channel using pp collisions at $\sqrt{s} = 8$ TeV," Eur. Phys. J. C **76** (2016) no.7, 379 doi:10.1140/epjc/s10052-016-4105-x [arXiv:1510.03072 [hep-ex]].

V. Khachatryan *et al.* [CMS], "Measurement of long-range near-side two-particle angular correlations in pp collisions at $\sqrt{s} = 13$ TeV," Phys. Rev. Lett. **116** (2016) no.17, 172302 doi:10.1103/PhysRevLett.116.172302 [arXiv:1510.03068 [nucl-ex]].

V. Khachatryan *et al.* [CMS], "Observation of top quark pairs produced in association with a vector boson in pp collisions at $\sqrt{s} = 8$ TeV," JHEP **01** (2016), 096 doi:10.1007/JHEP01(2016)096 [arXiv:1510.01131 [hep-ex]].

V. Khachatryan *et al.* [CMS], "Searches for a heavy scalar boson H decaying to a pair of 125 GeV Higgs bosons hh or for a heavy pseudoscalar boson A decaying to Zh, in the final states with $h \rightarrow \tau\tau$," Phys. Lett. B **755** (2016), 217-244 doi:10.1016/j.physletb.2016.01.056 [arXiv:1510.01181 [hep-ex]].

V. Khachatryan *et al.* [CMS], "Measurement of transverse momentum relative to dijet systems in PbPb and pp collisions at $\sqrt{s_{NN}} = 2.76$ TeV," JHEP **01** (2016), 006 doi:10.1007/JHEP01(2016)006 [arXiv:1509.09029 [nucl-ex]].

V. Khachatryan *et al.* [CMS], "Search for the production of an excited bottom quark decaying to tW in proton-proton collisions at $\sqrt{s} = 8$ TeV," JHEP **01** (2016), 166 doi:10.1007/JHEP01(2016)166 [arXiv:1509.08141 [hep-ex]].

- V. Khachatryan *et al.* [CMS], "Search for the associated production of a Higgs boson with a single top quark in proton-proton collisions at $\sqrt{s} = 8$ TeV," JHEP **06** (2016), 177 doi:10.1007/JHEP06(2016)177 [arXiv:1509.08159 [hep-ex]].
- V. Khachatryan *et al.* [CMS], "Measurement of the $t\bar{t}$ production cross section in the all-jets final state in pp collisions at $\sqrt{s} = 8$ TeV," Eur. Phys. J. C **76** (2016) no.3, 128 doi:10.1140/epjc/s10052-016-3956-5 [arXiv:1509.06076 [hep-ex]].
- V. Khachatryan *et al.* [CMS], "Search for $W' \rightarrow t\bar{b}$ in proton-proton collisions at $\sqrt{s} = 8$ TeV," JHEP **02** (2016), 122 doi:10.1007/JHEP02(2016)122 [arXiv:1509.06051 [hep-ex]].
- V. Khachatryan *et al.* [CMS], "Measurement of the top quark mass using proton-proton data at $\sqrt{(s)} = 7$ and 8 TeV," Phys. Rev. D **93** (2016) no.7, 072004 doi:10.1103/PhysRevD.93.072004 [arXiv:1509.04044 [hep-ex]].
- V. Khachatryan *et al.* [CMS], "Search for vector-like charge 2/3 T quarks in proton-proton collisions at $\sqrt{s} = 8$ TeV," Phys. Rev. D **93** (2016) no.1, 012003 doi:10.1103/PhysRevD.93.012003 [arXiv:1509.04177 [hep-ex]].
- V. Khachatryan *et al.* [CMS], "Measurement of the inelastic cross section in proton-lead collisions at $\sqrt{s_{NN}} = 5.02$ TeV," Phys. Lett. B **759** (2016), 641-662 doi:10.1016/j.physletb.2016.06.027 [arXiv:1509.03893 [hep-ex]].
- V. Khachatryan *et al.* [CMS], "Search for single production of scalar leptoquarks in proton-proton collisions at $\sqrt{s} = 8$ TeV," Phys. Rev. D **93** (2016) no.3, 032005 [erratum: Phys. Rev. D **95** (2017) no.3, 039906] doi:10.1103/PhysRevD.93.032005 [arXiv:1509.03750 [hep-ex]].
- V. Khachatryan *et al.* [CMS], "Search for pair production of first and second generation leptoquarks in proton-proton collisions at $\sqrt{s} = 8$ TeV," Phys. Rev. D **93** (2016) no.3, 032004 doi:10.1103/PhysRevD.93.032004 [arXiv:1509.03744 [hep-ex]].
- V. Khachatryan *et al.* [CMS], "Measurement of differential cross sections for Higgs boson production in the diphoton decay channel in pp collisions at $\sqrt{s} = 8$ TeV," Eur. Phys. J. C **76** (2016) no.1, 13 doi:10.1140/epjc/s10052-015-3853-3 [arXiv:1508.07819 [hep-ex]].
- V. Khachatryan *et al.* [CMS], "Search for a charged Higgs boson in pp collisions at $\sqrt{s} = 8$ TeV," JHEP **11** (2015), 018 doi:10.1007/JHEP11(2015)018 [arXiv:1508.07774 [hep-ex]].
- V. Khachatryan *et al.* [CMS], "Search for supersymmetry in the vector-boson fusion topology in proton-proton collisions at $\sqrt{s} = 8$ TeV," JHEP **11** (2015), 189 doi:10.1007/JHEP11(2015)189 [arXiv:1508.07628 [hep-ex]].
- V. Khachatryan *et al.* [CMS], "Study of B Meson Production in p+Pb Collisions at $\sqrt{s_{NN}} = 5.02$ TeV Using Exclusive Hadronic Decays," Phys. Rev. Lett. **116** (2016) no.3, 032301 doi:10.1103/PhysRevLett.116.032301 [arXiv:1508.06678 [nucl-ex]].
- V. Khachatryan *et al.* [CMS], "Search for W' decaying to tau lepton and neutrino in proton-proton collisions at $\sqrt{s} = 8$ TeV," Phys. Lett. B **755** (2016), 196-216 doi:10.1016/j.physletb.2016.02.002

[arXiv:1508.04308 [hep-ex]].

V. Khachatryan *et al.* [CMS], "Measurement of the charge asymmetry in top quark pair production in pp collisions at $\sqrt{s} = 8$ TeV using a template method," Phys. Rev. D **93** (2016) no.3, 034014 doi:10.1103/PhysRevD.93.034014 [arXiv:1508.03862 [hep-ex]].

V. Khachatryan *et al.* [CMS], "Search for neutral MSSM Higgs bosons decaying to $\mu^+\mu^-$ in pp collisions at $\sqrt{s} = 7$ and 8 TeV," Phys. Lett. B **752** (2016), 221-246 doi:10.1016/j.physletb.2015.11.042 [arXiv:1508.01437 [hep-ex]].

V. Khachatryan *et al.* [CMS], "Search for supersymmetry in events with a photon, a lepton, and missing transverse momentum in pp collisions at $\sqrt{s} = 8$ TeV," Phys. Lett. B **757** (2016), 6-31 doi:10.1016/j.physletb.2016.03.039 [arXiv:1508.01218 [hep-ex]].

V. Khachatryan *et al.* [CMS], "Angular analysis of the decay $B^0 \rightarrow K^{*0}\mu^+\mu^-$ from pp collisions at $\sqrt{s} = 8$ TeV," Phys. Lett. B **753** (2016), 424-448 doi:10.1016/j.physletb.2015.12.020 [arXiv:1507.08126 [hep-ex]].

V. Khachatryan *et al.* [CMS], "Measurement of the CP-violating weak phase ϕ_s and the decay width difference $\Delta\Gamma_s$ using the $B_s^0 \rightarrow J/\psi\phi(1020)$ decay channel in pp collisions at $\sqrt{s} = 8$ TeV," Phys. Lett. B **757** (2016), 97-120 doi:10.1016/j.physletb.2016.03.046 [arXiv:1507.07527 [hep-ex]].

V. Khachatryan *et al.* [CMS], "Measurement of the underlying event activity using charged-particle jets in proton-proton collisions at $\sqrt{s} = 2.76$ TeV," JHEP **09** (2015), 137 doi:10.1007/JHEP09(2015)137 [arXiv:1507.07229 [hep-ex]].

V. Khachatryan *et al.* [CMS], "Search for pair-produced vectorlike B quarks in proton-proton collisions at $\sqrt{s}=8$ TeV," Phys. Rev. D **93** (2016) no.11, 112009 doi:10.1103/PhysRevD.93.112009 [arXiv:1507.07129 [hep-ex]].

V. Khachatryan *et al.* [CMS], "Limits on the Higgs boson lifetime and width from its decay to four charged leptons," Phys. Rev. D **92** (2015) no.7, 072010 doi:10.1103/PhysRevD.92.072010 [arXiv:1507.06656 [hep-ex]].

V. Khachatryan *et al.* [CMS], "Pseudorapidity distribution of charged hadrons in proton-proton collisions at $\sqrt{s} = 13$ TeV," Phys. Lett. B **751** (2015), 143-163 doi:10.1016/j.physletb.2015.10.004 [arXiv:1507.05915 [hep-ex]].

V. Khachatryan *et al.* [CMS], "Measurement of the W^+W^- cross section in pp collisions at $\sqrt{s} = 8$ TeV and limits on anomalous gauge couplings," Eur. Phys. J. C **76** (2016) no.7, 401 doi:10.1140/epjc/s10052-016-4219-1 [arXiv:1507.03268 [hep-ex]].

V. Khachatryan *et al.* [CMS], "Inclusive and differential measurements of the $t\bar{t}$ charge asymmetry in pp collisions at $\sqrt{s} = 8$ TeV," Phys. Lett. B **757** (2016), 154-179 doi:10.1016/j.physletb.2016.03.060 [arXiv:1507.03119 [hep-ex]].

V. Khachatryan *et al.* [CMS], "Search for supersymmetry with photons in pp collisions at $\sqrt{s}=8$ TeV," Phys. Rev. D **92** (2015) no.7, 072006 doi:10.1103/PhysRevD.92.072006 [arXiv:1507.02898 [hep-ex]].

- V. Khachatryan *et al.* [CMS], "Search for a Higgs boson decaying into $\gamma^*\gamma \rightarrow \ell\ell\gamma$ with low dilepton mass in pp collisions at $\sqrt{s} = 8$ TeV," Phys. Lett. B **753** (2016), 341-362 doi:10.1016/j.physletb.2015.12.039 [arXiv:1507.03031 [hep-ex]].
- V. Khachatryan *et al.* [CMS], "Search for exotic decays of a Higgs boson into undetectable particles and one or more photons," Phys. Lett. B **753** (2016), 363-388 doi:10.1016/j.physletb.2015.12.017 [arXiv:1507.00359 [hep-ex]].
- V. Khachatryan *et al.* [CMS], "Production of leading charged particles and leading charged-particle jets at small transverse momenta in pp collisions at $\sqrt{s} = 8$ TeV," Phys. Rev. D **92** (2015) no.11, 112001 doi:10.1103/PhysRevD.92.112001 [arXiv:1507.00233 [hep-ex]].
- V. Khachatryan *et al.* [CMS], "Search for neutral MSSM Higgs bosons decaying into a pair of bottom quarks," JHEP **11** (2015), 071 doi:10.1007/JHEP11(2015)071 [arXiv:1506.08329 [hep-ex]].
- V. Khachatryan *et al.* [CMS], "Search for resonant $t\bar{t}$ production in proton-proton collisions at $\sqrt{s} = 8$ TeV," Phys. Rev. D **93** (2016) no.1, 012001 doi:10.1103/PhysRevD.93.012001 [arXiv:1506.03062 [hep-ex]].
- V. Khachatryan *et al.* [CMS], "Search for diphoton resonances in the mass range from 150 to 850 GeV in pp collisions at $\sqrt{s} = 8$ TeV," Phys. Lett. B **750** (2015), 494-519 doi:10.1016/j.physletb.2015.09.062 [arXiv:1506.02301 [hep-ex]].
- V. Khachatryan *et al.* [CMS], "Search for a massive resonance decaying into a Higgs boson and a W or Z boson in hadronic final states in proton-proton collisions at $\sqrt{s} = 8$ TeV," JHEP **02** (2016), 145 doi:10.1007/JHEP02(2016)145 [arXiv:1506.01443 [hep-ex]].
- V. Khachatryan *et al.* [CMS], "Search for the standard model Higgs boson produced through vector boson fusion and decaying to $b\bar{b}$," Phys. Rev. D **92** (2015) no.3, 032008 doi:10.1103/PhysRevD.92.032008 [arXiv:1506.01010 [hep-ex]].
- V. Khachatryan *et al.* [CMS], "A search for pair production of new light bosons decaying into muons," Phys. Lett. B **752** (2016), 146-168 doi:10.1016/j.physletb.2015.10.067 [arXiv:1506.00424 [hep-ex]].
- V. Khachatryan *et al.* [CMS], "Search for neutral color-octet weak-triplet scalar particles in proton-proton collisions at $\sqrt{s} = 8$ TeV," JHEP **09** (2015), 201 doi:10.1007/JHEP09(2015)201 [arXiv:1505.08118 [hep-ex]].
- V. Khachatryan *et al.* [CMS], "Comparison of the $Z/\gamma^* + \text{jets}$ to $\gamma + \text{jets}$ cross sections in pp collisions at $\sqrt{s} = 8$ TeV," JHEP **10** (2015), 128 [erratum: JHEP **04** (2016), 010] doi:10.1007/JHEP04(2016)010 [arXiv:1505.06520 [hep-ex]].
- V. Khachatryan *et al.* [CMS], "Measurement of the differential cross section for top quark pair production in pp collisions at $\sqrt{s} = 8$ TeV," Eur. Phys. J. C **75** (2015) no.11, 542 doi:10.1140/epjc/s10052-015-3709-x [arXiv:1505.04480 [hep-ex]].
- W. Adam *et al.* [CMS Tracker Group], "Impact of low-dose electron irradiation on n^+p silicon strip sensors," Nucl. Instrum. Meth. A **803** (2015), 100-112 doi:10.1016/j.nima.2015.08.026 [arXiv:1505.02672 [physics.ins-det]].

- W. Adam *et al.* [CMS Tracker Group], “Trapping in proton irradiated p^+n^- silicon sensors at fluences anticipated at the HL-LHC outer tracker,” *JINST* **11** (2016) no.04, P04023 doi:10.1088/1748-0221/11/04/P04023 [arXiv:1505.01824 [physics.ins-det]].
- V. Khachatryan *et al.* [CMS], “Search for a pseudoscalar boson decaying into a Z boson and the 125 GeV Higgs boson in $l^+l^-b\bar{b}$ final states,” *Phys. Lett. B* **748** (2015), 221-243 doi:10.1016/j.physletb.2015.07.010 [arXiv:1504.04710 [hep-ex]].
- V. Khachatryan *et al.* [CMS], “Angular coefficients of Z bosons produced in pp collisions at $\sqrt{s} = 8$ TeV and decaying to $\mu^+\mu^-$ as a function of transverse momentum and rapidity,” *Phys. Lett. B* **750** (2015), 154-175 doi:10.1016/j.physletb.2015.08.061 [arXiv:1504.03512 [hep-ex]].
- V. Khachatryan *et al.* [CMS], “Measurement of the Z boson differential cross section in transverse momentum and rapidity in proton–proton collisions at 8 TeV,” *Phys. Lett. B* **749** (2015), 187-209 doi:10.1016/j.physletb.2015.07.065 [arXiv:1504.03511 [hep-ex]].
- V. Khachatryan *et al.* [CMS], “Search for the production of dark matter in association with top-quark pairs in the single-lepton final state in proton-proton collisions at $\sqrt{s} = 8$ TeV,” *JHEP* **06** (2015), 121 doi:10.1007/JHEP06(2015)121 [arXiv:1504.03198 [hep-ex]].
- V. Khachatryan *et al.* [CMS], “Search for a Higgs boson in the mass range from 145 to 1000 GeV decaying to a pair of W or Z bosons,” *JHEP* **10** (2015), 144 doi:10.1007/JHEP10(2015)144 [arXiv:1504.00936 [hep-ex]].
- V. Khachatryan *et al.* [CMS], “Search for Third-Generation Scalar Leptoquarks in the $t\tau$ Channel in Proton-Proton Collisions at $\sqrt{s} = 8$ TeV,” *JHEP* **07** (2015), 042 [erratum: *JHEP* **11** (2016), 056] doi:10.1007/JHEP11(2016)056 [arXiv:1503.09049 [hep-ex]].
- V. Khachatryan *et al.* [CMS], “Measurement of diffraction dissociation cross sections in pp collisions at $\sqrt{s} = 7$ TeV,” *Phys. Rev. D* **92** (2015) no.1, 012003 doi:10.1103/PhysRevD.92.012003 [arXiv:1503.08689 [hep-ex]].
- V. Khachatryan *et al.* [CMS], “Searches for third-generation squark production in fully hadronic final states in proton-proton collisions at $\sqrt{s} = 8$ TeV,” *JHEP* **06** (2015), 116 doi:10.1007/JHEP06(2015)116 [arXiv:1503.08037 [hep-ex]].
- G. Aad *et al.* [ATLAS and CMS], “Combined Measurement of the Higgs Boson Mass in pp Collisions at $\sqrt{s} = 7$ and 8 TeV with the ATLAS and CMS Experiments,” *Phys. Rev. Lett.* **114** (2015), 191803 doi:10.1103/PhysRevLett.114.191803 [arXiv:1503.07589 [hep-ex]].
- V. Khachatryan *et al.* [CMS], “Study of W boson production in pPb collisions at $\sqrt{s_{NN}} = 5.02$ TeV,” *Phys. Lett. B* **750** (2015), 565-586 doi:10.1016/j.physletb.2015.09.057 [arXiv:1503.05825 [nucl-ex]].
- V. Khachatryan *et al.* [CMS], “Measurements of the $Z Z$ production cross sections in the $2l2\nu$ channel in proton–proton collisions at $\sqrt{s} = 7$ and 8 TeV and combined constraints on triple gauge couplings,” *Eur. Phys. J. C* **75** (2015) no.10, 511 doi:10.1140/epjc/s10052-015-3706-0 [arXiv:1503.05467 [hep-ex]].
- V. Khachatryan *et al.* [CMS], “Search for resonant pair production of Higgs bosons decaying to two bottom quark–antiquark pairs in proton–proton collisions at 8 TeV,” *Phys. Lett. B* **749** (2015), 560-582 doi:10.1016/j.physletb.2015.08.047 [arXiv:1503.04114 [hep-ex]].

- V. Khachatryan *et al.* [CMS], "Search for vector-like T quarks decaying to top quarks and Higgs bosons in the all-hadronic channel using jet substructure," JHEP **06** (2015), 080 doi:10.1007/JHEP06(2015)080 [arXiv:1503.01952 [hep-ex]].
- V. Khachatryan *et al.* [CMS], "Evidence for transverse momentum and pseudorapidity dependent event plane fluctuations in PbPb and pPb collisions," Phys. Rev. C **92** (2015) no.3, 034911 doi:10.1103/PhysRevC.92.034911 [arXiv:1503.01692 [nucl-ex]].
- V. Khachatryan *et al.* [CMS], "Study of Final-State Radiation in Decays of Z Bosons Produced in pp Collisions at 7 TeV," Phys. Rev. D **91** (2015) no.9, 092012 doi:10.1103/PhysRevD.91.092012 [arXiv:1502.07940 [hep-ex]].
- V. Khachatryan *et al.* [CMS], "Search for Lepton-Flavour-Violating Decays of the Higgs Boson," Phys. Lett. B **749** (2015), 337-362 doi:10.1016/j.physletb.2015.07.053 [arXiv:1502.07400 [hep-ex]].
- V. Khachatryan *et al.* [CMS], "Search for Physics Beyond the Standard Model in Events with Two Leptons, Jets, and Missing Transverse Momentum in pp Collisions at $\sqrt{s} = 8$ TeV," JHEP **04** (2015), 124 doi:10.1007/JHEP04(2015)124 [arXiv:1502.06031 [hep-ex]].
- V. Khachatryan *et al.* [CMS], "Measurement of the $Z\gamma$ Production Cross Section in pp Collisions at 8 TeV and Search for Anomalous Triple Gauge Boson Couplings," JHEP **04** (2015), 164 doi:10.1007/JHEP04(2015)164 [arXiv:1502.05664 [hep-ex]].
- V. Khachatryan *et al.* [CMS], "Evidence for Collective Multiparticle Correlations in p-Pb Collisions," Phys. Rev. Lett. **115** (2015) no.1, 012301 doi:10.1103/PhysRevLett.115.012301 [arXiv:1502.05382 [nucl-ex]].
- V. Khachatryan *et al.* [CMS], "Nuclear Effects on the Transverse Momentum Spectra of Charged Particles in pPb Collisions at $\sqrt{s_{NN}} = 5.02$ TeV," Eur. Phys. J. C **75** (2015) no.5, 237 doi:10.1140/epjc/s10052-015-3435-4 [arXiv:1502.05387 [nucl-ex]].
- V. Khachatryan *et al.* [CMS], "Search for Narrow High-Mass Resonances in Proton-Proton Collisions at $\sqrt{s} = 8$ TeV Decaying to a Z and a Higgs Boson," Phys. Lett. B **748** (2015), 255-277 doi:10.1016/j.physletb.2015.07.011 [arXiv:1502.04994 [hep-ex]].
- V. Khachatryan *et al.* [CMS], "Distributions of Topological Observables in Inclusive Three- and Four-Jet Events in pp Collisions at $\sqrt{s} = 7$ TeV," Eur. Phys. J. C **75** (2015) no.7, 302 doi:10.1140/epjc/s10052-015-3491-9 [arXiv:1502.04785 [hep-ex]].
- V. Khachatryan *et al.* [CMS], "Searches for Supersymmetry using the M_{T2} Variable in Hadronic Events Produced in pp Collisions at 8 TeV," JHEP **05** (2015), 078 doi:10.1007/JHEP05(2015)078 [arXiv:1502.04358 [hep-ex]].
- V. Khachatryan *et al.* [CMS], "Measurement of J/ψ and $\psi(2S)$ Prompt Double-Differential Cross Sections in pp Collisions at $\sqrt{s}=7$ TeV," Phys. Rev. Lett. **114** (2015) no.19, 191802 doi:10.1103/PhysRevLett.114.191802 [arXiv:1502.04155 [hep-ex]].
- V. Khachatryan *et al.* [CMS], "Search for a Standard Model Higgs Boson Produced in Association

- with a Top-Quark Pair and Decaying to Bottom Quarks Using a Matrix Element Method,” *Eur. Phys. J. C* **75** (2015) no.6, 251 doi:10.1140/epjc/s10052-015-3454-1 [arXiv:1502.02485 [hep-ex]].
- V. Khachatryan *et al.* [CMS], “Performance of Photon Reconstruction and Identification with the CMS Detector in Proton-Proton Collisions at $\sqrt{s} = 8$ TeV,” *JINST* **10** (2015) no.08, P08010 doi:10.1088/1748-0221/10/08/P08010 [arXiv:1502.02702 [physics.ins-det]].
- V. Khachatryan *et al.* [CMS], “Constraints on the pMSSM, AMSB model and on other models from the search for long-lived charged particles in proton-proton collisions at $\sqrt{s} = 8$ TeV,” *Eur. Phys. J. C* **75** (2015) no.7, 325 doi:10.1140/epjc/s10052-015-3533-3 [arXiv:1502.02522 [hep-ex]].
- V. Khachatryan *et al.* [CMS], “Performance of Electron Reconstruction and Selection with the CMS Detector in Proton-Proton Collisions at $\sqrt{s} = 8$ TeV,” *JINST* **10** (2015) no.06, P06005 doi:10.1088/1748-0221/10/06/P06005 [arXiv:1502.02701 [physics.ins-det]].
- V. Khachatryan *et al.* [CMS], “Search for Supersymmetry Using Razor Variables in Events with b -Tagged Jets in pp Collisions at $\sqrt{s} = 8$ TeV,” *Phys. Rev. D* **91** (2015), 052018 doi:10.1103/PhysRevD.91.052018 [arXiv:1502.00300 [hep-ex]].
- V. Khachatryan *et al.* [CMS], “Measurements of the $\Upsilon(1S)$, $\Upsilon(2S)$, and $\Upsilon(3S)$ differential cross sections in pp collisions at $\sqrt{s} = 7$ TeV,” *Phys. Lett. B* **749** (2015), 14-34 doi:10.1016/j.physletb.2015.07.037 [arXiv:1501.07750 [hep-ex]].
- V. Khachatryan *et al.* [CMS], “Measurement of the ratio $B(B_s^0 \rightarrow J/\psi f_0(980)) / B(B_s^0 \rightarrow J/\psi \phi(1020))$ in pp collisions at $\sqrt{s} = 7$ TeV,” *Phys. Lett. B* **756** (2016), 84-102 doi:10.1016/j.physletb.2016.02.047 [arXiv:1501.06089 [hep-ex]].
- V. Khachatryan *et al.* [CMS], “Search for heavy Majorana neutrinos in $\mu^\pm \mu^\pm +$ jets events in proton-proton collisions at $\sqrt{s} = 8$ TeV,” *Phys. Lett. B* **748** (2015), 144-166 doi:10.1016/j.physletb.2015.06.070 [arXiv:1501.05566 [hep-ex]].
- V. Khachatryan *et al.* [CMS], “Search for Decays of Stopped Long-Lived Particles Produced in Proton-Proton Collisions at $\sqrt{s} = 8$ TeV,” *Eur. Phys. J. C* **75** (2015) no.4, 151 doi:10.1140/epjc/s10052-015-3367-z [arXiv:1501.05603 [hep-ex]].
- V. Khachatryan *et al.* [CMS], “Search for resonances and quantum black holes using dijet mass spectra in proton-proton collisions at $\sqrt{s} = 8$ TeV,” *Phys. Rev. D* **91** (2015) no.5, 052009 doi:10.1103/PhysRevD.91.052009 [arXiv:1501.04198 [hep-ex]].
- V. Khachatryan *et al.* [CMS], “Precise determination of the mass of the Higgs boson and tests of compatibility of its couplings with the standard model predictions using proton collisions at 7 and 8 TeV,” *Eur. Phys. J. C* **75** (2015) no.5, 212 doi:10.1140/epjc/s10052-015-3351-7 [arXiv:1412.8662 [hep-ex]].
- V. Khachatryan *et al.* [CMS], “Search for pair-produced resonances decaying to jet pairs in proton-proton collisions at $\sqrt{s} = 8$ TeV,” *Phys. Lett. B* **747** (2015), 98-119 doi:10.1016/j.physletb.2015.04.045 [arXiv:1412.7706 [hep-ex]].
- V. Khachatryan *et al.* [CMS], “Search for physics beyond the standard model in dilepton mass spectra in proton-proton collisions at $\sqrt{s} = 8$ TeV,” *JHEP* **04** (2015), 025 doi:10.1007/JHEP04(2015)025

[arXiv:1412.6302 [hep-ex]].

V. Khachatryan *et al.* [CMS], “Searches for supersymmetry based on events with b jets and four W bosons in pp collisions at 8 TeV,” *Phys. Lett. B* **745** (2015), 5-28 doi:10.1016/j.physletb.2015.04.002 [arXiv:1412.4109 [hep-ex]].

V. Khachatryan *et al.* [CMS], “Measurement of the inclusive 3-jet production differential cross section in proton–proton collisions at 7 TeV and determination of the strong coupling constant in the TeV range,” *Eur. Phys. J. C* **75** (2015) no.5, 186 doi:10.1140/epjc/s10052-015-3376-y [arXiv:1412.1633 [hep-ex]].

V. Khachatryan *et al.* [CMS], “Measurements of differential and double-differential Drell-Yan cross sections in proton-proton collisions at 8 TeV,” *Eur. Phys. J. C* **75** (2015) no.4, 147 doi:10.1140/epjc/s10052-015-3364-2 [arXiv:1412.1115 [hep-ex]].

R. Gonzalez Suarez [ATLAS and CMS], “Inclusive single top cross section at the LHC,” doi:10.3204/DESY-PROC-2014-02/16

V. Khachatryan *et al.* [CMS], “Search for stealth supersymmetry in events with jets, either photons or leptons, and low missing transverse momentum in pp collisions at 8 TeV,” *Phys. Lett. B* **743** (2015), 503-525 doi:10.1016/j.physletb.2015.03.017 [arXiv:1411.7255 [hep-ex]].

V. Khachatryan *et al.* [CMS], “Search for long-lived particles that decay into final states containing two electrons or two muons in proton-proton collisions at $\sqrt{s} = 8$ TeV,” *Phys. Rev. D* **91** (2015) no.5, 052012 doi:10.1103/PhysRevD.91.052012 [arXiv:1411.6977 [hep-ex]].

V. Khachatryan *et al.* [CMS], “Search for Long-Lived Neutral Particles Decaying to Quark-Antiquark Pairs in Proton-Proton Collisions at $\sqrt{s} = 8$ TeV,” *Phys. Rev. D* **91** (2015) no.1, 012007 doi:10.1103/PhysRevD.91.012007 [arXiv:1411.6530 [hep-ex]].

V. Khachatryan *et al.* [CMS], “Search for disappearing tracks in proton-proton collisions at $\sqrt{s} = 8$ TeV,” *JHEP* **01** (2015), 096 doi:10.1007/JHEP01(2015)096 [arXiv:1411.6006 [hep-ex]].

V. Khachatryan *et al.* [CMS], “Measurement of the cross section ratio $\sigma_{t\bar{t}b\bar{b}}/\sigma_{t\bar{t}j\bar{j}}$ in pp collisions at $\sqrt{s} = 8$ TeV,” *Phys. Lett. B* **746** (2015), 132-153 doi:10.1016/j.physletb.2015.04.060 [arXiv:1411.5621 [hep-ex]].

V. Khachatryan *et al.* [CMS and LHCb], “Observation of the rare $B_s^0 \rightarrow \mu^+\mu^-$ decay from the combined analysis of CMS and LHCb data,” *Nature* **522** (2015), 68-72 doi:10.1038/nature14474 [arXiv:1411.4413 [hep-ex]].

V. Khachatryan *et al.* [CMS], “Constraints on the spin-parity and anomalous HVV couplings of the Higgs boson in proton collisions at 7 and 8 TeV,” *Phys. Rev. D* **92** (2015) no.1, 012004 doi:10.1103/PhysRevD.92.012004 [arXiv:1411.3441 [hep-ex]].

V. Khachatryan *et al.* [CMS], “Search for quark contact interactions and extra spatial dimensions using dijet angular distributions in proton–proton collisions at $\sqrt{s} = 8$ TeV,” *Phys. Lett. B* **746** (2015), 79-99 doi:10.1016/j.physletb.2015.04.042 [arXiv:1411.2646 [hep-ex]].

V. Khachatryan *et al.* [CMS], “Performance of the CMS missing transverse momentum reconstruc-

tion in pp data at $\sqrt{s} = 8$ TeV," JINST **10** (2015) no.02, P02006 doi:10.1088/1748-0221/10/02/P02006 [arXiv:1411.0511 [physics.ins-det]].

V. Khachatryan *et al.* [CMS], "Search for new phenomena in monophoton final states in proton-proton collisions at $\sqrt{s} = 8$ TeV," Phys. Lett. B **755** (2016), 102-124 doi:10.1016/j.physletb.2016.01.057 [arXiv:1410.8812 [hep-ex]].

V. Khachatryan *et al.* [CMS], "Search for a standard model-like Higgs boson in the $\mu^+\mu^-$ and e^+e^- decay channels at the LHC," Phys. Lett. B **744** (2015), 184-207 doi:10.1016/j.physletb.2015.03.048 [arXiv:1410.6679 [hep-ex]].

V. Khachatryan *et al.* [CMS], "Constraints on parton distribution functions and extraction of the strong coupling constant from the inclusive jet cross section in pp collisions at $\sqrt{s} = 7$ TeV," Eur. Phys. J. C **75** (2015) no.6, 288 doi:10.1140/epjc/s10052-015-3499-1 [arXiv:1410.6765 [hep-ex]].

V. Khachatryan *et al.* [CMS], "Study of vector boson scattering and search for new physics in events with two same-sign leptons and two jets," Phys. Rev. Lett. **114** (2015) no.5, 051801 doi:10.1103/PhysRevLett.114.051801 [arXiv:1410.6315 [hep-ex]].

V. Khachatryan *et al.* [CMS], "Measurement of the ratio of the production cross sections times branching fractions of $B_c^\pm \rightarrow J/\psi\pi^\pm$ and $B^\pm \rightarrow J/\psi K^\pm$ and $\mathcal{B}(B_c^\pm \rightarrow J/\psi\pi^\pm\pi^\pm\pi^\mp)/\mathcal{B}(B_c^\pm \rightarrow J/\psi\pi^\pm)$ in pp collisions at $\sqrt{s} = 7$ TeV," JHEP **01** (2015), 063 doi:10.1007/JHEP01(2015)063 [arXiv:1410.5729 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "Study of Z production in PbPb and pp collisions at $\sqrt{s_{NN}} = 2.76$ TeV in the dimuon and dielectron decay channels," JHEP **03** (2015), 022 doi:10.1007/JHEP03(2015)022 [arXiv:1410.4825 [nucl-ex]].

V. Khachatryan *et al.* [CMS], "Identification techniques for highly boosted W bosons that decay into hadrons," JHEP **12** (2014), 017 doi:10.1007/JHEP12(2014)017 [arXiv:1410.4227 [hep-ex]].

V. Khachatryan *et al.* [CMS], "Measurement of electroweak production of two jets in association with a Z boson in proton-proton collisions at $\sqrt{s} = 8$ TeV," Eur. Phys. J. C **75** (2015) no.2, 66 doi:10.1140/epjc/s10052-014-3232-5 [arXiv:1410.3153 [hep-ex]].

V. Khachatryan *et al.* [CMS], "Searches for heavy Higgs bosons in two-Higgs-doublet models and for $t\beta ch$ decay using multilepton and diphoton final states in pp collisions at 8 TeV," Phys. Rev. D **90** (2014), 112013 doi:10.1103/PhysRevD.90.112013 [arXiv:1410.2751 [hep-ex]].

V. Khachatryan *et al.* [CMS], "Measurement of Prompt $\psi(2S) \rightarrow J/\psi$ Yield Ratios in Pb-Pb and $p-p$ Collisions at $\sqrt{s_{NN}} = 2.76$ TeV," Phys. Rev. Lett. **113** (2014) no.26, 262301 doi:10.1103/PhysRevLett.113.262301 [arXiv:1410.1804 [nucl-ex]].

V. Khachatryan *et al.* [CMS], "Search for Monotop Signatures in Proton-Proton Collisions at $\sqrt{s} = 8$ TeV," Phys. Rev. Lett. **114** (2015) no.10, 101801 doi:10.1103/PhysRevLett.114.101801 [arXiv:1410.1149 [hep-ex]].

V. Khachatryan *et al.* [CMS], "Measurement of the W boson helicity in events with a single reconstructed top quark in pp collisions at $\sqrt{s} = 8$ TeV," JHEP **01** (2015), 053 doi:10.1007/JHEP01(2015)053 [arXiv:1410.1154 [hep-ex]].

- V. Khachatryan *et al.* [CMS], "Search for Standard Model Production of Four Top Quarks in the Lepton + Jets Channel in pp Collisions at $\sqrt{s} = 8$ TeV," JHEP **11** (2014), 154 doi:10.1007/JHEP11(2014)154 [arXiv:1409.7339 [hep-ex]].
- V. Khachatryan *et al.* [CMS], "Measurement of the production cross section ratio $\sigma(Xb2(1P)) / \sigma(Xb1(1P))$ in pp collisions at $\sqrt{s} = 8$ TeV," Phys. Lett. B **743** (2015), 383-402 doi:10.1016/j.physletb.2015.02.048 [arXiv:1409.5761 [hep-ex]].
- V. Khachatryan *et al.* [CMS], "Search for Displaced Supersymmetry in events with an electron and a muon with large impact parameters," Phys. Rev. Lett. **114** (2015) no.6, 061801 doi:10.1103/PhysRevLett.114.061801 [arXiv:1409.4789 [hep-ex]].
- V. Khachatryan *et al.* [CMS], "Long-range two-particle correlations of strange hadrons with charged particles in pPb and PbPb collisions at LHC energies," Phys. Lett. B **742** (2015), 200-224 doi:10.1016/j.physletb.2015.01.034 [arXiv:1409.3392 [nucl-ex]].
- V. Khachatryan *et al.* [CMS], "Searches for electroweak neutralino and chargino production in channels with Higgs, Z, and W bosons in pp collisions at 8 TeV," Phys. Rev. D **90** (2014) no.9, 092007 doi:10.1103/PhysRevD.90.092007 [arXiv:1409.3168 [hep-ex]].
- V. Khachatryan *et al.* [CMS], "Search for dark matter, extra dimensions, and unparticles in monojet events in proton-proton collisions at $\sqrt{s} = 8$ TeV," Eur. Phys. J. C **75** (2015) no.5, 235 doi:10.1140/epjc/s10052-015-3451-4 [arXiv:1408.3583 [hep-ex]].
- V. Khachatryan *et al.* [CMS], "Search for neutral MSSM Higgs bosons decaying to a pair of tau leptons in pp collisions," JHEP **10** (2014), 160 doi:10.1007/JHEP10(2014)160 [arXiv:1408.3316 [hep-ex]].
- V. Khachatryan *et al.* [CMS], "Measurements of jet multiplicity and differential production cross sections of Z + jets events in proton-proton collisions at $\sqrt{s} = 7$ TeV," Phys. Rev. D **91** (2015) no.5, 052008 doi:10.1103/PhysRevD.91.052008 [arXiv:1408.3104 [hep-ex]].
- V. Khachatryan *et al.* [CMS], "Search for physics beyond the standard model in final states with a lepton and missing transverse energy in proton-proton collisions at $\sqrt{s} = 8$ TeV," Phys. Rev. D **91** (2015) no.9, 092005 doi:10.1103/PhysRevD.91.092005 [arXiv:1408.2745 [hep-ex]].
- V. Khachatryan *et al.* [CMS], "Search for the associated production of the Higgs boson with a top-quark pair," JHEP **09** (2014), 087 [erratum: JHEP **10** (2014), 106] doi:10.1007/JHEP09(2014)087 [arXiv:1408.1682 [hep-ex]].
- V. Khachatryan *et al.* [CMS], "Search for pair production of third-generation scalar leptoquarks and top squarks in proton-proton collisions at $\sqrt{s}=8$ TeV," Phys. Lett. B **739** (2014), 229-249 doi:10.1016/j.physletb.2014.10.063 [arXiv:1408.0806 [hep-ex]].
- V. Khachatryan *et al.* [CMS], "Measurement of the $t\bar{t}$ Production Cross Section in pp Collisions at $\sqrt{s} = 8$ TeV in Dilepton Final States Containing One τ Lepton," Phys. Lett. B **739** (2014), 23-43 doi:10.1016/j.physletb.2014.10.032 [arXiv:1407.6643 [hep-ex]].
- V. Khachatryan *et al.* [CMS], "Search for Heavy Neutrinos and W Bosons with Right-Handed Couplings in

- Proton-Proton Collisions at $\sqrt{s} = 8$ TeV," *Eur. Phys. J. C* **74** (2014) no.11, 3149 doi:10.1140/epjc/s10052-014-3149-z [arXiv:1407.3683 [hep-ex]].
- V. Khachatryan *et al.* [CMS], "Search for New Resonances Decaying via WZ to Leptons in Proton-Proton Collisions at $\sqrt{s} = 8$ TeV," *Phys. Lett. B* **740** (2015), 83-104 doi:10.1016/j.physletb.2014.11.026 [arXiv:1407.3476 [hep-ex]].
- V. Khachatryan *et al.* [CMS], "Study of Hadronic Event-Shape Variables in Multijet Final States in pp Collisions at $\sqrt{s} = 7$ TeV," *JHEP* **10** (2014), 087 doi:10.1007/JHEP10(2014)087 [arXiv:1407.2856 [hep-ex]].
- V. Khachatryan *et al.* [CMS], "Observation of the Diphoton Decay of the Higgs Boson and Measurement of Its Properties," *Eur. Phys. J. C* **74** (2014) no.10, 3076 doi:10.1140/epjc/s10052-014-3076-z [arXiv:1407.0558 [hep-ex]].
- V. Khachatryan *et al.* [CMS], "Measurement of Top Quark-Antiquark Pair Production in Association with a W or Z Boson in pp Collisions at $\sqrt{s} = 8$ TeV," *Eur. Phys. J. C* **74** (2014) no.9, 3060 doi:10.1140/epjc/s10052-014-3060-7 [arXiv:1406.7830 [hep-ex]].
- V. Khachatryan *et al.* [CMS], "Differential Cross Section Measurements for the Production of a W Boson in Association with Jets in Proton-Proton Collisions at $\sqrt{s} = 7$ TeV," *Phys. Lett. B* **741** (2015), 12-37 doi:10.1016/j.physletb.2014.12.003 [arXiv:1406.7533 [hep-ex]].
- V. Khachatryan *et al.* [CMS], "Search for Excited Quarks in the $\gamma +$ Jet Final State in Proton-Proton Collisions at $\sqrt{s} = 8$ TeV," *Phys. Lett. B* **738** (2014), 274-293 doi:10.1016/j.physletb.2014.09.048 [arXiv:1406.5171 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], "Measurement of Jet Fragmentation in PbPb and pp Collisions at $\sqrt{s_{NN}} = 2.76$ TeV," *Phys. Rev. C* **90** (2014) no.2, 024908 doi:10.1103/PhysRevC.90.024908 [arXiv:1406.0932 [nucl-ex]].
- S. Chatrchyan *et al.* [CMS], "Measurement of the Ratio of Inclusive Jet Cross Sections using the Anti- k_T Algorithm with Radius Parameters $R=0.5$ and 0.7 in pp Collisions at $\sqrt{s} = 7$ TeV," *Phys. Rev. D* **90** (2014) no.7, 072006 doi:10.1103/PhysRevD.90.072006 [arXiv:1406.0324 [hep-ex]].
- V. Khachatryan *et al.* [CMS], "Measurement of Prompt J/ψ Pair Production in pp Collisions at $\sqrt{s} = 7$ TeV," *JHEP* **09** (2014), 094 doi:10.1007/JHEP09(2014)094 [arXiv:1406.0484 [hep-ex]].
- V. Khachatryan *et al.* [CMS], "Measurement of the $pp \rightarrow ZZ$ Production Cross Section and Constraints on Anomalous Triple Gauge Couplings in Four-Lepton Final States at $\sqrt{s} = 8$ TeV," *Phys. Lett. B* **740** (2015), 250-272 [erratum: *Phys. Lett. B* **757** (2016), 569-569] doi:10.1016/j.physletb.2016.04.010 [arXiv:1406.0113 [hep-ex]].
- V. Khachatryan *et al.* [CMS], "Search for jet extinction in the inclusive jet- p_t spectrum from proton-proton collisions at $\sqrt{s} = 8$ TeV," *Phys. Rev. D* **90** (2014) no.3, 032005 doi:10.1103/PhysRevD.90.032005 [arXiv:1405.7653 [hep-ex]].
- V. Khachatryan *et al.* [CMS], "Searches for electroweak production of charginos, neutralinos, and sleptons decaying to leptons and W, Z, and Higgs bosons in pp collisions at 8 TeV," *Eur. Phys. J. C* **74** (2014) no.9, 3036 doi:10.1140/epjc/s10052-014-3036-7 [arXiv:1405.7570 [hep-ex]].

- S. Chatrchyan *et al.* [CMS], "Measurement of differential cross sections for the production of a pair of isolated photons in pp collisions at $\sqrt{s} = 7$ TeV," *Eur. Phys. J. C* **74** (2014) no.11, 3129 doi:10.1140/epjc/s10052-014-3129-3 [arXiv:1405.7225 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], "Description and performance of track and primary-vertex reconstruction with the CMS tracker," *JINST* **9** (2014) no.10, P10009 doi:10.1088/1748-0221/9/10/P10009 [arXiv:1405.6569 [physics.ins-det]].
- V. Khachatryan *et al.* [CMS], "Search for top-squark pairs decaying into Higgs or Z bosons in pp collisions at $\sqrt{s}=8$ TeV," *Phys. Lett. B* **736** (2014), 371-397 doi:10.1016/j.physletb.2014.07.053 [arXiv:1405.3886 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], "Search for supersymmetry with razor variables in pp collisions at $\sqrt{s}=7$ TeV," *Phys. Rev. D* **90** (2014) no.11, 112001 doi:10.1103/PhysRevD.90.112001 [arXiv:1405.3961 [hep-ex]].
- V. Khachatryan *et al.* [CMS], "Constraints on the Higgs boson width from off-shell production and decay to Z-boson pairs," *Phys. Lett. B* **736** (2014), 64-85 doi:10.1016/j.physletb.2014.06.077 [arXiv:1405.3455 [hep-ex]].
- V. Khachatryan *et al.* [CMS], "Search for massive resonances decaying into pairs of boosted bosons in semi-leptonic final states at $\sqrt{s} = 8$ TeV," *JHEP* **08** (2014), 174 doi:10.1007/JHEP08(2014)174 [arXiv:1405.3447 [hep-ex]].
- V. Khachatryan *et al.* [CMS], "Search for massive resonances in dijet systems containing jets tagged as W or Z boson decays in pp collisions at $\sqrt{s} = 8$ TeV," *JHEP* **08** (2014), 173 doi:10.1007/JHEP08(2014)173 [arXiv:1405.1994 [hep-ex]].
- S. Chatrchyan *et al.* [CMS and TOTEM], "Measurement of pseudorapidity distributions of charged particles in proton-proton collisions at $\sqrt{s} = 8$ TeV by the CMS and TOTEM experiments," *Eur. Phys. J. C* **74** (2014) no.10, 3053 doi:10.1140/epjc/s10052-014-3053-6 [arXiv:1405.0722 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], "Search for anomalous production of events with three or more leptons in *pp* collisions at $\sqrt{s} = 8$ TeV," *Phys. Rev. D* **90** (2014), 032006 doi:10.1103/PhysRevD.90.032006 [arXiv:1404.5801 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], "Search for $WW\gamma$ and $WZ\gamma$ production and constraints on anomalous quartic gauge couplings in *pp* collisions at $\sqrt{s} = 8$ TeV," *Phys. Rev. D* **90** (2014) no.3, 032008 doi:10.1103/PhysRevD.90.032008 [arXiv:1404.4619 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], "Measurement of jet multiplicity distributions in $t\bar{t}$ production in pp collisions at $\sqrt{s} = 7$ TeV," *Eur. Phys. J. C* **74** (2015), 3014 [erratum: *Eur. Phys. J. C* **75** (2015) no.5, 216] doi:10.1140/epjc/s10052-014-3014-0 [arXiv:1404.3171 [hep-ex]].
- V. Khachatryan *et al.* [CMS], "Measurement of the ratio $\mathcal{B}(t \rightarrow Wb)/\mathcal{B}(t \rightarrow Wq)$ in pp collisions at $\sqrt{s} = 8$ TeV," *Phys. Lett. B* **736** (2014), 33-57 doi:10.1016/j.physletb.2014.06.076 [arXiv:1404.2292 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], "Search for invisible decays of Higgs bosons in the vector boson fusion and associated ZH production modes," *Eur. Phys. J. C* **74** (2014), 2980 doi:10.1140/epjc/s10052-014-2980-6 [arXiv:1404.1344 [hep-ex]].

- V. Khachatryan *et al.* [CMS], "Measurement of the t-channel single-top-quark production cross section and of the $|V_{tb}|$ CKM matrix element in pp collisions at $\sqrt{s} = 8$ TeV," JHEP **06** (2014), 090 doi:10.1007/JHEP06(2014)090 [arXiv:1403.7366 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], "Measurement of WZ and ZZ production in pp collisions at $\sqrt{s} = 8$ TeV in final states with b-tagged jets," Eur. Phys. J. C **74** (2014) no.8, 2973 doi:10.1140/epjc/s10052-014-2973-5 [arXiv:1403.3047 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], "Alignment of the CMS tracker with LHC and cosmic ray data," JINST **9** (2014), P06009 doi:10.1088/1748-0221/9/06/P06009 [arXiv:1403.2286 [physics.ins-det]].
- S. Chatrchyan *et al.* [CMS], "Search for new physics in the multijet and missing transverse momentum final state in proton-proton collisions at $\sqrt{s} = 8$ TeV," JHEP **06** (2014), 055 doi:10.1007/JHEP06(2014)055 [arXiv:1402.4770 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], "Measurements of the $t\bar{t}$ charge asymmetry using the dilepton decay channel in pp collisions at $\sqrt{s} = 7$ TeV," JHEP **04** (2014), 191 doi:10.1007/JHEP04(2014)191 [arXiv:1402.3803 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], "Search for $W' \rightarrow tb$ decays in the lepton + jets final state in pp collisions at $\sqrt{s} = 8$ TeV," JHEP **05** (2014), 108 doi:10.1007/JHEP05(2014)108 [arXiv:1402.2176 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], "Measurement of the production cross sections for a Z boson and one or more b jets in pp collisions at $\sqrt{s} = 7$ TeV," JHEP **06** (2014), 120 doi:10.1007/JHEP06(2014)120 [arXiv:1402.1521 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], "Measurement of inclusive W and Z boson production cross sections in pp collisions at $\sqrt{s} = 8$ TeV," Phys. Rev. Lett. **112** (2014), 191802 doi:10.1103/PhysRevLett.112.191802 [arXiv:1402.0923 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], "Evidence for the direct decay of the 125 GeV Higgs boson to fermions," Nature Phys. **10** (2014), 557-560 doi:10.1038/nphys3005 [arXiv:1401.6527 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], "Evidence for the 125 GeV Higgs boson decaying to a pair of τ leptons," JHEP **05** (2014), 104 doi:10.1007/JHEP05(2014)104 [arXiv:1401.5041 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], "Determination of the Top-Quark Pole Mass and Strong Coupling Constant from the $t\bar{t}$ Production Cross Section in pp Collisions at $\sqrt{s} = 7$ TeV," Phys. Lett. B **728** (2014), 496-517 [erratum: Phys. Lett. B **738** (2014), 526-528] doi:10.1016/j.physletb.2013.12.009 [arXiv:1307.1907 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], "Studies of dijet transverse momentum balance and pseudorapidity distributions in pPb collisions at $\sqrt{s_{NN}} = 5.02$ TeV," Eur. Phys. J. C **74** (2014) no.7, 2951 doi:10.1140/epjc/s10052-014-2951-y [arXiv:1401.4433 [nucl-ex]].
- S. Chatrchyan *et al.* [CMS], "Observation of the associated production of a single top quark and a W boson in pp collisions at $\sqrt{s} = 8$ TeV," Phys. Rev. Lett. **112** (2014) no.23, 231802 doi:10.1103/PhysRevLett.112.231802 [arXiv:1401.2942 [hep-ex]].

- S. Chatrchyan *et al.* [CMS], "Measurement of the $t\bar{t}$ production cross section in the dilepton channel in pp collisions at $\sqrt{s} = 8$ TeV," JHEP **02** (2014), 024 [erratum: JHEP **02** (2014), 102] doi:10.1007/JHEP02(2014)024 [arXiv:1312.7582 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], "Measurement of the Production Cross Section for a W Boson and Two b Jets in pp Collisions at $\sqrt{s}=7$ TeV," Phys. Lett. B **735** (2014), 204-225 doi:10.1016/j.physletb.2014.06.041 [arXiv:1312.6608 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], "Measurement of Four-Jet Production in Proton-Proton Collisions at $\sqrt{s} = 7$ TeV," Phys. Rev. D **89** (2014) no.9, 092010 doi:10.1103/PhysRevD.89.092010 [arXiv:1312.6440 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], "Event Activity Dependence of Y(nS) Production in $\sqrt{s_{NN}}=5.02$ TeV pPb and $\sqrt{s}=2.76$ TeV pp Collisions," JHEP **04** (2014), 103 doi:10.1007/JHEP04(2014)103 [arXiv:1312.6300 [nucl-ex]].
- S. Chatrchyan *et al.* [CMS], "Measurement of the Muon Charge Asymmetry in Inclusive $pp \rightarrow W + X$ Production at $\sqrt{s} = 7$ TeV and an Improved Determination of Light Parton Distribution Functions," Phys. Rev. D **90** (2014) no.3, 032004 doi:10.1103/PhysRevD.90.032004 [arXiv:1312.6283 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], "Study of Double Parton Scattering Using W + 2-Jet Events in Proton-Proton Collisions at $\sqrt{s} = 7$ TeV," JHEP **03** (2014), 032 doi:10.1007/JHEP03(2014)032 [arXiv:1312.5729 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], "Measurement of the Properties of a Higgs Boson in the Four-Lepton Final State," Phys. Rev. D **89** (2014) no.9, 092007 doi:10.1103/PhysRevD.89.092007 [arXiv:1312.5353 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], "Evidence of b-Jet Quenching in PbPb Collisions at $\sqrt{s_{NN}} = 2.76$ TeV," Phys. Rev. Lett. **113** (2014) no.13, 132301 [erratum: Phys. Rev. Lett. **115** (2015) no.2, 029903] doi:10.1103/PhysRevLett.113.132301 [arXiv:1312.4198 [nucl-ex]].
- S. Chatrchyan *et al.* [CMS], "Search for Flavor-Changing Neutral Currents in Top-Quark Decays $t \rightarrow Zq$ in pp Collisions at $\sqrt{s} = 8$ TeV," Phys. Rev. Lett. **112** (2014) no.17, 171802 doi:10.1103/PhysRevLett.112.171802 [arXiv:1312.4194 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], "Search for Top Squark and Higgsino Production using Diphoton Higgs Boson Decays," Phys. Rev. Lett. **112** (2014), 161802 doi:10.1103/PhysRevLett.112.161802 [arXiv:1312.3310 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], "Search for Top-Quark Partners with Charge 5/3 in the Same-Sign Dilepton Final State," Phys. Rev. Lett. **112** (2014) no.17, 171801 doi:10.1103/PhysRevLett.112.171801 [arXiv:1312.2391 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], "Studies of Azimuthal Dihadron Correlations in Ultra-Central PbPb Collisions at $\sqrt{s_{NN}} = 2.76$ TeV," JHEP **02** (2014), 088 doi:10.1007/JHEP02(2014)088 [arXiv:1312.1845 [nucl-ex]].
- S. Chatrchyan *et al.* [CMS], "Measurement of Higgs Boson Production and Properties in the WW Decay Channel with Leptonic Final States," JHEP **01** (2014), 096 doi:10.1007/JHEP01(2014)096 [arXiv:1312.1129

[hep-ex]].

S. Chatrchyan *et al.* [CMS], “Inclusive Search for a Vector-Like T Quark with Charge $\frac{2}{3}$ in pp Collisions at $\sqrt{s} = 8$ TeV,” *Phys. Lett. B* **729** (2014), 149-171 doi:10.1016/j.physletb.2014.01.006 [arXiv:1311.7667 [hep-ex]].

S. Chatrchyan *et al.* [CMS], “Search for New Physics in Events with Same-Sign Dileptons and Jets in pp Collisions at $\sqrt{s} = 8$ TeV,” *JHEP* **01** (2014), 163 [erratum: *JHEP* **01** (2015), 014] doi:10.1007/JHEP01(2014)163 [arXiv:1311.6736 [hep-ex]].

S. Chatrchyan *et al.* [CMS], “Measurement of the Triple-Differential Cross Section for Photon+Jets Production in Proton-Proton Collisions at $\sqrt{s}=7$ TeV,” *JHEP* **06** (2014), 009 doi:10.1007/JHEP06(2014)009 [arXiv:1311.6141 [hep-ex]].

S. Chatrchyan *et al.* [CMS], “Probing Color Coherence Effects in pp Collisions at $\sqrt{s} = 7$ TeV,” *Eur. Phys. J. C* **74** (2014) no.6, 2901 doi:10.1140/epjc/s10052-014-2901-8 [arXiv:1311.5815 [hep-ex]].

S. Chatrchyan *et al.* [CMS], “Search for Pair Production of Excited Top Quarks in the Lepton + Jets Final State,” *JHEP* **06** (2014), 125 doi:10.1007/JHEP06(2014)125 [arXiv:1311.5357 [hep-ex]].

S. Chatrchyan *et al.* [CMS], “Search for Supersymmetry in pp Collisions at $\sqrt{s}=8$ TeV in Events with a Single Lepton, Large Jet Multiplicity, and Multiple b Jets,” *Phys. Lett. B* **733** (2014), 328-353 doi:10.1016/j.physletb.2014.04.023 [arXiv:1311.4937 [hep-ex]].

S. Chatrchyan *et al.* [CMS], “Measurements of $t\bar{t}$ Spin Correlations and Top-Quark Polarization Using Dilepton Final States in pp Collisions at $\sqrt{s} = 7$ TeV,” *Phys. Rev. Lett.* **112** (2014) no.18, 182001 doi:10.1103/PhysRevLett.112.182001 [arXiv:1311.3924 [hep-ex]].

K. Agashe *et al.* [Top Quark Working Group], “Working Group Report: Top Quark,” [arXiv:1311.2028 [hep-ph]].

S. Chatrchyan *et al.* [CMS], “Searches for Light- and Heavy-Flavour Three-Jet Resonances in pp Collisions at $\sqrt{s} = 8$ TeV,” *Phys. Lett. B* **730** (2014), 193-214 doi:10.1016/j.physletb.2014.01.049 [arXiv:1311.1799 [hep-ex]].

S. Chatrchyan *et al.* [CMS], “Measurement of Higher-Order Harmonic Azimuthal Anisotropy in PbPb Collisions at $\sqrt{s_{NN}} = 2.76$ TeV,” *Phys. Rev. C* **89** (2014) no.4, 044906 doi:10.1103/PhysRevC.89.044906 [arXiv:1310.8651 [nucl-ex]].

S. Chatrchyan *et al.* [CMS], “Measurement of the Differential and Double-Differential Drell-Yan Cross Sections in Proton-Proton Collisions at $\sqrt{s} = 7$ TeV,” *JHEP* **12** (2013), 030 doi:10.1007/JHEP12(2013)030 [arXiv:1310.7291 [hep-ex]].

S. Chatrchyan *et al.* [CMS], “Jet and Underlying Event Properties as a Function of Charged-Particle Multiplicity in Proton-Proton Collisions at $\sqrt{s} = 7$ TeV,” *Eur. Phys. J. C* **73** (2013) no.12, 2674 doi:10.1140/epjc/s10052-013-2674-5 [arXiv:1310.4554 [hep-ex]].

S. Chatrchyan *et al.* [CMS], “Search for the Standard Model Higgs Boson Produced in Association with a W or a Z Boson and Decaying to Bottom Quarks,” *Phys. Rev. D* **89** (2014) no.1, 012003

doi:10.1103/PhysRevD.89.012003 [arXiv:1310.3687 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "Rapidity Distributions in Exclusive $Z + \text{Jet}$ and $\gamma + \text{Jet}$ Events in pp Collisions at $\sqrt{s} = 7$ TeV," Phys. Rev. D **88** (2013) no.11, 112009 doi:10.1103/PhysRevD.88.112009 [arXiv:1310.3082 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "Search for Baryon Number Violation in Top-Quark Decays," Phys. Lett. B **731** (2014), 173-196 doi:10.1016/j.physletb.2014.02.033 [arXiv:1310.1618 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "Measurement of the Cross Section and Angular Correlations for Associated Production of a Z Boson with b Hadrons in pp Collisions at $\sqrt{s} = 7$ TeV," JHEP **12** (2013), 039 doi:10.1007/JHEP12(2013)039 [arXiv:1310.1349 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "Measurement of Associated $W + \text{Charm}$ Production in pp Collisions at $\sqrt{s} = 7$ TeV," JHEP **02** (2014), 013 doi:10.1007/JHEP02(2014)013 [arXiv:1310.1138 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "Modification of Jet Shapes in PbPb Collisions at $\sqrt{s_{NN}} = 2.76$ TeV," Phys. Lett. B **730** (2014), 243-263 doi:10.1016/j.physletb.2014.01.042 [arXiv:1310.0878 [nucl-ex]].

S. Chatrchyan *et al.* [CMS], "Observation of a Peaking Structure in the $J/\psi\phi$ Mass Spectrum from $B^\pm \rightarrow J/\psi\phi K^\pm$ Decays," Phys. Lett. B **734** (2014), 261-281 doi:10.1016/j.physletb.2014.05.055 [arXiv:1309.6920 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "Searches for New Physics using the $t\bar{t}$ Invariant Mass Distribution in pp Collisions at $\sqrt{s}=8$ TeV," Phys. Rev. Lett. **111** (2013) no.21, 211804 [erratum: Phys. Rev. Lett. **112** (2014) no.11, 119903] doi:10.1103/PhysRevLett.111.211804 [arXiv:1309.2030 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "Measurement of the Production Cross Section for $Z\gamma \rightarrow \nu\bar{\nu}\gamma$ in pp Collisions at $\sqrt{s} = 7$ TeV and Limits on $ZZ\gamma$ and $Z\gamma\gamma$ Triple Gauge Boson Couplings," JHEP **10** (2013), 164 doi:10.1007/JHEP10(2013)164 [arXiv:1309.1117 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "Search for a New Bottomonium State Decaying to $\Upsilon(1S)\pi^+\pi^-$ in pp Collisions at $\sqrt{s} = 8$ TeV," Phys. Lett. B **727** (2013), 57-76 doi:10.1016/j.physletb.2013.10.016 [arXiv:1309.0250 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "Measurement of the $W\gamma$ and $Z\gamma$ Inclusive Cross Sections in pp Collisions at $\sqrt{s} = 7$ TeV and Limits on Anomalous Triple Gauge Boson Couplings," Phys. Rev. D **89** (2014) no.9, 092005 doi:10.1103/PhysRevD.89.092005 [arXiv:1308.6832 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "Measurement of the W-Boson Helicity in Top-Quark decays from $t\bar{t}$ Production in Lepton + Jets Events in pp Collisions at $\sqrt{s} = 7$ TeV," JHEP **10** (2013), 167 doi:10.1007/JHEP10(2013)167 [arXiv:1308.3879 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "Angular Analysis and Branching Fraction Measurement of the Decay $B^0 \rightarrow K^{*0}\mu^+\mu^-$," Phys. Lett. B **727** (2013), 77-100 doi:10.1016/j.physletb.2013.10.017 [arXiv:1308.3409 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "Search for Top-Squark Pair Production in the Single-Lepton Final State in pp Collisions at $\sqrt{s} = 8$ TeV," Eur. Phys. J. C **73** (2013) no.12, 2677 doi:10.1140/epjc/s10052-013-2677-2

[arXiv:1308.1586 [hep-ex]].

S. Chatrchyan *et al.* [CMS], “Measurement of the Prompt J/ψ and $\psi(2S)$ Polarizations in pp Collisions at $\sqrt{s} = 7$ TeV,” Phys. Lett. B **727** (2013), 381-402 doi:10.1016/j.physletb.2013.10.055 [arXiv:1307.6070 [hep-ex]].

S. Chatrchyan *et al.* [CMS], “Search for a Higgs Boson Decaying into a Z and a Photon in pp Collisions at $\sqrt{s} = 7$ and 8 TeV,” Phys. Lett. B **726** (2013), 587-609 doi:10.1016/j.physletb.2013.09.057 [arXiv:1307.5515 [hep-ex]].

S. Chatrchyan *et al.* [CMS], “Measurement of the $B_s^0 \rightarrow \mu^+\mu^-$ Branching Fraction and Search for $B^0 \rightarrow \mu^+\mu^-$ with the CMS Experiment,” Phys. Rev. Lett. **111** (2013), 101804 doi:10.1103/PhysRevLett.111.101804 [arXiv:1307.5025 [hep-ex]].

S. Chatrchyan *et al.* [CMS], “Measurement of the Top-Quark Mass in All-Jets $t\bar{t}$ Events in pp Collisions at $\sqrt{s}=7$ TeV,” Eur. Phys. J. C **74** (2014) no.4, 2758 doi:10.1140/epjc/s10052-014-2758-x [arXiv:1307.4617 [hep-ex]].

S. Chatrchyan *et al.* [CMS], “Study of the Production of Charged Pions, Kaons, and Protons in pPb Collisions at $\sqrt{s_{NN}} = 5.02$ TeV,” Eur. Phys. J. C **74** (2014) no.6, 2847 doi:10.1140/epjc/s10052-014-2847-x [arXiv:1307.3442 [hep-ex]].

S. Chatrchyan *et al.* [CMS], “The Performance of the CMS Muon Detector in Proton-Proton Collisions at $\sqrt{s} = 7$ TeV at the LHC,” JINST **8** (2013), P11002 doi:10.1088/1748-0221/8/11/P11002 [arXiv:1306.6905 [physics.ins-det]].

S. Chatrchyan *et al.* [CMS], “Search for Top Squarks in R -Parity-Violating Supersymmetry using Three or More Leptons and B-Tagged Jets,” Phys. Rev. Lett. **111** (2013) no.22, 221801 doi:10.1103/PhysRevLett.111.221801 [arXiv:1306.6643 [hep-ex]].

S. Chatrchyan *et al.* [CMS], “Energy Calibration and Resolution of the CMS Electromagnetic Calorimeter in pp Collisions at $\sqrt{s} = 7$ TeV,” JINST **8** (2013), P09009 doi:10.1088/1748-0221/8/09/P09009 [arXiv:1306.2016 [hep-ex]].

S. Chatrchyan *et al.* [CMS], “Measurement of the W^+W^- Cross Section in pp Collisions at $\sqrt{s} = 7$ TeV and Limits on Anomalous $WW\gamma$ and WWZ Couplings,” Eur. Phys. J. C **73** (2013) no.10, 2610 doi:10.1140/epjc/s10052-013-2610-8 [arXiv:1306.1126 [hep-ex]].

S. Chatrchyan *et al.* [CMS], “Measurement of the Hadronic Activity in Events with a Z and Two Jets and Extraction of the Cross Section for the Electroweak Production of a Z with Two Jets in pp Collisions at $\sqrt{s} = 7$ TeV,” JHEP **10** (2013), 062 doi:10.1007/JHEP10(2013)062 [arXiv:1305.7389 [hep-ex]].

S. Chatrchyan *et al.* [CMS], “Measurement of Neutral Strange Particle Production in the Underlying Event in Proton-Proton Collisions at $\sqrt{s} = 7$ TeV,” Phys. Rev. D **88** (2013), 052001 doi:10.1103/PhysRevD.88.052001 [arXiv:1305.6016 [hep-ex]].

S. Chatrchyan *et al.* [CMS], “Study of Exclusive Two-Photon Production of W^+W^- in pp Collisions at $\sqrt{s} = 7$ TeV and Constraints on Anomalous Quartic Gauge Couplings,” JHEP **07** (2013), 116 doi:10.1007/JHEP07(2013)116 [arXiv:1305.5596 [hep-ex]].

- S. Chatrchyan *et al.* [CMS], "Search for Gluino Mediated Bottom- and Top-Squark Production in Multijet Final States in pp Collisions at 8 TeV," Phys. Lett. B **725** (2013), 243-270 doi:10.1016/j.physletb.2013.06.058 [arXiv:1305.2390 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], "Searches for Long-Lived Charged Particles in pp Collisions at $\sqrt{s}=7$ and 8 TeV," JHEP **07** (2013), 122 doi:10.1007/JHEP07(2013)122 [arXiv:1305.0491 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], "Multiplicity and Transverse Momentum Dependence of Two- and Four-Particle Correlations in pPb and PbPb Collisions," Phys. Lett. B **724** (2013), 213-240 doi:10.1016/j.physletb.2013.06.028 [arXiv:1305.0609 [nucl-ex]].
- S. Chatrchyan *et al.* [CMS], "Measurement of the Λ_b^0 Lifetime in pp Collisions at $\sqrt{s} = 7$ TeV," JHEP **07** (2013), 163 doi:10.1007/JHEP07(2013)163 [arXiv:1304.7495 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], "Measurement of the Ratio of the Inclusive 3-Jet Cross Section to the Inclusive 2-Jet Cross Section in pp Collisions at $\sqrt{s} = 7$ TeV and First Determination of the Strong Coupling Constant in the TeV Range," Eur. Phys. J. C **73** (2013) no.10, 2604 doi:10.1140/epjc/s10052-013-2604-6 [arXiv:1304.7498 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], "Measurement of Masses in the $t\bar{t}$ System by Kinematic Endpoints in pp Collisions at $\sqrt{s} = 7$ TeV," Eur. Phys. J. C **73** (2013), 2494 doi:10.1140/epjc/s10052-013-2494-7 [arXiv:1304.5783 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], "Search for a Standard-Model-Like Higgs Boson with a Mass in the Range 145 to 1000 GeV at the LHC," Eur. Phys. J. C **73** (2013), 2469 doi:10.1140/epjc/s10052-013-2469-8 [arXiv:1304.0213 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], "Measurement of the $\Upsilon(1S)$, $\Upsilon(2S)$, and $\Upsilon(3S)$ Cross Sections in pp Collisions at $\sqrt{s} = 7$ TeV," Phys. Lett. B **727** (2013), 101-125 doi:10.1016/j.physletb.2013.10.033 [arXiv:1303.5900 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], "Search for Microscopic Black Holes in pp Collisions at $\sqrt{s} = 8$ TeV," JHEP **07** (2013), 178 doi:10.1007/JHEP07(2013)178 [arXiv:1303.5338 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], "Studies of Jet Mass in Dijet and W/Z + Jet Events," JHEP **05** (2013), 090 doi:10.1007/JHEP05(2013)090 [arXiv:1303.4811 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], "Observation of a New Boson with Mass Near 125 GeV in pp Collisions at $\sqrt{s} = 7$ and 8 TeV," JHEP **06** (2013), 081 doi:10.1007/JHEP06(2013)081 [arXiv:1303.4571 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], "Measurement of associated production of vector bosons and top quark-antiquark pairs at $\sqrt{s} = 7$ TeV," Phys. Rev. Lett. **110** (2013), 172002 doi:10.1103/PhysRevLett.110.172002 [arXiv:1303.3239 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], "Search for Supersymmetry in Hadronic Final States with Missing Transverse Energy Using the Variables α_T and b-Quark Multiplicity in pp collisions at $\sqrt{s} = 8$ TeV," Eur. Phys. J. C **73** (2013) no.9, 2568 doi:10.1140/epjc/s10052-013-2568-6 [arXiv:1303.2985 [hep-ex]].

- S. Chatrchyan *et al.* [CMS], "Search for the Standard Model Higgs Boson Produced in Association with a Top-Quark Pair in pp Collisions at the LHC," JHEP **05** (2013), 145 doi:10.1007/JHEP05(2013)145 [arXiv:1303.0763 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], "Search for Narrow Resonances Using the Dijet Mass Spectrum in pp Collisions at $\sqrt{s}=8$ TeV," Phys. Rev. D **87** (2013) no.11, 114015 doi:10.1103/PhysRevD.87.114015 [arXiv:1302.4794 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], "Measurement of the $X(3872)$ Production Cross Section Via Decays to $J/\psi\pi^+\pi^-$ in pp collisions at $\sqrt{s} = 7$ TeV," JHEP **04** (2013), 154 doi:10.1007/JHEP04(2013)154 [arXiv:1302.3968 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], "Search for New Physics in Final States with a Lepton and Missing Transverse Energy in pp Collisions at the LHC," Phys. Rev. D **87** (2013) no.7, 072005 doi:10.1103/PhysRevD.87.072005 [arXiv:1302.2812 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], "Search for a Higgs Boson Decaying into a b-Quark Pair and Produced in Association with b Quarks in Proton-Proton Collisions at 7 TeV," Phys. Lett. B **722** (2013), 207-232 doi:10.1016/j.physletb.2013.04.017 [arXiv:1302.2892 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], "Study of the Underlying Event at Forward Rapidity in pp Collisions at $\sqrt{s} = 0.9, 2.76,$ and 7 TeV," JHEP **04** (2013), 072 doi:10.1007/JHEP04(2013)072 [arXiv:1302.2394 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], "Searches for Higgs Bosons in pp Collisions at $\sqrt{s} = 7$ and 8 TeV in the Context of Four-Generation and Fermiophobic Models," Phys. Lett. B **725** (2013), 36-59 doi:10.1016/j.physletb.2013.06.043 [arXiv:1302.1764 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], "Measurement of the $t\bar{t}$ Production Cross Section in the All-Jet Final State in pp Collisions at $\sqrt{s} = 7$ TeV," JHEP **05** (2013), 065 doi:10.1007/JHEP05(2013)065 [arXiv:1302.0508 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], "Search for Pair-Produced Dijet Resonances in Four-Jet Final States in pp Collisions at $\sqrt{s}=7$ TeV," Phys. Rev. Lett. **110** (2013) no.14, 141802 doi:10.1103/PhysRevLett.110.141802 [arXiv:1302.0531 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], "Measurement of the $t\bar{t}$ Production Cross Section in the τ +Jets Channel in pp Collisions at $\sqrt{s} = 7$ TeV," Eur. Phys. J. C **73** (2013) no.4, 2386 doi:10.1140/epjc/s10052-013-2386-x [arXiv:1301.5755 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], "Search for Contact Interactions Using the Inclusive Jet p_T Spectrum in pp Collisions at $\sqrt{s} = 7$ TeV," Phys. Rev. D **87** (2013) no.5, 052017 doi:10.1103/PhysRevD.87.052017 [arXiv:1301.5023 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], "Measurement of W^+W^- and ZZ Production Cross Sections in pp Collisions at $\sqrt{s} = 8TeV$," Phys. Lett. B **721** (2013), 190-211 doi:10.1016/j.physletb.2013.03.027 [arXiv:1301.4698 [hep-ex]].

- S. Chatrchyan *et al.* [CMS], “Event Shapes and Azimuthal Correlations in $Z + \text{Jets}$ Events in pp Collisions at $\sqrt{s} = 7$ TeV,” *Phys. Lett. B* **722** (2013), 238-261 doi:10.1016/j.physletb.2013.04.025 [arXiv:1301.1646 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], “Interpretation of Searches for Supersymmetry with Simplified Models,” *Phys. Rev. D* **88** (2013) no.5, 052017 doi:10.1103/PhysRevD.88.052017 [arXiv:1301.2175 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], “Search for Physics Beyond the Standard Model in Events with τ Leptons, Jets, and Large Transverse Momentum Imbalance in pp Collisions at $\sqrt{s} = 7$ TeV,” *Eur. Phys. J. C* **73** (2013), 2493 doi:10.1140/epjc/s10052-013-2493-8 [arXiv:1301.3792 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], “Search for Supersymmetry in Events with Opposite-Sign Dileptons and Missing Transverse Energy Using an Artificial Neural Network,” *Phys. Rev. D* **87** (2013) no.7, 072001 doi:10.1103/PhysRevD.87.072001 [arXiv:1301.0916 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], “Search for Supersymmetry in pp Collisions at $\sqrt{s} = 7$ TeV in Events with a Single Lepton, Jets, and Missing Transverse Momentum,” *Eur. Phys. J. C* **73** (2013), 2404 doi:10.1140/epjc/s10052-013-2404-z [arXiv:1212.6428 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], “Inclusive Search for Supersymmetry Using the Razor Variables in pp Collisions at $\sqrt{s} = 7$ TeV,” *Phys. Rev. Lett.* **111** (2013) no.8, 081802 doi:10.1103/PhysRevLett.111.081802 [arXiv:1212.6961 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], “Measurements of Differential Jet Cross Sections in Proton-Proton Collisions at $\sqrt{s} = 7$ TeV with the CMS Detector,” *Phys. Rev. D* **87** (2013) no.11, 112002 [erratum: *Phys. Rev. D* **87** (2013) no.11, 119902] doi:10.1103/PhysRevD.87.112002 [arXiv:1212.6660 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], “Search for New Physics in Events with Same-Sign Dileptons and b Jets in pp Collisions at $\sqrt{s} = 8$ TeV,” *JHEP* **03** (2013), 037 [erratum: *JHEP* **07** (2013), 041] doi:10.1007/JHEP03(2013)037 [arXiv:1212.6194 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], “Measurement of the $t\bar{t}$ Production Cross Section in pp Collisions at $\sqrt{s} = 7$ TeV with Lepton + Jets Final States,” *Phys. Lett. B* **720** (2013), 83-104 doi:10.1016/j.physletb.2013.02.021 [arXiv:1212.6682 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], “Search for Heavy Narrow Dilepton Resonances in pp Collisions at $\sqrt{s} = 7$ TeV and $\sqrt{s} = 8$ TeV,” *Phys. Lett. B* **720** (2013), 63-82 doi:10.1016/j.physletb.2013.02.003 [arXiv:1212.6175 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], “Study of the Mass and Spin-Parity of the Higgs Boson Candidate Via Its Decays to Z Boson Pairs,” *Phys. Rev. Lett.* **110** (2013) no.8, 081803 doi:10.1103/PhysRevLett.110.081803 [arXiv:1212.6639 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], “Search for Heavy Resonances in the W/Z -Tagged Dijet Mass Spectrum in pp Collisions at 7 TeV,” *Phys. Lett. B* **723** (2013), 280-301 doi:10.1016/j.physletb.2013.05.040 [arXiv:1212.1910 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], “Search for Long-Lived Particles Decaying to Photons and Missing Energy in Proton-Proton Collisions at $\sqrt{s} = 7$ TeV,” *Phys. Lett. B* **722** (2013), 273-294 doi:10.1016/j.physletb.2013.04.027

[arXiv:1212.1838 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "Search for Contact Interactions in $\mu^+\mu^-$ Events in pp Collisions at $\sqrt{s} = 7$ TeV," Phys. Rev. D **87** (2013) no.3, 032001 doi:10.1103/PhysRevD.87.032001 [arXiv:1212.4563 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "Identification of b-Quark Jets with the CMS Experiment," JINST **8** (2013), P04013 doi:10.1088/1748-0221/8/04/P04013 [arXiv:1211.4462 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "Search in Leptonic Channels for Heavy Resonances Decaying to Long-Lived Neutral Particles," JHEP **02** (2013), 085 doi:10.1007/JHEP02(2013)085 [arXiv:1211.2472 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "Search for Exotic Resonances Decaying into WZ/ZZ in pp Collisions at $\sqrt{s} = 7$ TeV," JHEP **02** (2013), 036 doi:10.1007/JHEP02(2013)036 [arXiv:1211.5779 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "Search for New Physics in Events with Photons, Jets, and Missing Transverse Energy in pp Collisions at $\sqrt{s} = 7$ TeV," JHEP **03** (2013), 111 doi:10.1007/JHEP03(2013)111 [arXiv:1211.4784 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "Search for Z' Resonances Decaying to $t\bar{t}$ in Dilepton + Jets Final States in pp Collisions at $\sqrt{s} = 7$ TeV," Phys. Rev. D **87** (2013) no.7, 072002 doi:10.1103/PhysRevD.87.072002 [arXiv:1211.3338 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "Measurement of the ZZ Production Cross Section and Search for Anomalous Couplings in $2|2|'$ Final States in pp Collisions at $\sqrt{s} = 7$ TeV," JHEP **01** (2013), 063 doi:10.1007/JHEP01(2013)063 [arXiv:1211.4890 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "Search for Supersymmetry in Final States with a Single Lepton, b -Quark Jets, and Missing Transverse Energy in Proton-Proton Collisions at $\sqrt{s} = 7$ TeV," Phys. Rev. D **87** (2013) no.5, 052006 doi:10.1103/PhysRevD.87.052006 [arXiv:1211.3143 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "Measurement of Differential Top-Quark Pair Production Cross Sections in pp collisions at $\sqrt{s} = 7$ TeV," Eur. Phys. J. C **73** (2013) no.3, 2339 doi:10.1140/epjc/s10052-013-2339-4 [arXiv:1211.2220 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "Search for a Non-Standard-Model Higgs Boson Decaying to a Pair of New Light Bosons in Four-Muon Final States," Phys. Lett. B **726** (2013), 564-586 doi:10.1016/j.physletb.2013.09.009 [arXiv:1210.7619 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "Search for Supersymmetry in Events with Photons and Low Missing Transverse Energy in pp Collisions at $\sqrt{s} = 7$ TeV," Phys. Lett. B **719** (2013), 42-61 doi:10.1016/j.physletb.2012.12.055 [arXiv:1210.2052 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "Search for Anomalous Production of Highly Boosted Z Bosons Decaying to $\mu^+\mu^-$ in Proton-Proton Collisions at $\sqrt{s} = 7$ TeV," Phys. Lett. B **722** (2013), 28-47 doi:10.1016/j.physletb.2013.03.037 [arXiv:1210.0867 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "Search for Pair Production of Third-Generation Leptoquarks and Top Squarks in pp Collisions at $\sqrt{s} = 7$ TeV," Phys. Rev. Lett. **110** (2013) no.8, 081801 doi:10.1103/PhysRevLett.110.081801

[arXiv:1210.5629 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "Measurement of the Sum of WW and WZ Production with W +Dijet Events in pp Collisions at $\sqrt{s} = 7$ TeV," *Eur. Phys. J. C* **73** (2013) no.2, 2283 doi:10.1140/epjc/s10052-013-2283-3 [arXiv:1210.7544 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "Search for Fractionally Charged Particles in pp Collisions at $\sqrt{s} = 7$ TeV," *Phys. Rev. D* **87** (2013) no.9, 092008 doi:10.1103/PhysRevD.87.092008 [arXiv:1210.2311 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "Search for Third-Generation Leptoquarks and Scalar Bottom Quarks in pp Collisions at $\sqrt{s} = 7$ TeV," *JHEP* **12** (2012), 055 doi:10.1007/JHEP12(2012)055 [arXiv:1210.5627 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "Search for Heavy Lepton Partners of Neutrinos in Proton-Proton Collisions in the Context of the Type III Seesaw Mechanism," *Phys. Lett. B* **718** (2012), 348-368 doi:10.1016/j.physletb.2012.10.070 [arXiv:1210.1797 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "Measurement of the Relative Prompt Production Rate of χ_{c2} and χ_{c1} in pp Collisions at $\sqrt{s} = 7$ TeV," *Eur. Phys. J. C* **72** (2012), 2251 doi:10.1140/epjc/s10052-012-2251-3 [arXiv:1210.0875 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "Measurement of the Inelastic Proton-Proton Cross Section at $\sqrt{s} = 7$ TeV," *Phys. Lett. B* **722** (2013), 5-27 doi:10.1016/j.physletb.2013.03.024 [arXiv:1210.6718 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "Observation of Long-Range Near-Side Angular Correlations in Proton-Lead Collisions at the LHC," *Phys. Lett. B* **718** (2013), 795-814 doi:10.1016/j.physletb.2012.11.025 [arXiv:1210.5482 [nucl-ex]].

S. Chatrchyan *et al.* [CMS], "Search for Supersymmetry in Final States with Missing Transverse Energy and 0, 1, 2, or at Least 3 b -Quark Jets in 7 TeV pp Collisions using the Variable α_T ," *JHEP* **01** (2013), 077 doi:10.1007/JHEP01(2013)077 [arXiv:1210.8115 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "Search for Heavy Quarks Decaying into a Top Quark and a W or Z Boson using Lepton + Jets Events in pp Collisions at $\sqrt{s} = 7$ TeV," *JHEP* **01** (2013), 154 doi:10.1007/JHEP01(2013)154 [arXiv:1210.7471 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "Search for Narrow Resonances and Quantum Black Holes in Inclusive and b -Tagged Dijet Mass Spectra from pp Collisions at $\sqrt{s} = 7$ TeV," *JHEP* **01** (2013), 013 doi:10.1007/JHEP01(2013)013 [arXiv:1210.2387 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "Search for excited leptons in pp collisions at $\sqrt{s} = 7$ TeV," *Phys. Lett. B* **720** (2013), 309-329 doi:10.1016/j.physletb.2013.02.031 [arXiv:1210.2422 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "Search for Heavy Neutrinos and W_R Bosons with Right-Handed Couplings in a Left-Right Symmetric Model in pp Collisions at $\sqrt{s} = 7$ TeV," *Phys. Rev. Lett.* **109** (2012), 261802 doi:10.1103/PhysRevLett.109.261802 [arXiv:1210.2402 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "Observation of Z Decays to Four Leptons with the CMS Detector at the LHC," *JHEP* **12** (2012), 034 doi:10.1007/JHEP12(2012)034 [arXiv:1210.3844 [hep-ex]].

- S. Chatrchyan *et al.* [CMS], "Search for the Standard Model Higgs Boson Produced in Association with W and Z Bosons in pp Collisions at $\sqrt{s} = 7$ TeV," JHEP **11** (2012), 088 doi:10.1007/JHEP11(2012)088 [arXiv:1209.3937 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], "Search for Resonant $t\bar{t}$ Production in Lepton+Jets Events in pp Collisions at $\sqrt{s} = 7$ TeV," JHEP **12** (2012), 015 doi:10.1007/JHEP12(2012)015 [arXiv:1209.4397 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], "Measurement of the Single-Top-Quark t -Channel Cross Section in pp Collisions at $\sqrt{s} = 7$ TeV," JHEP **12** (2012), 035 doi:10.1007/JHEP12(2012)035 [arXiv:1209.4533 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], "Evidence for Associated Production of a Single Top Quark and W Boson in pp Collisions at $\sqrt{s} = 7$ TeV," Phys. Rev. Lett. **110** (2013), 022003 doi:10.1103/PhysRevLett.110.022003 [arXiv:1209.3489 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], "Search for a narrow spin-2 resonance decaying to a pair of Z vector bosons in the semileptonic final state," Phys. Lett. B **718** (2013), 1208-1228 doi:10.1016/j.physletb.2012.11.063 [arXiv:1209.3807 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], "Observation of a Diffractive Contribution to Dijet Production in Proton-Proton Collisions at $\sqrt{s} = 7$ TeV," Phys. Rev. D **87** (2013) no.1, 012006 doi:10.1103/PhysRevD.87.012006 [arXiv:1209.1805 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], "Search for Exclusive or Semi-Exclusive Photon Pair Production and Observation of Exclusive and Semi-Exclusive Electron Pair Production in pp Collisions at $\sqrt{s} = 7$ TeV," JHEP **11** (2012), 080 doi:10.1007/JHEP11(2012)080 [arXiv:1209.1666 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], "Measurement of the Top-Quark Mass in $t\bar{t}$ Events with Lepton+Jets Final States in pp Collisions at $\sqrt{s} = 7$ TeV," JHEP **12** (2012), 105 doi:10.1007/JHEP12(2012)105 [arXiv:1209.2319 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], "Search for electroweak production of charginos and neutralinos using leptonic final states in pp collisions at $\sqrt{s} = 7$ TeV," JHEP **11** (2012), 147 doi:10.1007/JHEP11(2012)147 [arXiv:1209.6620 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], "Search for Pair Produced Fourth-Generation Up-Type Quarks in pp Collisions at $\sqrt{s} = 7$ TeV with a Lepton in the Final State," Phys. Lett. B **718** (2012), 307-328 doi:10.1016/j.physletb.2012.10.038 [arXiv:1209.0471 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], "Combined Search for the Quarks of a Sequential Fourth Generation," Phys. Rev. D **86** (2012), 112003 doi:10.1103/PhysRevD.86.112003 [arXiv:1209.1062 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], "Measurement of the Top-Quark Mass in $t\bar{t}$ Events with Dilepton Final States in pp Collisions at $\sqrt{s} = 7$ TeV," Eur. Phys. J. C **72** (2012), 2202 doi:10.1140/epjc/s10052-012-2202-z [arXiv:1209.2393 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], "Measurement of the $Y(1S)$, $Y(2S)$ and $Y(3S)$ Polarizations in pp Collisions at $\sqrt{s} = 7$ TeV," Phys. Rev. Lett. **110** (2013) no.8, 081802 doi:10.1103/PhysRevLett.110.081802

[arXiv:1209.2922 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "Measurement of the Azimuthal Anisotropy of Neutral Pions in PbPb collisions at $\sqrt{s_{NN}} = 2.76$ TeV," Phys. Rev. Lett. **110** (2013) no.4, 042301 doi:10.1103/PhysRevLett.110.042301 [arXiv:1208.2470 [nucl-ex]].

S. Chatrchyan *et al.* [CMS], "Observation of Sequential Upsilon Suppression in PbPb Collisions," Phys. Rev. Lett. **109** (2012), 222301 [erratum: Phys. Rev. Lett. **120** (2018) no.19, 199903] doi:10.1103/PhysRevLett.109.222301 [arXiv:1208.2826 [nucl-ex]].

S. Chatrchyan *et al.* [CMS], "Search for Flavor Changing Neutral Currents in Top Quark Decays in pp Collisions at 7 TeV," Phys. Lett. B **718** (2013), 1252-1272 doi:10.1016/j.physletb.2012.12.045 [arXiv:1208.0957 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "Search for Three-Jet Resonances in pp Collisions at $\sqrt{s} = 7$ TeV," Phys. Lett. B **718** (2012), 329-347 doi:10.1016/j.physletb.2012.10.048 [arXiv:1208.2931 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "Measurement of the $t\bar{t}$ Production Cross Section in the Dilepton Channel in pp Collisions at $\sqrt{s} = 7$ TeV," JHEP **11** (2012), 067 doi:10.1007/JHEP11(2012)067 [arXiv:1208.2671 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "Study of the Dijet Mass Spectrum in $pp \rightarrow W + \text{Jets}$ Events at $\sqrt{s} = 7$ TeV," Phys. Rev. Lett. **109** (2012), 251801 doi:10.1103/PhysRevLett.109.251801 [arXiv:1208.3477 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "Search for Supersymmetry in Events with b-Quark Jets and Missing Transverse Energy in pp Collisions at 7 TeV," Phys. Rev. D **86** (2012), 072010 doi:10.1103/PhysRevD.86.072010 [arXiv:1208.4859 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "Search for a W' Boson Decaying to a Bottom Quark and a Top Quark in pp Collisions at $\sqrt{s} = 7$ TeV," Phys. Lett. B **718** (2013), 1229-1251 doi:10.1016/j.physletb.2012.12.008 [arXiv:1208.0956 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "Search for a Fermiophobic Higgs Boson in pp Collisions at $\sqrt{s} = 7$ TeV," JHEP **09** (2012), 111 doi:10.1007/JHEP09(2012)111 [arXiv:1207.1130 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "Inclusive and Differential Measurements of the $t\bar{t}$ Charge Asymmetry in Proton-Proton Collisions at $\sqrt{s} = 7$ TeV," Phys. Lett. B **717** (2012), 129-150 doi:10.1016/j.physletb.2012.09.028 [arXiv:1207.0065 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "Forward-Backward Asymmetry of Drell-Yan Lepton Pairs in pp Collisions at $\sqrt{s} = 7$ TeV," Phys. Lett. B **718** (2013), 752-772 doi:10.1016/j.physletb.2012.10.082 [arXiv:1207.3973 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "A Search for a Doubly-Charged Higgs Boson in pp Collisions at $\sqrt{s} = 7$ TeV," Eur. Phys. J. C **72** (2012), 2189 doi:10.1140/epjc/s10052-012-2189-5 [arXiv:1207.2666 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "Measurement of the Underlying Event Activity in pp Collisions at $\sqrt{s} = 0.9$ and 7 TeV with the Novel Jet-Area/Median Approach," JHEP **08** (2012), 130 doi:10.1007/JHEP08(2012)130 [arXiv:1207.2392 [hep-ex]].

- S. Chatrchyan *et al.* [CMS], "Search for heavy Majorana Neutrinos in $\mu^\pm\mu^\pm +$ Jets and $e^\pm e^\pm +$ Jets Events in pp Collisions at $\sqrt{s} = 7$ TeV," Phys. Lett. B **717** (2012), 109-128 doi:10.1016/j.physletb.2012.09.012 [arXiv:1207.6079 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], "Study of the Inclusive Production of Charged Pions, Kaons, and Protons in pp Collisions at $\sqrt{s} = 0.9, 2.76,$ and 7 TeV," Eur. Phys. J. C **72** (2012), 2164 doi:10.1140/epjc/s10052-012-2164-1 [arXiv:1207.4724 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], "Search for Supersymmetry in Hadronic Final States using MT_2 in pp Collisions at $\sqrt{s} = 7$ TeV," JHEP **10** (2012), 018 doi:10.1007/JHEP10(2012)018 [arXiv:1207.1798 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], "Search for Stopped Long-Lived Particles Produced in pp Collisions at $\sqrt{s} = 7$ TeV," JHEP **08** (2012), 026 doi:10.1007/JHEP08(2012)026 [arXiv:1207.0106 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], "Search for New Physics in the Multijet and Missing Transverse Momentum Final State in Proton-Proton Collisions at $\sqrt{s} = 7$ TeV," Phys. Rev. Lett. **109** (2012), 171803 doi:10.1103/PhysRevLett.109.171803 [arXiv:1207.1898 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], "Search for New Physics with Long-Lived Particles Decaying to Photons and Missing Energy in pp Collisions at $\sqrt{s} = 7$ TeV," JHEP **11** (2012), 172 doi:10.1007/JHEP11(2012)172 [arXiv:1207.0627 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], "Search for Pair Production of First- and Second-Generation Scalar Leptoquarks in pp Collisions at $\sqrt{s} = 7$ TeV," Phys. Rev. D **86** (2012), 052013 doi:10.1103/PhysRevD.86.052013 [arXiv:1207.5406 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], "Observation of a New Boson at a Mass of 125 GeV with the CMS Experiment at the LHC," Phys. Lett. B **716** (2012), 30-61 doi:10.1016/j.physletb.2012.08.021 [arXiv:1207.7235 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], "Search for a W' or Techni- ρ Decaying into WZ in pp Collisions at $\sqrt{s} = 7$ TeV," Phys. Rev. Lett. **109** (2012), 141801 doi:10.1103/PhysRevLett.109.141801 [arXiv:1206.0433 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], "Search for Dark Matter and Large Extra Dimensions in Monojet Events in pp Collisions at $\sqrt{s} = 7$ TeV," JHEP **09** (2012), 094 doi:10.1007/JHEP09(2012)094 [arXiv:1206.5663 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], "Measurement of the Electron Charge Asymmetry in Inclusive W Production in pp Collisions at $\sqrt{s} = 7$ TeV," Phys. Rev. Lett. **109** (2012), 111806 doi:10.1103/PhysRevLett.109.111806 [arXiv:1206.2598 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], "Search for High-Mass Resonances Decaying into τ -Lepton Pairs in pp Collisions at $\sqrt{s} = 7$ TeV," Phys. Lett. B **716** (2012), 82-102 doi:10.1016/j.physletb.2012.07.062 [arXiv:1206.1725 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], "Search for Charge-Asymmetric Production of W' Bosons in $t\bar{t} +$ Jet Events

- from pp Collisions at $\sqrt{s} = 7$ TeV," Phys. Lett. B **717** (2012), 351-370 doi:10.1016/j.physletb.2012.09.048 [arXiv:1206.3921 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], "Search for Narrow Resonances in Dilepton Mass Spectra in pp Collisions at $\sqrt{s} = 7$ TeV," Phys. Lett. B **714** (2012), 158-179 doi:10.1016/j.physletb.2012.06.051 [arXiv:1206.1849 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], "Search for New Physics in Events with Opposite-Sign Leptons, Jets, and Missing Transverse Energy in pp Collisions at $\sqrt{s} = 7$ TeV," Phys. Lett. B **718** (2013), 815-840 doi:10.1016/j.physletb.2012.11.036 [arXiv:1206.3949 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], "Performance of CMS Muon Reconstruction in pp Collision Events at $\sqrt{s} = 7$ TeV," JINST **7** (2012), P10002 doi:10.1088/1748-0221/7/10/P10002 [arXiv:1206.4071 [physics.ins-det]].
- S. Chatrchyan *et al.* [CMS], "Search for a Light Pseudoscalar Higgs Boson in the Dimuon Decay Channel in pp Collisions at $\sqrt{s} = 7$ TeV," Phys. Rev. Lett. **109** (2012), 121801 doi:10.1103/PhysRevLett.109.121801 [arXiv:1206.6326 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], "Measurement of the pseudorapidity and centrality dependence of the transverse energy density in PbPb collisions at $\sqrt{s_{NN}} = 2.76$ TeV," Phys. Rev. Lett. **109** (2012), 152303 doi:10.1103/PhysRevLett.109.152303 [arXiv:1205.2488 [nucl-ex]].
- S. Chatrchyan *et al.* [CMS], "Search for new physics in events with same-sign dileptons and b -tagged jets in pp collisions at $\sqrt{s} = 7$ TeV," JHEP **08** (2012), 110 doi:10.1007/JHEP08(2012)110 [arXiv:1205.3933 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], "Measurement of jet fragmentation into charged particles in pp and PbPb collisions at $\sqrt{s_{NN}} = 2.76$ TeV," JHEP **10** (2012), 087 doi:10.1007/JHEP10(2012)087 [arXiv:1205.5872 [nucl-ex]].
- S. Chatrchyan *et al.* [CMS], "Measurement of the Λ_b cross section and the $\bar{\Lambda}_b$ to Λ_b ratio with $J/\Psi\Lambda$ decays in pp collisions at $\sqrt{s} = 7$ TeV," Phys. Lett. B **714** (2012), 136-157 doi:10.1016/j.physletb.2012.05.063 [arXiv:1205.0594 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], "Search for heavy long-lived charged particles in pp collisions at $\sqrt{s} = 7$ TeV," Phys. Lett. B **713** (2012), 408-433 doi:10.1016/j.physletb.2012.06.023 [arXiv:1205.0272 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], "Search for new physics with same-sign isolated dilepton events with jets and missing transverse energy," Phys. Rev. Lett. **109** (2012), 071803 doi:10.1103/PhysRevLett.109.071803 [arXiv:1205.6615 [hep-ex]].
- R. Gonzalez Suarez [ATLAS and CMS], "Single top Production at $\sqrt{s} = 7$ TeV," [arXiv:1205.2786 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], "Study of W boson production in PbPb and pp collisions at $\sqrt{s_{NN}} = 2.76$ TeV," Phys. Lett. B **715** (2012), 66-87 doi:10.1016/j.physletb.2012.07.025 [arXiv:1205.6334 [nucl-ex]].
- S. Chatrchyan *et al.* [CMS], "Studies of jet quenching using isolated-photon+jet correlations in PbPb and pp collisions at $\sqrt{s_{NN}} = 2.76$ TeV," Phys. Lett. B **718** (2013), 773-794 doi:10.1016/j.physletb.2012.11.003

[arXiv:1205.0206 [nucl-ex]].

S. Chatrchyan *et al.* [CMS], "Search for a light charged Higgs boson in top quark decays in pp collisions at $\sqrt{s} = 7$ TeV," JHEP **07** (2012), 143 doi:10.1007/JHEP07(2012)143 [arXiv:1205.5736 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "Search for physics beyond the standard model in events with a Z boson, jets, and missing transverse energy in pp collisions at $\sqrt{s} = 7$ TeV," Phys. Lett. B **716** (2012), 260-284 doi:10.1016/j.physletb.2012.08.026 [arXiv:1204.3774 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "Measurement of the underlying event in the Drell-Yan process in proton-proton collisions at $\sqrt{s} = 7$ TeV," Eur. Phys. J. C **72** (2012), 2080 doi:10.1140/epjc/s10052-012-2080-4 [arXiv:1204.1411 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "Measurement of the mass difference between top and antitop quarks," JHEP **06** (2012), 109 doi:10.1007/JHEP06(2012)109 [arXiv:1204.2807 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "Measurement of the Z/γ^*+b -jet cross section in pp collisions at $\sqrt{s} = 7$ TeV," JHEP **06** (2012), 126 doi:10.1007/JHEP06(2012)126 [arXiv:1204.1643 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "Observation of a new $\Xi(b)$ baryon," Phys. Rev. Lett. **108** (2012), 252002 doi:10.1103/PhysRevLett.108.252002 [arXiv:1204.5955 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "Search for Anomalous $t\bar{t}$ Production in the Highly-Boosted All-Hadronic Final State," JHEP **09** (2012), 029 [erratum: JHEP **03** (2014), 132] doi:10.1007/JHEP09(2012)029 [arXiv:1204.2488 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "Ratios of dijet production cross sections as a function of the absolute difference in rapidity between jets in proton-proton collisions at $\sqrt{s} = 7$ TeV," Eur. Phys. J. C **72** (2012), 2216 doi:10.1140/epjc/s10052-012-2216-6 [arXiv:1204.0696 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "Search for leptonic decays of W' bosons in pp collisions at $\sqrt{s} = 7$ TeV," JHEP **08** (2012), 023 doi:10.1007/JHEP08(2012)023 [arXiv:1204.4764 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "Azimuthal anisotropy of charged particles at high transverse momenta in PbPb collisions at $\sqrt{s_{NN}} = 2.76$ TeV," Phys. Rev. Lett. **109** (2012), 022301 doi:10.1103/PhysRevLett.109.022301 [arXiv:1204.1850 [nucl-ex]].

S. Chatrchyan *et al.* [CMS], "Search for Dark Matter and Large Extra Dimensions in pp Collisions Yielding a Photon and Missing Transverse Energy," Phys. Rev. Lett. **108** (2012), 261803 doi:10.1103/PhysRevLett.108.261803 [arXiv:1204.0821 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "Search for heavy bottom-like quarks in 4.9 inverse femtobarns of pp collisions at $\sqrt{s} = 7$ TeV," JHEP **05** (2012), 123 doi:10.1007/JHEP05(2012)123 [arXiv:1204.1088 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "Shape, Transverse Size, and Charged Hadron Multiplicity of Jets in pp Collisions at 7 TeV," JHEP **06** (2012), 160 doi:10.1007/JHEP06(2012)160 [arXiv:1204.3170 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "Search for anomalous production of multilepton events in pp collisions at

$\sqrt{s} = 7$ TeV," JHEP **06** (2012), 169 doi:10.1007/JHEP06(2012)169 [arXiv:1204.5341 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "Measurement of the elliptic anisotropy of charged particles produced in PbPb collisions at $\sqrt{s_{NN}}=2.76$ TeV," Phys. Rev. C **87** (2013) no.1, 014902 doi:10.1103/PhysRevC.87.014902 [arXiv:1204.1409 [nucl-ex]].

S. Chatrchyan *et al.* [CMS], "Search for $B_s^0 \rightarrow \mu^+ \mu^-$ and $B^0 \rightarrow \mu^+ \mu^-$ decays," JHEP **04** (2012), 033 doi:10.1007/JHEP04(2012)033 [arXiv:1203.3976 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "Measurement of the cross section for production of bb^- bar X , decaying to muons in pp collisions at $\sqrt{s} = 7$ TeV," JHEP **06** (2012), 110 doi:10.1007/JHEP06(2012)110 [arXiv:1203.3458 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "Measurement of the top quark pair production cross section in pp collisions at $\sqrt{s} = 7$ TeV in dilepton final states containing a τ ," Phys. Rev. D **85** (2012), 112007 doi:10.1103/PhysRevD.85.112007 [arXiv:1203.6810 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "Search for heavy, top-like quark pair production in the dilepton final state in pp collisions at $\sqrt{s} = 7$ TeV," Phys. Lett. B **716** (2012), 103-121 doi:10.1016/j.physletb.2012.07.059 [arXiv:1203.5410 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "Search for microscopic black holes in pp collisions at $\sqrt{s} = 7$ TeV," JHEP **04** (2012), 061 doi:10.1007/JHEP04(2012)061 [arXiv:1202.6396 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "Jet momentum dependence of jet quenching in PbPb collisions at $\sqrt{s_{NN}} = 2.76$ TeV," Phys. Lett. B **712** (2012), 176-197 doi:10.1016/j.physletb.2012.04.058 [arXiv:1202.5022 [nucl-ex]].

S. Chatrchyan *et al.* [CMS], "Search for a Higgs boson in the decay channel H to $ZZ(*)$ to q qbar $\ell^- \ell^+$ in pp collisions at $\sqrt{s} = 7$ TeV," JHEP **04** (2012), 036 doi:10.1007/JHEP04(2012)036 [arXiv:1202.1416 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "Search for large extra dimensions in dimuon and dielectron events in pp collisions at $\sqrt{s} = 7$ TeV," Phys. Lett. B **711** (2012), 15-34 doi:10.1016/j.physletb.2012.03.029 [arXiv:1202.3827 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "Search for the standard model Higgs boson decaying to bottom quarks in pp collisions at $\sqrt{s} = 7$ TeV," Phys. Lett. B **710** (2012), 284-306 doi:10.1016/j.physletb.2012.02.085 [arXiv:1202.4195 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "Measurement of the inclusive production cross sections for forward jets and for dijet events with one forward and one central jet in pp collisions at $\sqrt{s} = 7$ TeV," JHEP **06** (2012), 036 doi:10.1007/JHEP06(2012)036 [arXiv:1202.0704 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "Study of high-pT charged particle suppression in PbPb compared to pp collisions at $\sqrt{s_{NN}} = 2.76$ TeV," Eur. Phys. J. C **72** (2012), 1945 doi:10.1140/epjc/s10052-012-1945-x [arXiv:1202.2554 [nucl-ex]].

S. Chatrchyan *et al.* [CMS], "Search for neutral Higgs bosons decaying to tau pairs in pp collisions

- at $\sqrt{s} = 7$ TeV," Phys. Lett. B **713** (2012), 68-90 doi:10.1016/j.physletb.2012.05.028 [arXiv:1202.4083 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], "Search for the standard model Higgs boson decaying into two photons in pp collisions at $\sqrt{s} = 7$ TeV," Phys. Lett. B **710** (2012), 403-425 doi:10.1016/j.physletb.2012.03.003 [arXiv:1202.1487 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], "Search for quark compositeness in dijet angular distributions from pp collisions at $\sqrt{s} = 7$ TeV," JHEP **05** (2012), 055 doi:10.1007/JHEP05(2012)055 [arXiv:1202.5535 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], "Search for the standard model Higgs boson decaying to W^+W^- in the fully leptonic final state in pp collisions at $\sqrt{s} = 7$ TeV," Phys. Lett. B **710** (2012), 91-113 doi:10.1016/j.physletb.2012.02.076 [arXiv:1202.1489 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], "Inclusive b -jet production in pp collisions at $\sqrt{s} = 7$ TeV," JHEP **04** (2012), 084 doi:10.1007/JHEP04(2012)084 [arXiv:1202.4617 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], "Search for the standard model Higgs boson in the H to ZZ to $2\ell 2\nu$ channel in pp collisions at $\sqrt{s} = 7$ TeV," JHEP **03** (2012), 040 doi:10.1007/JHEP03(2012)040 [arXiv:1202.3478 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], "Search for the standard model Higgs boson in the H to ZZ to $\ell\ell\tau\tau$ decay channel in pp collisions at $\sqrt{s} = 7$ TeV," JHEP **03** (2012), 081 doi:10.1007/JHEP03(2012)081 [arXiv:1202.3617 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], "Search for the standard model Higgs boson in the decay channel H to ZZ to 4 leptons in pp collisions at $\sqrt{s} = 7$ TeV," Phys. Rev. Lett. **108** (2012), 111804 doi:10.1103/PhysRevLett.108.111804 [arXiv:1202.1997 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], "Combined results of searches for the standard model Higgs boson in pp collisions at $\sqrt{s} = 7$ TeV," Phys. Lett. B **710** (2012), 26-48 doi:10.1016/j.physletb.2012.02.064 [arXiv:1202.1488 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], "Centrality dependence of dihadron correlations and azimuthal anisotropy harmonics in PbPb collisions at $\sqrt{s_{NN}} = 2.76$ TeV," Eur. Phys. J. C **72** (2012), 2012 doi:10.1140/epjc/s10052-012-2012-3 [arXiv:1201.3158 [nucl-ex]].
- S. Chatrchyan *et al.* [CMS], "Suppression of non-prompt J/ψ , prompt J/ψ , and $Y(1S)$ in PbPb collisions at $\sqrt{s_{NN}} = 2.76$ TeV," JHEP **05** (2012), 063 doi:10.1007/JHEP05(2012)063 [arXiv:1201.5069 [nucl-ex]].
- S. Chatrchyan *et al.* [CMS], "Measurement of isolated photon production in pp and PbPb collisions at $\sqrt{s_{NN}} = 2.76$ TeV," Phys. Lett. B **710** (2012), 256-277 doi:10.1016/j.physletb.2012.02.077 [arXiv:1201.3093 [nucl-ex]].
- S. Chatrchyan *et al.* [CMS], "A New Boson with a Mass of 125 GeV Observed with the CMS Experiment at the Large Hadron Collider," Science **338** (2012), 1569-1575 doi:10.1126/science.1230816
- S. Chatrchyan *et al.* [CMS], "Search for signatures of extra dimensions in the diphoton mass spectrum at

the Large Hadron Collider," Phys. Rev. Lett. **108** (2012), 111801 doi:10.1103/PhysRevLett.108.111801 [arXiv:1112.0688 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "Measurement of the charge asymmetry in top-quark pair production in proton-proton collisions at $\sqrt{s} = 7$ TeV," Phys. Lett. B **709** (2012), 28-49 doi:10.1016/j.physletb.2012.01.078 [arXiv:1112.5100 [hep-ex]].

S. Chatrchyan *et al.* [CMS], " J/ψ and ψ_{2S} production in pp collisions at $\sqrt{s} = 7$ TeV," JHEP **02** (2012), 011 doi:10.1007/JHEP02(2012)011 [arXiv:1111.1557 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "Exclusive photon-photon production of muon pairs in proton-proton collisions at $\sqrt{s} = 7$ TeV," JHEP **01** (2012), 052 doi:10.1007/JHEP01(2012)052 [arXiv:1111.5536 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "Measurement of the Rapidity and Transverse Momentum Distributions of Z Bosons in pp Collisions at $\sqrt{s} = 7$ TeV," Phys. Rev. D **85** (2012), 032002 doi:10.1103/PhysRevD.85.032002 [arXiv:1110.4973 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "Measurement of the Production Cross Section for Pairs of Isolated Photons in pp collisions at $\sqrt{s} = 7$ TeV," JHEP **01** (2012), 133 doi:10.1007/JHEP01(2012)133 [arXiv:1110.6461 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "Forward Energy Flow, Central Charged-Particle Multiplicities, and Pseudorapidity Gaps in W and Z Boson Events from pp Collisions at $\sqrt{s} = 7$ TeV," Eur. Phys. J. C **72** (2012), 1839 doi:10.1140/epjc/s10052-011-1839-3 [arXiv:1110.0181 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "Measurement of energy flow at large pseudorapidities in pp collisions at $\sqrt{s} = 0.9$ and 7 TeV," JHEP **11** (2011), 148 [erratum: JHEP **02** (2012), 055] doi:10.1007/JHEP11(2011)148 [arXiv:1110.0211 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "Measurement of the weak mixing angle with the Drell-Yan process in proton-proton collisions at the LHC," Phys. Rev. D **84** (2011), 112002 doi:10.1103/PhysRevD.84.112002 [arXiv:1110.2682 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "Jet Production Rates in Association with W and Z Bosons in pp Collisions at $\sqrt{s} = 7$ TeV," JHEP **01** (2012), 010 doi:10.1007/JHEP01(2012)010 [arXiv:1110.3226 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "Search for a Vector-like Quark with Charge 2/3 in $t + Z$ Events from pp Collisions at $\sqrt{s} = 7$ TeV," Phys. Rev. Lett. **107** (2011), 271802 doi:10.1103/PhysRevLett.107.271802 [arXiv:1109.4985 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "Performance of tau-lepton reconstruction and identification in CMS," JINST **7** (2012), P01001 doi:10.1088/1748-0221/7/01/P01001 [arXiv:1109.6034 [physics.ins-det]].

S. Chatrchyan *et al.* [CMS], "Search for Supersymmetry at the LHC in Events with Jets and Missing Transverse Energy," Phys. Rev. Lett. **107** (2011), 221804 doi:10.1103/PhysRevLett.107.221804 [arXiv:1109.2352 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "Measurement of the $t\bar{t}$ Production Cross Section in pp Collisions at

- 7 TeV in Lepton + Jets Events Using b -quark Jet Identification," Phys. Rev. D **84** (2011), 092004 doi:10.1103/PhysRevD.84.092004 [arXiv:1108.3773 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], "Measurement of the Differential Cross Section for Isolated Prompt Photon Production in pp Collisions at 7 TeV," Phys. Rev. D **84** (2011), 052011 doi:10.1103/PhysRevD.84.052011 [arXiv:1108.2044 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], "Measurement of the Drell-Yan Cross Section in pp Collisions at $\sqrt{s} = 7$ TeV," JHEP **10** (2011), 007 doi:10.1007/JHEP10(2011)007 [arXiv:1108.0566 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], "Search for supersymmetry in pp collisions at $\sqrt{s} = 7$ TeV in events with a single lepton, jets, and missing transverse momentum," JHEP **08** (2011), 156 doi:10.1007/JHEP08(2011)156 [arXiv:1107.1870 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], "Measurement of the Underlying Event Activity at the LHC with $\sqrt{s} = 7$ TeV and Comparison with $\sqrt{s} = 0.9$ TeV," JHEP **09** (2011), 109 doi:10.1007/JHEP09(2011)109 [arXiv:1107.0330 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], "Measurement of the Inclusive W and Z Production Cross Sections in pp Collisions at $\sqrt{s} = 7$ TeV," JHEP **10** (2011), 132 doi:10.1007/JHEP10(2011)132 [arXiv:1107.4789 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], "Dependence on pseudorapidity and centrality of charged hadron production in PbPb collisions at a nucleon-nucleon centre-of-mass energy of 2.76 TeV," JHEP **08** (2011), 141 doi:10.1007/JHEP08(2011)141 [arXiv:1107.4800 [nucl-ex]].
- S. Chatrchyan *et al.* [CMS], "A search for excited leptons in pp Collisions at $\sqrt{s} = 7$ TeV," Phys. Lett. B **704** (2011), 143-162 doi:10.1016/j.physletb.2011.09.021 [arXiv:1107.1773 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], "Search for $B(s)$ and B to dimuon decays in pp collisions at 7 TeV," Phys. Rev. Lett. **107** (2011), 191802 doi:10.1103/PhysRevLett.107.191802 [arXiv:1107.5834 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], "Search for Three-Jet Resonances in pp Collisions at $\sqrt{s} = 7$ TeV," Phys. Rev. Lett. **107** (2011), 101801 doi:10.1103/PhysRevLett.107.101801 [arXiv:1107.3084 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], "Search for Resonances in the Dijet Mass Spectrum from 7 TeV pp Collisions at CMS," Phys. Lett. B **704** (2011), 123-142 doi:10.1016/j.physletb.2011.09.015 [arXiv:1107.4771 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], "Inclusive search for squarks and gluinos in pp collisions at $\sqrt{s} = 7$ TeV," Phys. Rev. D **85** (2012), 012004 doi:10.1103/PhysRevD.85.012004 [arXiv:1107.1279 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], "Determination of Jet Energy Calibration and Transverse Momentum Resolution in CMS," JINST **6** (2011), P11002 doi:10.1088/1748-0221/6/11/P11002 [arXiv:1107.4277 [physics.ins-det]].
- S. Chatrchyan *et al.* [CMS], "Missing transverse energy performance of the CMS detector," JINST **6** (2011), P09001 doi:10.1088/1748-0221/6/09/P09001 [arXiv:1106.5048 [physics.ins-det]].
- S. Chatrchyan *et al.* [CMS], "Search for Supersymmetry in Events with b Jets and Missing Trans-

verse Momentum at the LHC," JHEP **07** (2011), 113 doi:10.1007/JHEP07(2011)113 [arXiv:1106.3272 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "Search for physics beyond the standard model using multilepton signatures in pp collisions at $\sqrt{s} = 7$ TeV," Phys. Lett. B **704** (2011), 411-433 doi:10.1016/j.physletb.2011.09.047 [arXiv:1106.0933 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "Search for Light Resonances Decaying into Pairs of Muons as a Signal of New Physics," JHEP **07** (2011), 098 doi:10.1007/JHEP07(2011)098 [arXiv:1106.2375 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "Search for New Physics with a Mono-Jet and Missing Transverse Energy in pp Collisions at $\sqrt{s} = 7$ TeV," Phys. Rev. Lett. **107** (2011), 201804 doi:10.1103/PhysRevLett.107.201804 [arXiv:1106.4775 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "Measurement of the Inclusive Jet Cross Section in pp Collisions at $\sqrt{s} = 7$ TeV," Phys. Rev. Lett. **107** (2011), 132001 doi:10.1103/PhysRevLett.107.132001 [arXiv:1106.0208 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "Measurement of the t -channel single top quark production cross section in pp collisions at $\sqrt{s} = 7$ TeV," Phys. Rev. Lett. **107** (2011), 091802 doi:10.1103/PhysRevLett.107.091802 [arXiv:1106.3052 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "Measurement of the ratio of the 3-jet to 2-jet cross sections in pp collisions at $\sqrt{s} = 7$ TeV," Phys. Lett. B **702** (2011), 336-354 doi:10.1016/j.physletb.2011.07.067 [arXiv:1106.0647 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "Search for New Physics with Jets and Missing Transverse Momentum in pp collisions at $\sqrt{s} = 7$ TeV," JHEP **08** (2011), 155 doi:10.1007/JHEP08(2011)155 [arXiv:1106.4503 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "Measurement of the Strange B Meson Production Cross Section with $J/\Psi \phi$ Decays in pp Collisions at $\sqrt{s} = 7$ TeV," Phys. Rev. D **84** (2011), 052008 doi:10.1103/PhysRevD.84.052008 [arXiv:1106.4048 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "Search for Same-Sign Top-Quark Pair Production at $\sqrt{s} = 7$ TeV and Limits on Flavour Changing Neutral Currents in the Top Sector," JHEP **08** (2011), 005 doi:10.1007/JHEP08(2011)005 [arXiv:1106.2142 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "Measurement of the Top-antitop Production Cross Section in pp Collisions at $\sqrt{s} = 7$ TeV using the Kinematic Properties of Events with Leptons and Jets," Eur. Phys. J. C **71** (2011), 1721 doi:10.1140/epjc/s10052-011-1721-3 [arXiv:1106.0902 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "Search for supersymmetry in events with a lepton, a photon, and large missing transverse energy in pp collisions at $\sqrt{s} = 7$ TeV," JHEP **06** (2011), 093 doi:10.1007/JHEP06(2011)093 [arXiv:1105.3152 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "Measurement of $W\gamma$ and $Z\gamma$ production in pp collisions at $\sqrt{s} = 7$ TeV," Phys. Lett. B **701** (2011), 535-555 doi:10.1016/j.physletb.2011.06.034 [arXiv:1105.2758 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "Measurement of the $t\bar{t}$ production cross section and the top quark mass in

the dilepton channel in pp collisions at $\sqrt{s} = 7$ TeV," JHEP **07** (2011), 049 doi:10.1007/JHEP07(2011)049 [arXiv:1105.5661 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "Indications of suppression of excited Υ states in PbPb collisions at $\sqrt{S_{NN}} = 2.76$ TeV," Phys. Rev. Lett. **107** (2011), 052302 doi:10.1103/PhysRevLett.107.052302 [arXiv:1105.4894 [nucl-ex]].

S. Chatrchyan *et al.* [CMS], "Long-range and short-range dihadron angular correlations in central PbPb collisions at a nucleon-nucleon center of mass energy of 2.76 TeV," JHEP **07** (2011), 076 doi:10.1007/JHEP07(2011)076 [arXiv:1105.2438 [nucl-ex]].

S. Chatrchyan *et al.* [CMS], "Search for First Generation Scalar Leptoquarks in the $e\nu jj$ channel in pp collisions at $\sqrt{s} = 7$ TeV," Phys. Lett. B **703** (2011), 246-266 doi:10.1016/j.physletb.2011.07.089 [arXiv:1105.5237 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "Measurement of the B^0 production cross section in pp Collisions at $\sqrt{s} = 7$ TeV," Phys. Rev. Lett. **106** (2011), 252001 doi:10.1103/PhysRevLett.106.252001 [arXiv:1104.2892 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "Search for Neutral MSSM Higgs Bosons Decaying to Tau Pairs in pp Collisions at $\sqrt{s} = 7$ TeV," Phys. Rev. Lett. **106** (2011), 231801 doi:10.1103/PhysRevLett.106.231801 [arXiv:1104.1619 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "Measurement of the Polarization of W Bosons with Large Transverse Momenta in W+Jets Events at the LHC," Phys. Rev. Lett. **107** (2011), 021802 doi:10.1103/PhysRevLett.107.021802 [arXiv:1104.3829 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "Charged particle transverse momentum spectra in pp collisions at $\sqrt{s} = 0.9$ and 7 TeV," JHEP **08** (2011), 086 doi:10.1007/JHEP08(2011)086 [arXiv:1104.3547 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "Measurement of the Inclusive Z Cross Section via Decays to Tau Pairs in pp Collisions at $\sqrt{s} = 7$ TeV," JHEP **08** (2011), 117 doi:10.1007/JHEP08(2011)117 [arXiv:1104.1617 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "Search for new physics with same-sign isolated dilepton events with jets and missing transverse energy at the LHC," JHEP **06** (2011), 077 doi:10.1007/JHEP06(2011)077 [arXiv:1104.3168 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "Measurement of the differential dijet production cross section in proton-proton collisions at $\sqrt{s} = 7$ TeV," Phys. Lett. B **700** (2011), 187-206 doi:10.1016/j.physletb.2011.05.027 [arXiv:1104.1693 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "Search for Large Extra Dimensions in the Diphoton Final State at the Large Hadron Collider," JHEP **05** (2011), 085 doi:10.1007/JHEP05(2011)085 [arXiv:1103.4279 [hep-ex]].

S. Chatrchyan *et al.* [CMS], "Search for Supersymmetry in pp Collisions at $\sqrt{s} = 7$ TeV in Events with Two Photons and Missing Transverse Energy," Phys. Rev. Lett. **106** (2011), 211802 doi:10.1103/PhysRevLett.106.211802 [arXiv:1103.0953 [hep-ex]].

- S. Chatrchyan *et al.* [CMS], “Search for Resonances in the Dilepton Mass Distribution in pp Collisions at $\sqrt{s} = 7$ TeV,” JHEP **05** (2011), 093 doi:10.1007/JHEP05(2011)093 [arXiv:1103.0981 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], “Measurement of the lepton charge asymmetry in inclusive W production in pp collisions at $\sqrt{s} = 7$ TeV,” JHEP **04** (2011), 050 doi:10.1007/JHEP04(2011)050 [arXiv:1103.3470 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], “Search for Physics Beyond the Standard Model in Opposite-Sign Dilepton Events at $\sqrt{s} = 7$ TeV,” JHEP **06** (2011), 026 doi:10.1007/JHEP06(2011)026 [arXiv:1103.1348 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], “Search for a W' boson decaying to a muon and a neutrino in pp collisions at $\sqrt{s} = 7$ TeV,” Phys. Lett. B **701** (2011), 160-179 doi:10.1016/j.physletb.2011.05.048 [arXiv:1103.0030 [hep-ex]].
- V. Khachatryan *et al.* [CMS], “Measurement of Dijet Angular Distributions and Search for Quark Compositeness in pp Collisions at $\sqrt{s} = 7$ TeV,” Phys. Rev. Lett. **106** (2011), 201804 doi:10.1103/PhysRevLett.106.201804 [arXiv:1102.2020 [hep-ex]].
- V. Khachatryan *et al.* [CMS], “Measurement of $B\bar{B}$ Angular Correlations based on Secondary Vertex Reconstruction at $\sqrt{s} = 7$ TeV,” JHEP **03** (2011), 136 doi:10.1007/JHEP03(2011)136 [arXiv:1102.3194 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], “Study of Z boson production in PbPb collisions at $\sqrt{s_{NN}} = 2.76$ TeV,” Phys. Rev. Lett. **106** (2011), 212301 doi:10.1103/PhysRevLett.106.212301 [arXiv:1102.5435 [nucl-ex]].
- V. Khachatryan *et al.* [CMS], “Strange Particle Production in pp Collisions at $\sqrt{s} = 0.9$ and 7 TeV,” JHEP **05** (2011), 064 doi:10.1007/JHEP05(2011)064 [arXiv:1102.4282 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], “Search for a Heavy Bottom-like Quark in pp Collisions at $\sqrt{s} = 7$ TeV,” Phys. Lett. B **701** (2011), 204-223 doi:10.1016/j.physletb.2011.05.074 [arXiv:1102.4746 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], “Observation and studies of jet quenching in PbPb collisions at nucleon-nucleon center-of-mass energy = 2.76 TeV,” Phys. Rev. C **84** (2011), 024906 doi:10.1103/PhysRevC.84.024906 [arXiv:1102.1957 [nucl-ex]].
- V. Khachatryan *et al.* [CMS], “First Measurement of Hadronic Event Shapes in pp Collisions at $\sqrt{s} = 7$ TeV,” Phys. Lett. B **699** (2011), 48-67 doi:10.1016/j.physletb.2011.03.060 [arXiv:1102.0068 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], “Measurement of W^+W^- production and search for the Higgs boson in pp collisions at $\sqrt{s} = 7$ TeV,” Phys. Lett. B **699** (2011), 25-47 doi:10.1016/j.physletb.2011.03.056 [arXiv:1102.5429 [hep-ex]].
- V. Khachatryan *et al.* [CMS], “Search for Heavy Stable Charged Particles in pp collisions at $\sqrt{s} = 7$ TeV,” JHEP **03** (2011), 024 doi:10.1007/JHEP03(2011)024 [arXiv:1101.1645 [hep-ex]].
- V. Khachatryan *et al.* [CMS], “Dijet Azimuthal Decorrelations in pp Collisions at $\sqrt{s} = 7$ TeV,” Phys. Rev. Lett. **106** (2011), 122003 doi:10.1103/PhysRevLett.106.122003 [arXiv:1101.5029 [hep-ex]].
- V. Khachatryan *et al.* [CMS], “Search for Supersymmetry in pp Collisions at 7 TeV in Events with Jets and Missing Transverse Energy,” Phys. Lett. B **698** (2011), 196-218 doi:10.1016/j.physletb.2011.03.021 [arXiv:1101.1628 [hep-ex]].

- V. Khachatryan *et al.* [CMS], “Inclusive b-Hadron Production Cross Section with Muons in pp Collisions at $\sqrt{s} = 7$ TeV,” JHEP **03** (2011), 090 doi:10.1007/JHEP03(2011)090 [arXiv:1101.3512 [hep-ex]].
- R. Gonzalez Suarez, “Higgs search prospects at the LHC,” Nucl. Phys. B Proc. Suppl. **210-211** (2011), 283-288 doi:10.1016/j.nuclphysbps.2010.12.092
- V. Khachatryan *et al.* [CMS], “Measurement of the B^+ Production Cross Section in pp Collisions at $\sqrt{s} = 7$ TeV,” Phys. Rev. Lett. **106** (2011), 112001 doi:10.1103/PhysRevLett.106.112001 [arXiv:1101.0131 [hep-ex]].
- V. Khachatryan *et al.* [CMS], “Measurement of Bose-Einstein Correlations in pp Collisions at $\sqrt{s} = 0.9$ and 7 TeV,” JHEP **05** (2011), 029 doi:10.1007/JHEP05(2011)029 [arXiv:1101.3518 [hep-ex]].
- V. Khachatryan *et al.* [CMS], “Search for Microscopic Black Hole Signatures at the Large Hadron Collider,” Phys. Lett. B **697** (2011), 434-453 doi:10.1016/j.physletb.2011.02.032 [arXiv:1012.3375 [hep-ex]].
- V. Khachatryan *et al.* [CMS], “Search for a Heavy Gauge Boson W' in the Final State with an Electron and Large Missing Transverse Energy in pp Collisions at $\sqrt{s} = 7$ TeV,” Phys. Lett. B **698** (2011), 21-39 doi:10.1016/j.physletb.2011.02.048 [arXiv:1012.5945 [hep-ex]].
- V. Khachatryan *et al.* [CMS], “Measurement of the Isolated Prompt Photon Production Cross Section in pp Collisions at $\sqrt{s} = 7$ TeV,” Phys. Rev. Lett. **106** (2011), 082001 doi:10.1103/PhysRevLett.106.082001 [arXiv:1012.0799 [hep-ex]].
- V. Khachatryan *et al.* [CMS], “Upsilon Production Cross-Section in pp Collisions at $\sqrt{s}=7$ TeV,” Phys. Rev. D **83** (2011), 112004 doi:10.1103/PhysRevD.83.112004 [arXiv:1012.5545 [hep-ex]].
- V. Khachatryan *et al.* [CMS], “Search for Pair Production of First-Generation Scalar Leptoquarks in pp Collisions at $\sqrt{s} = 7$ TeV,” Phys. Rev. Lett. **106** (2011), 201802 doi:10.1103/PhysRevLett.106.201802 [arXiv:1012.4031 [hep-ex]].
- V. Khachatryan *et al.* [CMS], “Search for Pair Production of Second-Generation Scalar Leptoquarks in pp Collisions at $\sqrt{s} = 7$ TeV,” Phys. Rev. Lett. **106** (2011), 201803 doi:10.1103/PhysRevLett.106.201803 [arXiv:1012.4033 [hep-ex]].
- V. Khachatryan *et al.* [CMS], “Measurements of Inclusive W and Z Cross Sections in pp Collisions at $\sqrt{s} = 7$ TeV,” JHEP **01** (2011), 080 doi:10.1007/JHEP01(2011)080 [arXiv:1012.2466 [hep-ex]].
- V. Khachatryan *et al.* [CMS], “Charged Particle Multiplicities in pp Interactions at $\sqrt{s} = 0.9, 2.36,$ and 7 TeV,” JHEP **01** (2011), 079 doi:10.1007/JHEP01(2011)079 [arXiv:1011.5531 [hep-ex]].
- V. Khachatryan *et al.* [CMS], “Prompt and Non-Prompt J/ψ Production in pp Collisions at $\sqrt{s} = 7$ TeV,” Eur. Phys. J. C **71** (2011), 1575 doi:10.1140/epjc/s10052-011-1575-8 [arXiv:1011.4193 [hep-ex]].
- V. Khachatryan *et al.* [CMS], “Search for Stopped Gluinos in pp collisions at $\sqrt{s} = 7$ TeV,” Phys. Rev. Lett. **106** (2011), 011801 doi:10.1103/PhysRevLett.106.011801 [arXiv:1011.5861 [hep-ex]].

- V. Khachatryan *et al.* [CMS], "Search for Quark Compositeness with the Dijet Centrality Ratio in pp Collisions at $\sqrt{s} = 7$ TeV," Phys. Rev. Lett. **105** (2010), 262001 doi:10.1103/PhysRevLett.105.262001 [arXiv:1010.4439 [hep-ex]].
- V. Khachatryan *et al.* [CMS], "Search for Dijet Resonances in 7 TeV pp Collisions at CMS," Phys. Rev. Lett. **105** (2010), 211801 doi:10.1103/PhysRevLett.105.211801 [arXiv:1010.0203 [hep-ex]].
- V. Khachatryan *et al.* [CMS], "First Measurement of the Cross Section for Top-Quark Pair Production in Proton-Proton Collisions at $\sqrt{s} = 7$ TeV," Phys. Lett. B **695** (2011), 424-443 doi:10.1016/j.physletb.2010.11.058 [arXiv:1010.5994 [hep-ex]].
- R. Gonzalez Suarez, "Search for a SM Higgs Boson in the LHC with the CMS experiment using the $H \rightarrow WW^* \rightarrow 2\mu 2\nu$ decay channel," CERN-THESIS-2010-121.
- V. Khachatryan *et al.* [CMS], "Observation of Long-Range Near-Side Angular Correlations in Proton-Proton Collisions at the LHC," JHEP **09** (2010), 091 doi:10.1007/JHEP09(2010)091 [arXiv:1009.4122 [hep-ex]].
- V. Khachatryan *et al.* [CMS], "Transverse-momentum and pseudorapidity distributions of charged hadrons in pp collisions at $\sqrt{s} = 7$ TeV," Phys. Rev. Lett. **105** (2010), 022002 doi:10.1103/PhysRevLett.105.022002 [arXiv:1005.3299 [hep-ex]].
- V. Khachatryan *et al.* [CMS], "First Measurement of Bose-Einstein Correlations in Proton-Proton Collisions at $\sqrt{s} = 0.9$ and 2.36 TeV at the LHC," Phys. Rev. Lett. **105** (2010), 032001 doi:10.1103/PhysRevLett.105.032001 [arXiv:1005.3294 [hep-ex]].
- V. Khachatryan *et al.* [CMS], "Measurement of the Charge Ratio of Atmospheric Muons with the CMS Detector," Phys. Lett. B **692** (2010), 83-104 doi:10.1016/j.physletb.2010.07.033 [arXiv:1005.5332 [hep-ex]].
- V. Khachatryan *et al.* [CMS], "Transverse Momentum and Pseudorapidity Distributions of Charged Hadrons in pp Collisions at $\sqrt{s} = 0.9$ and 2.36 TeV," JHEP **02** (2010), 041 doi:10.1007/JHEP02(2010)041 [arXiv:1002.0621 [hep-ex]].
- V. Khachatryan *et al.* [CMS], "CMS Tracking Performance Results from Early LHC Operation," Eur. Phys. J. C **70** (2010), 1165-1192 doi:10.1140/epjc/s10052-010-1491-3 [arXiv:1007.1988 [physics.ins-det]].
- V. Khachatryan *et al.* [CMS], "First Measurement of the Underlying Event Activity at the LHC with $\sqrt{s} = 0.9$ TeV," Eur. Phys. J. C **70** (2010), 555-572 doi:10.1140/epjc/s10052-010-1453-9 [arXiv:1006.2083 [hep-ex]].
- S. Chatrchyan *et al.* [CMS], "Commissioning and Performance of the CMS Silicon Strip Tracker with Cosmic Ray Muons," JINST **5** (2010), T03008 doi:10.1088/1748-0221/5/03/T03008 [arXiv:0911.4996 [physics.ins-det]].
- S. Chatrchyan *et al.* [CMS], "Aligning the CMS Muon Chambers with the Muon Alignment System during an Extended Cosmic Ray Run," JINST **5** (2010), T03019 doi:10.1088/1748-0221/5/03/T03019 [arXiv:0911.4770 [physics.ins-det]].
- S. Chatrchyan *et al.* [CMS], "Commissioning and Performance of the CMS Pixel Tracker with Cos-

mic Ray Muons," JINST **5** (2010), T03007 doi:10.1088/1748-0221/5/03/T03007 [arXiv:0911.5434 [physics.ins-det]].

S. Chatrchyan *et al.* [CMS], "Fine Synchronization of the CMS Muon Drift-Tube Local Trigger using Cosmic Rays," JINST **5** (2010), T03004 doi:10.1088/1748-0221/5/03/T03004 [arXiv:0911.4904 [physics.ins-det]].

S. Chatrchyan *et al.* [CMS], "CMS Data Processing Workflows during an Extended Cosmic Ray Run," JINST **5** (2010), T03006 doi:10.1088/1748-0221/5/03/T03006 [arXiv:0911.4842 [physics.ins-det]].

S. Chatrchyan *et al.* [CMS], "Performance of the CMS Level-1 Trigger during Commissioning with Cosmic Ray Muons," JINST **5** (2010), T03002 doi:10.1088/1748-0221/5/03/T03002 [arXiv:0911.5422 [physics.ins-det]].

S. Chatrchyan *et al.* [CMS], "Commissioning of the CMS High-Level Trigger with Cosmic Rays," JINST **5** (2010), T03005 doi:10.1088/1748-0221/5/03/T03005 [arXiv:0911.4889 [physics.ins-det]].

S. Chatrchyan *et al.* [CMS], "Time Reconstruction and Performance of the CMS Electromagnetic Calorimeter," JINST **5** (2010), T03011 doi:10.1088/1748-0221/5/03/T03011 [arXiv:0911.4044 [physics.ins-det]].

S. Chatrchyan *et al.* [CMS], "Performance of CMS Muon Reconstruction in Cosmic-Ray Events," JINST **5** (2010), T03022 doi:10.1088/1748-0221/5/03/T03022 [arXiv:0911.4994 [physics.ins-det]].

S. Chatrchyan *et al.* [CMS], "Performance of the CMS Hadron Calorimeter with Cosmic Ray Muons and LHC Beam Data," JINST **5** (2010), T03012 doi:10.1088/1748-0221/5/03/T03012 [arXiv:0911.4991 [physics.ins-det]].

S. Chatrchyan *et al.* [CMS], "Measurement of the Muon Stopping Power in Lead Tungstate," JINST **5** (2010), P03007 doi:10.1088/1748-0221/5/03/P03007 [arXiv:0911.5397 [physics.ins-det]].

S. Chatrchyan *et al.* [CMS], "Performance of the CMS Cathode Strip Chambers with Cosmic Rays," JINST **5** (2010), T03018 doi:10.1088/1748-0221/5/03/T03018 [arXiv:0911.4992 [physics.ins-det]].

S. Chatrchyan *et al.* [CMS], "Performance of the CMS Drift-Tube Local Trigger with Cosmic Rays," JINST **5** (2010), T03003 doi:10.1088/1748-0221/5/03/T03003 [arXiv:0911.4893 [physics.ins-det]].

S. Chatrchyan *et al.* [CMS], "Calibration of the CMS Drift Tube Chambers and Measurement of the Drift Velocity with Cosmic Rays," JINST **5** (2010), T03016 doi:10.1088/1748-0221/5/03/T03016 [arXiv:0911.4895 [physics.ins-det]].

S. Chatrchyan *et al.* [CMS], "Commissioning of the CMS Experiment and the Cosmic Run at Four Tesla," JINST **5** (2010), T03001 doi:10.1088/1748-0221/5/03/T03001 [arXiv:0911.4845 [physics.ins-det]].

S. Chatrchyan *et al.* [CMS], "Performance of the CMS Drift Tube Chambers with Cosmic Rays," JINST **5** (2010), T03015 doi:10.1088/1748-0221/5/03/T03015 [arXiv:0911.4855 [physics.ins-det]].

S. Chatrchyan *et al.* [CMS], "Identification and Filtering of Uncharacteristic Noise in the CMS Hadron Calorimeter," JINST **5** (2010), T03014 doi:10.1088/1748-0221/5/03/T03014 [arXiv:0911.4881 [physics.ins-det]].

- S. Chatrchyan *et al.* [CMS], "Performance of CMS Hadron Calorimeter Timing and Synchronization using Test Beam, Cosmic Ray, and LHC Beam Data," JINST **5** (2010), T03013 doi:10.1088/1748-0221/5/03/T03013 [arXiv:0911.4877 [physics.ins-det]].
- S. Chatrchyan *et al.* [CMS], "Performance Study of the CMS Barrel Resistive Plate Chambers with Cosmic Rays," JINST **5** (2010), T03017 doi:10.1088/1748-0221/5/03/T03017 [arXiv:0911.4045 [physics.ins-det]].
- S. Chatrchyan *et al.* [CMS], "Alignment of the CMS Muon System with Cosmic-Ray and Beam-Halo Muons," JINST **5** (2010), T03020 doi:10.1088/1748-0221/5/03/T03020 [arXiv:0911.4022 [physics.ins-det]].
- S. Chatrchyan *et al.* [CMS], "Precise Mapping of the Magnetic Field in the CMS Barrel Yoke using Cosmic Rays," JINST **5** (2010), T03021 doi:10.1088/1748-0221/5/03/T03021 [arXiv:0910.5530 [physics.ins-det]].
- S. Chatrchyan *et al.* [CMS], "Alignment of the CMS Silicon Tracker during Commissioning with Cosmic Rays," JINST **5** (2010), T03009 doi:10.1088/1748-0221/5/03/T03009 [arXiv:0910.2505 [physics.ins-det]].
- S. Chatrchyan *et al.* [CMS], "Performance and Operation of the CMS Electromagnetic Calorimeter," JINST **5** (2010), T03010 doi:10.1088/1748-0221/5/03/T03010 [arXiv:0910.3423 [physics.ins-det]].
- R. Gonzalez Suarez [CMS], "Discovery Potential for the SM Higgs Boson in the $H \rightarrow W^* \rightarrow 2 \ell 2 \nu$ channel at LHC," [arXiv:0810.1468 [hep-ph]].
- S. Chatrchyan *et al.* [CMS], "The CMS Experiment at the CERN LHC," JINST **3** (2008), S08004 doi:10.1088/1748-0221/3/08/S08004
- I. Cabrillo, I. Gonzalez Caballero, R. Gonzalez, J. Fernandez, R. Marco, P. Martinez Ruiz del Arbol, F. Matorras and A. Sznajder, "A software and computing prototype for CMS muon system alignment," J. Phys. Conf. Ser. **119** (2008), 072008 doi:10.1088/1742-6596/119/7/072008

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