

# Physics Publications with Major Personal Contributions

Oliver Gutsche

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A. Tumasyan et al., **A portrait of the Higgs boson by the CMS experiment ten years after the discovery.**, *Nature*. 607 (2022) 60–68, doi:[10.1038/s41586-022-04892-x](https://doi.org/10.1038/s41586-022-04892-x), arXiv:[2207.00043](https://arxiv.org/abs/2207.00043) [hep-ex]

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

A.M. Sirunyan et al., **Observation of the Production of Three Massive Gauge Bosons at  $\sqrt{s} = 13$  TeV**, *Phys. Rev. Lett.* 125 (2020) 151802, doi:[10.1103/PhysRevLett.125.151802](https://doi.org/10.1103/PhysRevLett.125.151802), arXiv:[2006.11191](https://arxiv.org/abs/2006.11191) [hep-ex]

A.M. Sirunyan et al., **Search for dark matter produced in association with a Higgs boson decaying to a pair of bottom quarks in protonproton collisions at  $\sqrt{s} = 13$ TeV**, *Eur. Phys. J. C*. 79 (2019) 280, doi:[10.1140/epjc/s10052-019-6730-7](https://doi.org/10.1140/epjc/s10052-019-6730-7), arXiv:[1811.06562](https://arxiv.org/abs/1811.06562) [hep-ex]

A.M. Sirunyan et al., **Search for the production of  $W^\pm W^\pm W^\mp$  events at  $\sqrt{s} = 13$  TeV**, *Phys. Rev. D*. 100 (2019) 012004, doi:[10.1103/PhysRevD.100.012004](https://doi.org/10.1103/PhysRevD.100.012004), arXiv:[1905.04246](https://arxiv.org/abs/1905.04246) [hep-ex]

A.M. Sirunyan et al., **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/jhep03\(2018\)076](https://doi.org/10.1007/jhep03(2018)076), arXiv:[1709.08908](https://arxiv.org/abs/1709.08908) [hep-ex]

A.M. Sirunyan et al., **Search for standard model production of four top quarks with same-sign and multilepton final states in protonproton collisions at  $\sqrt{s} = 13$ TeV**, *Eur. Phys. J. C*. 78 (2018) 140, doi:[10.1140/epjc/s10052-018-5607-5](https://doi.org/10.1140/epjc/s10052-018-5607-5), arXiv:[1710.10614](https://arxiv.org/abs/1710.10614) [hep-ex]

A.M. Sirunyan et al., **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](https://doi.org/10.1007/jhep06(2018)027), arXiv:[1801.08427](https://arxiv.org/abs/1801.08427) [hep-ex]

A.M. Sirunyan et al., **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](https://doi.org/10.1007/jhep03(2018)160), arXiv:[1801.03957](https://arxiv.org/abs/1801.03957) [hep-ex]

A.M. Sirunyan et al., **Searches for pair production of third-generation squarks in  $\sqrt{s} = 13$ TeV pp collisions**, *Eur. Phys. J. C*. 77 (2017) 327, doi:[10.1140/epjc/s10052-017-4853-2](https://doi.org/10.1140/epjc/s10052-017-4853-2), arXiv:[1612.03877](https://arxiv.org/abs/1612.03877) [hep-ex]

A.M. Sirunyan et al., **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](https://doi.org/10.1007/jhep10(2017)019), arXiv:[1706.04402](https://arxiv.org/abs/1706.04402) [hep-ex]

A.M. Sirunyan et al., **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](https://doi.org/10.1007/jhep11(2017)029), arXiv:[1706.09933](https://arxiv.org/abs/1706.09933) [hep-ex]

A.M. Sirunyan et al., **Search for new phenomena with the  $M_{T2}$  variable in the all-hadronic final state produced in protonproton collisions at  $\sqrt{s} = 13$ TeV**, *Eur. Phys. J. C*. 77 (2017) 710, doi:[10.1140/epjc/s10052-017-5267-x](https://doi.org/10.1140/epjc/s10052-017-5267-x), arXiv:[1705.04650](https://arxiv.org/abs/1705.04650) [hep-ex]

A.M. Sirunyan et al., **Search for physics beyond the standard model in events with two leptons of same sign, missing transverse momentum, and jets in protonproton collisions at  $\sqrt{s} = 13$ TeV**, *Eur. Phys. J. C*. 77 (2017) 578, doi:[10.1140/epjc/s10052-017-5079-z](https://doi.org/10.1140/epjc/s10052-017-5079-z), arXiv:[1704.07323](https://arxiv.org/abs/1704.07323) [hep-ex]

V. Khachatryan et al., **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) 401, doi:[10.1140/epjc/s10052-016-4219-1](https://doi.org/10.1140/epjc/s10052-016-4219-1), arXiv:[1507.03268](https://arxiv.org/abs/1507.03268) [hep-ex]

V. Khachatryan et al., **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](https://doi.org/10.1007/jhep10(2016)006), arXiv:[1603.04053](https://arxiv.org/abs/1603.04053) [hep-ex]

V. Khachatryan et al., **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](https://doi.org/10.1007/JHEP12(2016)013), arXiv:[1607.00915](https://arxiv.org/abs/1607.00915) [hep-ex]

V. Khachatryan et al., **Search for new physics in same-sign dilepton events in protonproton collisions at  $\sqrt{s} = 13$ TeV**, *Eur. Phys. J. C.* 76 (2016) 439, doi:[10.1140/epjc/s10052-016-4261-z](https://doi.org/10.1140/epjc/s10052-016-4261-z), arXiv:[1605.03171](https://arxiv.org/abs/1605.03171) [hep-ex]

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V. Khachatryan et al., **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) 051801, doi:[10.1103/PhysRevLett.114.051801](https://doi.org/10.1103/PhysRevLett.114.051801), arXiv:[1410.6315](https://arxiv.org/abs/1410.6315) [hep-ex]

V. Khachatryan et al., **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](https://doi.org/10.1038/nature14474), arXiv:[1411.4413](https://arxiv.org/abs/1411.4413) [hep-ex]

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S. Chatrchyan et al., **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) 182001, doi:[10.1103/PhysRevLett.112.182001](https://doi.org/10.1103/PhysRevLett.112.182001), arXiv:[1311.3924](https://arxiv.org/abs/1311.3924) [hep-ex]

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