

# Publication List from all Collaborations and Experiments

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- A. Tumasyan et al., **Measurement of  $W^{\pm}\gamma$  differential cross sections in proton-proton collisions at  $\sqrt{s} = 13$  TeV and effective field theory constraints**, (2021). <http://arxiv.org/abs/2111.13948>, arXiv:2111.13948 [hep-ex]
- A. Tumasyan et al., **Search for supersymmetry in final states with two or three soft leptons and missing transverse momentum in proton-proton collisions at  $\sqrt{s} = 13$  TeV**, (2021). <http://arxiv.org/abs/2111.06296>, arXiv:2111.06296 [hep-ex]
- A. Tumasyan et al., **Study of dijet events with large rapidity separation in proton-proton collisions at  $\sqrt{s} = 2.76$  TeV**, (2021). <http://arxiv.org/abs/2111.04605>, arXiv:2111.04605 [hep-ex]
- A. Tumasyan et al., **Search for a heavy resonance decaying into a top quark and a W boson in the lepton+jets final state at  $\sqrt{s} = 13$  TeV**, (2021). <http://arxiv.org/abs/2111.10216>, arXiv:2111.10216 [hep-ex]
- A. Tumasyan et al., **Observation of triple  $J/\psi$  meson production in proton-proton collisions at  $\sqrt{s} = 13$  TeV**, (2021). <http://arxiv.org/abs/2111.05370>, arXiv:2111.05370 [hep-ex]
- A. Tumasyan et al., **Search for heavy resonances decaying to ZZ or ZW and axion-like particles mediating nonresonant ZZ or ZH production at  $\sqrt{s} = 13$  TeV**, (2021). <http://arxiv.org/abs/2111.13669>, arXiv:2111.13669 [hep-ex]
- A. Tumasyan et al., **Measurement and QCD analysis of double-differential inclusive jet cross sections in proton-proton collisions at  $\sqrt{s} = 13$  TeV**, (2021). <http://arxiv.org/abs/2111.10431>, arXiv:2111.10431 [hep-ex]
- A. Tumasyan et al., **Measurement of the inclusive and differential WZ production cross sections, polarization angles, and triple gauge couplings in pp collisions at  $\sqrt{s} = 13$  TeV**, (2021). <http://arxiv.org/abs/2110.11231>, arXiv:2110.11231 [hep-ex]
- A. Tumasyan et al., **Search for long-lived particles decaying to leptons with large impact parameter in proton-proton collisions at  $\sqrt{s} = 13$  TeV**, (2021). <http://arxiv.org/abs/2110.04809>, arXiv:2110.04809 [hep-ex]
- A. Tumasyan et al., **Analysis of the CP structure of the Yukawa coupling between the Higgs boson and  $\tau$  leptons in proton-proton collisions at  $\sqrt{s} = 13$  TeV**, (2021). <http://arxiv.org/abs/2110.04836>, arXiv:2110.04836 [hep-ex]
- A. Tumasyan et al., **Search for long-lived particles produced in association with a Z boson in proton-proton collisions at  $\sqrt{s} = 13$  TeV**, (2021). <http://arxiv.org/abs/2110.13218>, arXiv:2110.13218 [hep-ex]
- A. Tumasyan et al., **First search for exclusive diphoton production at high mass with tagged protons in proton-proton collisions at  $\sqrt{s} = 13$  TeV**, (2021). <http://arxiv.org/abs/2110.05916>, arXiv:2110.05916 [hep-ex]
- A. Tumasyan et al., **Search for heavy resonances decaying to  $Z(\nu\bar{\nu})V(q\bar{q}')$  in proton-proton collisions at  $\sqrt{s} = 13$  TeV**, (2021). <http://arxiv.org/abs/2109.08268>, arXiv:2109.08268 [hep-ex]
- A. Tumasyan et al., **Study of quark and gluon jet substructure in Z+jet and dijet events from pp collisions**, (2021). <http://arxiv.org/abs/2109.03340>, arXiv:2109.03340 [hep-ex]
- A. Tumasyan et al., **Search for heavy resonances decaying to WW, WZ, or WH boson pairs in the lepton plus merged jet final state in proton-proton collisions at  $\sqrt{s} = 13$  TeV**, (2021). <http://arxiv.org/abs/2109.06055>, arXiv:2109.06055 [hep-ex]
- A. Tumasyan et al., **Measurement of double-parton scattering in inclusive production of four jets with low transverse momentum in proton-proton collisions at  $\sqrt{s} = 13$  TeV**, (2021). <http://arxiv.org/abs/2109.13822>, arXiv:2109.13822 [hep-ex]

- A. Tumasyan et al., **Observation of  $B_s^0$  mesons and measurement of the  $B_s^0/B^+$  yield ratio in PbPb collisions at  $\sqrt{s_{NN}} = 5.02$  TeV**, (2021). <http://arxiv.org/abs/2109.01908>, arXiv:2109.01908 [hep-ex]
- A. Tumasyan et al., **Measurement of the top quark mass using events with a single reconstructed top quark in pp collisions at  $\sqrt{s} = 13$  TeV**, (2021). <http://arxiv.org/abs/2108.10407>, arXiv:2108.10407 [hep-ex]
- A. Tumasyan et al., **Measurement of differential  $t\bar{t}$  production cross sections in the full kinematic range using lepton+jets events from proton-proton collisions at  $\sqrt{s} = 13$  TeV**, (2021). <http://arxiv.org/abs/2108.02803>, arXiv:2108.02803 [hep-ex]
- A. Tumasyan et al., **Probing effective field theory operators in the associated production of top quarks with a Z boson in multilepton final states at  $\sqrt{s} = 13$  TeV**, (2021). <http://arxiv.org/abs/2107.13896>, arXiv:2107.13896 [hep-ex]
- A. Tumasyan et al., **Measurement of the inclusive and differential Higgs boson production cross sections in the decay mode to a pair of  $\tau$  leptons in pp collisions at  $\sqrt{s} = 13$  TeV**, (2021). <http://arxiv.org/abs/2107.11486>, arXiv:2107.11486 [hep-ex]
- A. Tumasyan et al., **Search for long-lived particles decaying in the CMS endcap muon detectors in proton-proton collisions at  $\sqrt{s} = 13$  TeV**, (2021). <http://arxiv.org/abs/2107.04838>, arXiv:2107.04838 [hep-ex]
- A. Tumasyan et al., **Measurement of the inclusive and differential  $t\bar{t}\gamma$  cross sections in the single-lepton channel and EFT interpretation at  $\sqrt{s} = 13$  TeV**, (2021). <http://arxiv.org/abs/2107.01508>, arXiv:2107.01508 [hep-ex]
- A. Tumasyan et al., **Measurement of prompt open-charm production cross sections in proton-proton collisions at  $\sqrt{s} = 13$  TeV**, (2021). <http://arxiv.org/abs/2107.01476>, arXiv:2107.01476 [hep-ex]
- A. Tumasyan et al., **Search for electroweak production of charginos and neutralinos in proton-proton collisions at  $\sqrt{s} = 13$  TeV**, (2021). <http://arxiv.org/abs/2106.14246>, arXiv:2106.14246 [hep-ex]
- A. Tumasyan et al., **Fragmentation of jets containing a prompt  $J/\psi$  meson in PbPb and pp collisions at  $\sqrt{s_{NN}} = 5.02$  TeV**, (2021). <http://arxiv.org/abs/2106.13235>, arXiv:2106.13235 [hep-ex]
- A. Tumasyan et al., **Search for  $W\gamma$  resonances in proton-proton collisions at  $\sqrt{s} = 13$  TeV using hadronic decays of Lorentz-boosted W bosons**, (2021). <http://arxiv.org/abs/2106.10509>, arXiv:2106.10509 [hep-ex]
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- A.M. Sirunyan et al., **Search for a heavy resonance decaying to a top quark and a W boson at  $\sqrt{s} = 13$  TeV in the fully hadronic final state**, (2021). <http://arxiv.org/abs/2104.12853>, arXiv:2104.12853 [hep-ex]
- A.M. Sirunyan et al., **Using Z boson events to study parton-medium interactions in PbPb collisions**, (2021). <http://arxiv.org/abs/2103.04377>, arXiv:2103.04377 [hep-ex]
- A.M. Sirunyan et al., **Evidence for  $X(3872)$  in PbPb collisions and studies of its prompt production at  $\sqrt{s_{NN}} = 5.02$  TeV**, (2021). <http://arxiv.org/abs/2102.13048>, arXiv:2102.13048 [hep-ex]
- A.M. Sirunyan et al., **Correlations of azimuthal anisotropy Fourier harmonics with subevent cumulants in  $pPb$  collisions at  $\sqrt{s_{NN}} = 8.16$  TeV**, *Phys. Rev. C.* 103 (2021) 014902, doi:10.1103/PhysRevC.103.014902, arXiv:1905.09935 [hep-ex]
- A.M. Sirunyan et al., **Search for supersymmetry in final states with two oppositely charged same-flavor leptons and missing transverse momentum in proton-proton collisions at  $\sqrt{s} = 13$  TeV**, *JHEP.* 04 (2021) 123, doi:10.1007/JHEP04(2021)123, arXiv:2012.08600 [hep-ex]
- A.M. Sirunyan et al., **Measurement of prompt  $D^0$  and  $\bar{D}^0$  meson azimuthal anisotropy and search for strong electric fields in PbPb collisions at  $\sqrt{s_{NN}} = 5.02$  TeV**, *Phys. Lett. B.* 816 (2021) 136253, doi:10.1016/j.physletb.2021.136253, arXiv:2009.12628 [hep-ex]
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- A.M. Sirunyan et al., **Development and validation of HERWIG 7 tunes from CMS underlying-event measurements**, *Eur. Phys. J. C.* 81 (2021) 312, doi:10.1140/epjc/s10052-021-08949-5, arXiv:2011.03422 [hep-ex]
- A.M. Sirunyan et al., **Measurement of the inclusive and differential Higgs boson production cross sections in the leptonic WW decay mode at  $\sqrt{s} = 13$  TeV**, *JHEP.* 03 (2021) 003, doi:10.1007/JHEP03(2021)003, arXiv:2007.01984 [hep-ex]

- A.M. Sirunyan et al., **Measurement of the  $CP$ -violating phase  $\phi_s$  in the  $B_s^0 \rightarrow J/\psi \phi(1020) \rightarrow \mu^+ \mu^- K^+ K^-$  channel in proton-proton collisions at  $\sqrt{s} = 13$  TeV**, *Phys. Lett. B.* 816 (2021) 136188, doi:[10.1016/j.physletb.2021.136188](https://doi.org/10.1016/j.physletb.2021.136188), arXiv:[2007.02434](https://arxiv.org/abs/2007.02434) [hep-ex]
- A.M. Sirunyan et al., **Measurement of the azimuthal anisotropy of Image 1 and Image 2 mesons in PbPb collisions at  $\sqrt{s_{NN}}=5.02$  TeV**, *Phys. Lett. B.* 819 (2021) 136385, doi:[10.1016/j.physletb.2021.136385](https://doi.org/10.1016/j.physletb.2021.136385), arXiv:[2006.07707](https://arxiv.org/abs/2006.07707) [hep-ex]
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- A.M. Sirunyan et al., **Measurement of b jet shapes in proton-proton collisions at  $\sqrt{s} = 5.02$  TeV**, *JHEP.* 05 (2021) 054, doi:[10.1007/JHEP05\(2021\)054](https://doi.org/10.1007/JHEP05(2021)054), arXiv:[2005.14219](https://arxiv.org/abs/2005.14219) [hep-ex]
- A.M. Sirunyan et al., **Measurements of  $pp \rightarrow ZZ$  production cross sections and constraints on anomalous triple gauge couplings at  $\sqrt{s} = 13$  TeV**, *Eur. Phys. J. C.* 81 (2021) 200, doi:[10.1140/epjc/s10052-020-08817-8](https://doi.org/10.1140/epjc/s10052-020-08817-8), arXiv:[2009.01186](https://arxiv.org/abs/2009.01186) [hep-ex]
- A.M. Sirunyan et al., **Measurement of the Z boson differential production cross section using its invisible decay mode ( $Z \rightarrow \nu\bar{\nu}$ ) in proton-proton collisions at  $\sqrt{s} = 13$  TeV**, *JHEP.* 05 (2021) 205, doi:[10.1007/JHEP05\(2021\)205](https://doi.org/10.1007/JHEP05(2021)205), arXiv:[2012.09254](https://arxiv.org/abs/2012.09254) [hep-ex]
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- A.M. Sirunyan et al., **Search for dark photons in Higgs boson production via vector boson fusion in proton-proton collisions at  $\sqrt{s} = 13$  TeV**, *JHEP.* 03 (2021) 011, doi:[10.1007/JHEP03\(2021\)011](https://doi.org/10.1007/JHEP03(2021)011), arXiv:[2009.14009](https://arxiv.org/abs/2009.14009) [hep-ex]
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