

# Publication List from all Collaborations and Experiments

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July 4, 2022

- A. Tumasyan et al., **Search for new particles in an extended Higgs sector with four b quarks in the final state at  $\sqrt{s} = 13$  TeV**, (2022). <http://arxiv.org/abs/2203.00480>, arXiv:2203.00480 [hep-ex]
- A. Tumasyan et al., **Search for Higgs boson pair production in the four b quark final state in proton-proton collisions at  $\sqrt{s} = 13$  TeV**, (2022). <http://arxiv.org/abs/2202.09617>, arXiv:2202.09617 [hep-ex]
- A. Tumasyan et al., **First evidence for off-shell production of the Higgs boson and measurement of its width**, (2022). <http://arxiv.org/abs/2202.06923>, arXiv:2202.06923 [hep-ex]
- A. Tumasyan et al., **Search for a  $W'$  boson decaying to a vector-like quark and a top or bottom quark in the all-jets final state at  $\sqrt{s} = 13$  TeV**, (2022). <http://arxiv.org/abs/2202.12988>, arXiv:2202.12988 [hep-ex]
- A. Tumasyan et al., **Measurement of the Drell-Yan forward-backward asymmetry at high dilepton masses in proton-proton collisions at  $\sqrt{s} = 13$  TeV**, (2022). <http://arxiv.org/abs/2202.12327>, arXiv:2202.12327 [hep-ex]
- A. Tumasyan et al., **Nuclear modification of  $\Upsilon$  states in pPb collisions at  $\sqrt{s_{NN}} = 5.02$  TeV**, (2022). <http://arxiv.org/abs/2202.11807>, arXiv:2202.11807 [hep-ex]
- A. Tumasyan et al., **Search for new physics in the lepton plus missing transverse momentum final state in proton-proton collisions at  $\sqrt{s} = 13$  TeV**, (2022). <http://arxiv.org/abs/2202.06075>, arXiv:2202.06075 [hep-ex]
- A. Tumasyan et al., **Search for long-lived heavy neutral leptons with displaced vertices in proton-proton collisions at  $\sqrt{s} = 13$  TeV**, (2022). <http://arxiv.org/abs/2201.05578>, arXiv:2201.05578 [hep-ex]
- A. Tumasyan et al., **Search for resonances decaying to three W bosons in proton-proton collisions at  $\sqrt{s} = 13$  TeV**, (2022). <http://arxiv.org/abs/2201.08476>, arXiv:2201.08476 [hep-ex]
- A. Tumasyan et al., **Identification of hadronic tau lepton decays using a deep neural network**, (2022). <http://arxiv.org/abs/2201.08458>, arXiv:2201.08458 [hep-ex]
- A. Tumasyan et al., **Search for high-mass resonances decaying to a jet and a Lorentz-boosted resonance in proton-proton collisions at  $\sqrt{s} = 13$  TeV**, (2022). <http://arxiv.org/abs/2201.02140>, arXiv:2201.02140 [hep-ex]
- A. Tumasyan et al., **Search for electroweak production of charginos and neutralinos in proton-proton collisions at  $\sqrt{s} = 13$  TeV**, *JHEP.* 04 (2022) 147, doi:10.1007/JHEP04(2022)147, arXiv:2106.14246 [hep-ex]
- 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**, *Phys. Rev. D.* 105 (2022) 052003, doi:10.1103/PhysRevD.105.052003, arXiv:2111.13948 [hep-ex]
- A. Tumasyan et al., **Search for a right-handed W boson and a heavy neutrino in proton-proton collisions at  $\sqrt{s} = 13$  TeV**, *JHEP.* 04 (2022) 047, doi:10.1007/JHEP04(2022)047, arXiv:2112.03949 [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**, *JHEP.* 04 (2022) 091, doi:10.1007/JHEP04(2022)091, arXiv:2111.06296 [hep-ex]
- A. Tumasyan et al., **Search for flavor-changing neutral current interactions of the top quark and the Higgs boson decaying to a bottom quark-antiquark pair at  $\sqrt{s} = 13$  TeV**, *JHEP.* 02 (2022) 169, doi:10.1007/JHEP02(2022)169, arXiv:2112.09734 [hep-ex]
- A. Tumasyan et al., **Measurement of the inclusive  $t\bar{t}$  production cross section in proton-proton collisions at  $\sqrt{s} = 5.02$  TeV**, *JHEP.* 04 (2022) 144, doi:10.1007/JHEP04(2022)144, arXiv:2112.09114 [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**, *Phys. Rev. Lett.* 128 (2022) 081805, doi:[10.1103/PhysRevLett.128.081805](https://doi.org/10.1103/PhysRevLett.128.081805), arXiv:[2107.11486](https://arxiv.org/abs/2107.11486) [hep-ex]
- A. Tumasyan et al., **Strategies and performance of the CMS silicon tracker alignment during LHC Run 2**, *Nucl. Instrum. Meth. A* 1037 (2022) 166795, doi:[10.1016/j.nima.2022.166795](https://doi.org/10.1016/j.nima.2022.166795), arXiv:[2111.08757](https://arxiv.org/abs/2111.08757) [physics.ins-det]
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- 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**, *Eur. Phys. J. C* 82 (2022) 153, doi:[10.1140/epjc/s10052-022-10027-3](https://doi.org/10.1140/epjc/s10052-022-10027-3), arXiv:[2110.04809](https://arxiv.org/abs/2110.04809) [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**, *Phys. Rev. D* 105 (2022) 032008, doi:[10.1103/PhysRevD.105.032008](https://doi.org/10.1103/PhysRevD.105.032008), arXiv:[2109.06055](https://arxiv.org/abs/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**, *JHEP*. 01 (2022) 177, doi:[10.1007/JHEP01\(2022\)177](https://doi.org/10.1007/JHEP01(2022)177), arXiv:[2109.13822](https://arxiv.org/abs/2109.13822) [hep-ex]
- A. Tumasyan et al., **Study of dijet events with large rapidity separation in proton-proton collisions at  $\sqrt{s} = 2.76$  TeV**, *JHEP*. 03 (2022) 189, doi:[10.1007/JHEP03\(2022\)189](https://doi.org/10.1007/JHEP03(2022)189), arXiv:[2111.04605](https://arxiv.org/abs/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**, *JHEP*. 04 (2022) 048, doi:[10.1007/JHEP04\(2022\)048](https://doi.org/10.1007/JHEP04(2022)048), arXiv:[2111.10216](https://arxiv.org/abs/2111.10216) [hep-ex]
- A. Tumasyan et al., **Observation of Bs0 mesons and measurement of the Bs0/B+ yield ratio in PbPb collisions at Image 1 TeV**, *Phys. Lett. B* 829 (2022) 137062, doi:[10.1016/j.physletb.2022.137062](https://doi.org/10.1016/j.physletb.2022.137062), arXiv:[2109.01908](https://arxiv.org/abs/2109.01908) [hep-ex]
- A.M. Sirunyan et al., **Using Z Boson Events to Study Parton-Medium Interactions in Pb-Pb Collisions**, *Phys. Rev. Lett.* 128 (2022) 122301, doi:[10.1103/PhysRevLett.128.122301](https://doi.org/10.1103/PhysRevLett.128.122301), arXiv:[2103.04377](https://arxiv.org/abs/2103.04377) [hep-ex]
- A. Tumasyan et al., **Measurement of the production cross section for Z+b jets in proton-proton collisions at  $\sqrt{s} = 13$  TeV**, *Phys. Rev. D* 105 (2022) 092014, doi:[10.1103/PhysRevD.105.092014](https://doi.org/10.1103/PhysRevD.105.092014), arXiv:[2112.09659](https://arxiv.org/abs/2112.09659) [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**, *Phys. Lett. B* 825 (2022) 136842, doi:[10.1016/j.physletb.2021.136842](https://doi.org/10.1016/j.physletb.2021.136842), arXiv:[2106.13235](https://arxiv.org/abs/2106.13235) [hep-ex]
- A. Tumasyan et al., **Search for heavy resonances decaying to a pair of Lorentz-boosted Higgs bosons in final states with leptons and a bottom quark pair at  $\sqrt{s} = 13$  TeV**, *JHEP*. 05 (2022) 005, doi:[10.1007/JHEP05\(2022\)005](https://doi.org/10.1007/JHEP05(2022)005), arXiv:[2112.03161](https://arxiv.org/abs/2112.03161) [hep-ex]
- A. Tumasyan et al., **Search for strongly interacting massive particles generating trackless jets in proton-proton collisions at  $\sqrt{s} = 13$  TeV**, *Eur. Phys. J. C* 82 (2022) 213, doi:[10.1140/epjc/s10052-022-10095-5](https://doi.org/10.1140/epjc/s10052-022-10095-5), arXiv:[2105.09178](https://arxiv.org/abs/2105.09178) [hep-ex]
- A. Tumasyan et al., **A new calibration method for charm jet identification validated with proton-proton collision events at  $\sqrt{s} = 13$  TeV**, *JINST*. 17 (2022) P03014, doi:[10.1088/1748-0221/17/03/P03014](https://doi.org/10.1088/1748-0221/17/03/P03014), arXiv:[2111.03027](https://arxiv.org/abs/2111.03027) [hep-ex]
- A. Tumasyan et al., **Search for long-lived particles decaying into muon pairs in proton-proton collisions at  $\sqrt{s} = 13$  TeV collected with a dedicated high-rate data stream**, *JHEP*. 04 (2022) 062, doi:[10.1007/JHEP04\(2022\)062](https://doi.org/10.1007/JHEP04(2022)062), arXiv:[2112.13769](https://arxiv.org/abs/2112.13769) [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**, *JHEP*. 06 (2022) 012, doi:[10.1007/JHEP06\(2022\)012](https://doi.org/10.1007/JHEP06(2022)012), arXiv:[2110.04836](https://arxiv.org/abs/2110.04836) [hep-ex]
- A. Tumasyan et al., **Inclusive and differential cross section measurements of single top quark production in association with a Z boson in proton-proton collisions at  $\sqrt{s} = 13$  TeV**, *JHEP*. 02 (2022) 107, doi:[10.1007/JHEP02\(2022\)107](https://doi.org/10.1007/JHEP02(2022)107), arXiv:[2111.02860](https://arxiv.org/abs/2111.02860) [hep-ex]
- A. Tumasyan et al., **Search for heavy resonances decaying to ZZ or ZW and axion-like particles mediating non-resonant ZZ or ZH production at  $\sqrt{s} = 13$  TeV**, *JHEP*. 04 (2022) 087, doi:[10.1007/JHEP04\(2022\)087](https://doi.org/10.1007/JHEP04(2022)087), arXiv:[2111.13669](https://arxiv.org/abs/2111.13669) [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**, *JHEP*. 03 (2022) 160, doi:[10.1007/JHEP03\(2022\)160](https://doi.org/10.1007/JHEP03(2022)160), arXiv:[2110.13218](https://arxiv.org/abs/2110.13218) [hep-ex]

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- 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**, *Phys. Lett. B.* 826 (2022) 136888, doi:[10.1016/j.physletb.2022.136888](https://doi.org/10.1016/j.physletb.2022.136888), arXiv:[2106.10509](https://arxiv.org/abs/2106.10509) [hep-ex]
- A. Tumasyan et al., **Observation of  $B^0 \rightarrow \psi(2S) K_S^0 \pi^+ \pi^-$  and  $B^0 \rightarrow \psi(2S) K_S^0$  decays**, *Eur. Phys. J. C.* 82 (2022) 499, doi:[10.1140/epjc/s10052-022-10315-y](https://doi.org/10.1140/epjc/s10052-022-10315-y), arXiv:[2201.09131](https://arxiv.org/abs/2201.09131) [hep-ex]
- A. Tumasyan et al., **Measurement of the inclusive and differential  $t\bar{t}\gamma$  cross sections in the dilepton channel and effective field theory interpretation in proton-proton collisions at  $\sqrt{s} = 13$  TeV**, *JHEP*. 05 (2022) 091, doi:[10.1007/JHEP05\(2022\)091](https://doi.org/10.1007/JHEP05(2022)091), arXiv:[2201.07301](https://arxiv.org/abs/2201.07301) [hep-ex]
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