

# Publication List from all Collaborations and Experiments

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December 1, 2022

- A. Tumasyan et al., **Measurements of the associated production of a W boson and a charm quark in proton-proton collisions at  $\sqrt{s} = 8$  TeV**, (2021). <http://arxiv.org/abs/2112.00895>, arXiv:2112.00895 [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]
- V. Khachatryan et al., **Exclusive and semi-exclusive pi+pi- production in proton-proton collisions at  $\sqrt{s} = 7$  TeV**, (2017). <http://arxiv.org/abs/1706.08310>, arXiv:1706.08310 [hep-ex]
- G.L. Bayatian et al., **CMS expression of interest in the SLHC**, (2007)
- 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 resonant production of strongly coupled dark matter in proton-proton collisions at 13 TeV**, *JHEP.* 06 (2022) 156, doi:10.1007/JHEP06(2022)156, arXiv:2112.11125 [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, arXiv:2107.11486 [hep-ex]
- A. Tumasyan et al., **Search for Flavor-Changing Neutral Current Interactions of the Top Quark and Higgs Boson in Final States with Two Photons in Proton-Proton Collisions at  $\sqrt{s} = 13$  TeV**, *Phys. Rev. Lett.* 129 (2022) 032001, doi:10.1103/PhysRevLett.129.032001, arXiv:2111.02219 [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**, *JHEP.* 07 (2022) 032, doi:10.1007/JHEP07(2022)032, arXiv:2110.11231 [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, arXiv:2111.08757 [physics.ins-det]
- 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**, *Phys. Rev. D.* 106 (2022) 012004, doi:10.1103/PhysRevD.106.012004, 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**, *JHEP*. 01 (2022) 188, doi:[10.1007/JHEP01\(2022\)188](https://doi.org/10.1007/JHEP01(2022)188), arXiv:[2109.03340](https://arxiv.org/abs/2109.03340) [hep-ex]
- A. Tumasyan et al., **Search for long-lived particles decaying to leptons with large impact parameter in proton-proton collisions at  $\sqrt{s} = 13\text{TeV}$** , *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  $\sqrt{s} = 13\text{ TeV}$** , *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  $\sqrt{s} = 13\text{ TeV}$** , *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  $\sqrt{s} = 2.76\text{ TeV}$** , *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 resonances decaying to three W bosons in the hadronic final state in proton-proton collisions at  $\sqrt{s} = 13\text{ TeV}$** , *Phys. Rev. D*. 106 (2022) 012002, doi:[10.1103/PhysRevD.106.012002](https://doi.org/10.1103/PhysRevD.106.012002), arXiv:[2112.13090](https://arxiv.org/abs/2112.13090) [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  $\sqrt{s} = 13\text{ TeV}$** , *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  $\sqrt{s} = 13\text{ TeV}$** , *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., **Search for low-mass dilepton resonances in Higgs boson decays to four-lepton final states in protonproton collisions at  $\sqrt{s} = 13\text{TeV}$** , *Eur. Phys. J. C*. 82 (2022) 290, doi:[10.1140/epjc/s10052-022-10127-0](https://doi.org/10.1140/epjc/s10052-022-10127-0), arXiv:[2111.01299](https://arxiv.org/abs/2111.01299) [hep-ex]
- A. Tumasyan et al., **Fragmentation of jets containing a prompt J / $\psi$  meson in PbPb and pp collisions at  $\sqrt{s_{NN}} = 5.02\text{ TeV}$** , *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., **Probing Charm Quark Dynamics via Multiparticle Correlations in Pb-Pb Collisions at  $\sqrt{s_{NN}} = 5.02\text{ TeV}$** , *Phys. Rev. Lett.* 129 (2022) 022001, doi:[10.1103/PhysRevLett.129.022001](https://doi.org/10.1103/PhysRevLett.129.022001), arXiv:[2112.12236](https://arxiv.org/abs/2112.12236) [hep-ex]
- A. Tumasyan et al., **Evidence for WW/WZ vector boson scattering in the decay channel  $\ell\nu qq$  produced in association with two jets in proton-proton collisions at  $s=13\text{ TeV}$** , *Phys. Lett. B*. 834 (2022) 137438, doi:[10.1016/j.physletb.2022.137438](https://doi.org/10.1016/j.physletb.2022.137438), arXiv:[2112.05259](https://arxiv.org/abs/2112.05259) [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  $\sqrt{s}=13\text{ TeV}$** , *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 protonproton collisions at  $\sqrt{s} = 13\text{TeV}$** , *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  $\sqrt{s} = 13\text{ TeV}$** , *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  $\sqrt{s} = 13\text{ TeV}$  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  $\sqrt{s} = 13\text{ TeV}$** , *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]

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- 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]
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- A. Tumasyan et al., **Measurement and QCD analysis of double-differential inclusive jet cross sections in proton-proton collisions at  $\sqrt{s} = 13$  TeV**, *JHEP*. 02 (2022) 142, doi:[10.1007/JHEP02\(2022\)142](https://doi.org/10.1007/JHEP02(2022)142), arXiv:[2111.10431](https://arxiv.org/abs/2111.10431) [hep-ex]
- A.M. Sirunyan et al., **Evidence for X(3872) in Pb-Pb Collisions and Studies of its Prompt Production at  $\sqrt{s_{NN}}=5.02$  TeV**, *Phys. Rev. Lett.* 128 (2022) 032001, doi:[10.1103/PhysRevLett.128.032001](https://doi.org/10.1103/PhysRevLett.128.032001), arXiv:[2102.13048](https://arxiv.org/abs/2102.13048) [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**, *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  $B^0_S \rightarrow \psi(2S) K_S^0$  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]
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