

# Publication List

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A. Hayrapetyan et al., **Characterization of the quantum state of top quark pairs produced in proton-proton collisions at  $\sqrt{s} = 13$  TeV using the beam and helicity bases**, (2025). <http://arxiv.org/abs/2512.17557>, arXiv:2512.17557 [hep-ex]

A. Hayrapetyan et al., **Measurement of Z  $\gamma$  production in proton-proton collisions at  $\sqrt{s} = 13.6$  TeV and constraints on neutral triple gauge couplings**, (2025). <http://arxiv.org/abs/2512.08582>, arXiv:2512.08582 [hep-ex]

A. Hayrapetyan et al., **Machine-learning techniques for model-independent searches in dijet final states**, (2025). <http://arxiv.org/abs/2512.20395>, arXiv:2512.20395 [hep-ex]

A. Hayrapetyan et al., **Search for new physics in the final state with a single photon and large missing transverse momentum in proton-proton collisions at  $\sqrt{s} = 13$  TeV**, (2025). <http://arxiv.org/abs/2511.17310>, arXiv:2511.17310 [hep-ex]

V. Chekhovsky et al., **Jet fragmentation function and groomed substructure of bottom quark jets in proton-proton collisions at 5.02 TeV**, (2025). <http://arxiv.org/abs/2511.10666>, arXiv:2511.10666 [hep-ex]

A. Hayrapetyan et al., **Search for low-mass hidden-valley dark showers with non-prompt muon pairs in proton-proton collisions at  $\sqrt{s} = 13$  TeV**, (2025). <http://arxiv.org/abs/2511.11888>, arXiv:2511.11888 [hep-ex]

A. Hayrapetyan et al., **Search for Higgsinos in final states with low-momentum lepton-track pairs at 13 TeV**, (2025). <http://arxiv.org/abs/2511.16394>, arXiv:2511.16394 [hep-ex]

A. Hayrapetyan et al., **Measurements of electroweak production of a photon in association with two jets in proton-proton collisions at  $\sqrt{s} = 13$  TeV**, (2025). <http://arxiv.org/abs/2512.00502>, arXiv:2512.00502 [hep-ex]

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A. Hayrapetyan et al., **Search for heavy H  $\gamma$  and Z  $\gamma$  resonances with a bottom quark-antiquark pair in the final state in proton-proton collisions at  $\sqrt{s} = 13$  TeV**, (2025). <http://arxiv.org/abs/2511.14583>, arXiv:2511.14583 [hep-ex]

V. Chekhovsky et al., **Search for a new neutral gauge boson produced in association with one or two b jets and decaying into a pair of muons in proton-proton collisions at  $\sqrt{s} = 13$  TeV**, (2025). <http://arxiv.org/abs/2511.11853>, arXiv:2511.11853 [hep-ex]

A. Hayrapetyan et al., **Inclusive and differential measurements of the  $t\bar{t}\gamma$  cross section and the  $t\bar{t}\gamma/t\bar{t}$  cross section ratio in proton-proton collisions at  $\sqrt{s} = 13$  TeV**, (2025). <http://arxiv.org/abs/2511.01995>, arXiv:2511.01995 [hep-ex]

A. Hayrapetyan et al., **Search for light pseudoscalar bosons, pair-produced in Higgs boson decays in the four-electron final state in proton-proton collisions at  $\sqrt{s} = 13$  TeV**, (2025). <http://arxiv.org/abs/2511.19563>, arXiv:2511.19563 [hep-ex]

A. Hayrapetyan et al., **Discovery of suppressed charged-particle production in ultrarelativistic oxygen-oxygen collisions**, (2025). <http://arxiv.org/abs/2510.09864>, arXiv:2510.09864 [nucl-ex]

V. Chekhovsky et al., **Measurement of the ratio of the  $B_c^+ \rightarrow J/\psi \tau^+ \nu_\tau$  and  $B_c^+ \rightarrow J/\psi \mu^+ \nu_\mu$  branching fractions using three-prong  $\tau$  lepton decays**, (2025). <http://arxiv.org/abs/2510.21559>, arXiv:2510.21559 [hep-ex]

A. Hayrapetyan et al., **Characterizing the initial state and dynamical evolution in XeXe and PbPb collisions using multiparticle cumulants**, (2025). <http://arxiv.org/abs/2510.26766>, arXiv:2510.26766 [nucl-ex]

A. Hayrapetyan et al., **Observation of long-range collective flow in OO and NeNe collisions and implications for nuclear structure studies**, (2025). <http://arxiv.org/abs/2510.02580>, arXiv:2510.02580 [nucl-ex]

- A. Hayrapetyan et al., **Observation of tWZ production at the CMS experiment**, (2025). <http://arxiv.org/abs/2510.19080>, arXiv:2510.19080 [hep-ex]
- V. Chekhovsky et al., **Search for dark matter production in association with bottom quarks and a lepton pair in proton-proton collisions at  $\sqrt{s} = 13$  TeV**, (2025). <http://arxiv.org/abs/2510.12396>, arXiv:2510.12396 [hep-ex]
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- A. Hayrapetyan et al., **Search for single production of a vector-like T quark decaying to a top quark and a neutral scalar boson in the lepton+jets final state in proton-proton collisions at  $\sqrt{s} = 13$  TeV**, (2025). <http://arxiv.org/abs/2510.25874>, arXiv:2510.25874 [hep-ex]
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- A. Hayrapetyan et al., **Search for resonances decaying to an anomalous jet and a Higgs boson in proton-proton collisions at  $\sqrt{s} = 13$  TeV**, (2025). <http://arxiv.org/abs/2509.13635>, arXiv:2509.13635 [hep-ex]
- A. Hayrapetyan et al., **Model-independent measurement of the Higgs boson associated production with two jets and decaying to a pair of W bosons in proton-proton collisions at  $\sqrt{s} = 13$  TeV**, (2025). <http://arxiv.org/abs/2509.07958>, arXiv:2509.07958 [hep-ex]
- A. Hayrapetyan et al., **Measurements of ttW differential cross sections and the leptonic charge asymmetry at  $\sqrt{s} = 13$  TeV**, (2025). <http://arxiv.org/abs/2509.13512>, arXiv:2509.13512 [hep-ex]
- V. Chekhovsky et al., **Measurement of D<sup>0</sup> meson photoproduction in ultraperipheral heavy ion collisions**, (2025). <http://arxiv.org/abs/2509.08626>, arXiv:2509.08626 [nucl-ex]
- V. Chekhovsky et al., **Measurement of the dineutrino system kinematic variables in dileptonic top quark pair production in proton-proton collisions at  $\sqrt{s} = 13$  TeV**, (2025). <http://arxiv.org/abs/2510.00160>, arXiv:2510.00160 [hep-ex]
- A. Hayrapetyan et al., **First exclusive reconstruction of the B<sup>\*+</sup>, B<sup>\*0</sup>, and B<sub>s</sub><sup>\*0</sup> mesons and precise measurement of their masses**, (2025). <http://arxiv.org/abs/2508.05820>, arXiv:2508.05820 [hep-ex]
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- V. Chekhovsky et al., **Exploring small-angle emissions in charm quark jets in proton-proton collisions at  $\sqrt{s} = 5.02$  TeV**, (2025). <http://arxiv.org/abs/2507.13469>, arXiv:2507.13469 [nucl-ex]
- V. Chekhovsky et al., **Evidence of medium response to hard probes using correlations of Z bosons with hadrons in heavy ion collisions**, (2025). <http://arxiv.org/abs/2507.09307>, arXiv:2507.09307 [nucl-ex]
- A. Hayrapetyan et al., **Search for resonant production of pairs of dijet resonances through broad mediators in proton-proton collisions at  $\sqrt{s} = 13$  TeV**, (2025). <http://arxiv.org/abs/2507.17884>, arXiv:2507.17884 [hep-ex]
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- V. Chekhovsky et al., **Observation of coherent  $\phi(1020)$  meson photoproduction in ultraperipheral PbPb collisions at  $\sqrt{s_{NN}} = 5.36$  TeV**, (2025). <http://arxiv.org/abs/2504.05193>, arXiv:2504.05193 [nucl-ex]
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