

# Publication List

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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., **Identification of tau leptons using a convolutional neural network with domain adaptation**, (2025). <http://arxiv.org/abs/2511.05468>, arXiv:2511.05468 [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., **Search for long-lived particles using displaced vertices with low-momentum tracks in proton-proton collisions at  $\sqrt{s} = 13$  TeV**, (2025). <http://arxiv.org/abs/2511.08212>, arXiv:2511.08212 [hep-ex]

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]

A. Hayrapetyan et al., **Search for dijet resonances with data scouting in proton-proton collisions at  $\sqrt{s} = 13$  TeV**, (2025). <http://arxiv.org/abs/2510.21641>, arXiv:2510.21641 [hep-ex]

- 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]
- A. Hayrapetyan et al., Vector boson scattering and anomalous quartic couplings in final states with  $\ell\nu qq$  or  $\ell\ell qq$  plus jets using proton-proton collisions at  $\sqrt{s} = 13$  TeV, (2025). <http://arxiv.org/abs/2510.00118>, arXiv:2510.00118 [hep-ex]
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- 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]
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- V. Chekhovsky et al., Search for light pseudoscalar boson pairs produced from Higgs boson decays using the 4  $\tau$  and 2  $\tau$  final states in proton-proton collisions at  $\sqrt{s} = 13$  TeV, (2025). <http://arxiv.org/abs/2508.06947>, arXiv:2508.06947 [hep-ex]
- A. Hayrapetyan et al., Search for a new scalar resonance decaying to a Higgs boson and another new scalar particle in the final state with two bottom quarks and two photons in proton-proton collisions at  $\sqrt{s} = 13$  TeV, (2025). <http://arxiv.org/abs/2508.11494>, arXiv:2508.11494 [hep-ex]
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- 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 heavy pseudoscalar and scalar bosons decaying to a top quark pair in proton-proton collisions at  $\sqrt{s} = 13$  TeV, (2025). <http://arxiv.org/abs/2507.05119>, arXiv:2507.05119 [hep-ex]
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- A. Hayrapetyan et al., Machine learning method for enforcing variable independence in background estimation with LHC data: ABCDisCoTEC, (2025). <http://arxiv.org/abs/2506.08826>, arXiv:2506.08826 [hep-ex]

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