

# Publication List from all Collaborations and Experiments

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- A. Hayrapetyan et al., **Angular analysis of the  $B^0 \rightarrow K^{*}(892)^0 \mu^+ \mu^-$  decay in proton-proton collisions at  $\sqrt{s} = 13$  TeV**, (2024). <http://arxiv.org/abs/2411.11820>, arXiv:2411.11820 [hep-ex]
- A. Hayrapetyan et al., **Search for rare decays of the Z and Higgs bosons to a  $J/\psi$  or  $\psi(2S)$  meson and a photon in proton-proton collisions at  $\sqrt{s} = 13$  TeV**, (2024). <http://arxiv.org/abs/2411.15000>, arXiv:2411.15000 [hep-ex]
- A. Hayrapetyan et al., **Reweighting simulated events using machine-learning techniques in the CMS experiment**, (2024). <http://arxiv.org/abs/2411.03023>, arXiv:2411.03023 [hep-ex]
- V. Chekhovsky et al., **Constraints on standard model effective field theory for a Higgs boson produced in association with W or Z bosons in the  $H \rightarrow b\bar{b}$  decay channel in proton-proton collisions at  $\sqrt{s} = 13$  TeV**, (2024). <http://arxiv.org/abs/2411.16907>, arXiv:2411.16907 [hep-ex]
- A. Hayrapetyan et al., **Search for a heavy resonance decaying into a Z and a Higgs boson in events with an energetic jet and two electrons, two muons, or missing transverse momentum in proton-proton collisions at  $\sqrt{s} = 13$  TeV**, (2024). <http://arxiv.org/abs/2411.00202>, arXiv:2411.00202 [hep-ex]
- A. Hayrapetyan et al., **Study of same-sign W boson scattering and anomalous couplings in events with one tau lepton from pp collisions at  $\sqrt{s} = 13$  TeV**, (2024). <http://arxiv.org/abs/2410.04210>, arXiv:2410.04210 [hep-ex]
- A. Hayrapetyan et al., **Measurements of inclusive and differential cross sections for top quark production in association with a Z boson in proton-proton collisions at  $\sqrt{s} = 13$  TeV**, (2024). <http://arxiv.org/abs/2410.23475>, arXiv:2410.23475 [hep-ex]
- A. Hayrapetyan et al., **Search for heavy long-lived charged particles with large ionization energy loss in proton-proton collisions at  $\sqrt{s} = 13$  TeV**, (2024). <http://arxiv.org/abs/2410.09164>, arXiv:2410.09164 [hep-ex]
- A. Tumasyan et al., **Correlations between azimuthal anisotropy and mean transverse momentum in pp, pPb, and peripheral PbPb collisions**, (2024). <http://arxiv.org/abs/2410.04578>, arXiv:2410.04578 [nucl-ex]
- A. Hayrapetyan et al., **Search for excited tau leptons in the  $\tau\tau\gamma$  final state in proton-proton collisions at  $\sqrt{s} = 13$  TeV**, (2024). <http://arxiv.org/abs/2410.21137>, arXiv:2410.21137 [hep-ex]
- A. Hayrapetyan et al., **Search for pair production of heavy particles decaying to a top quark and a gluon in the lepton+jets final state in proton-proton collisions at  $\sqrt{s} = 13$  TeV**, (2024). <http://arxiv.org/abs/2410.20601>, arXiv:2410.20601 [hep-ex]
- A. Hayrapetyan et al., **Measurement of the Higgs boson mass and width using the four-lepton final state in proton-proton collisions at  $\sqrt{s} = 13$  TeV**, (2024). <http://arxiv.org/abs/2409.13663>, arXiv:2409.13663 [hep-ex]
- A. Hayrapetyan et al., **Energy-scaling behavior of intrinsic transverse momentum parameters in Drell-Yan simulation**, (2024). <http://arxiv.org/abs/2409.17770>, arXiv:2409.17770 [hep-ph]
- A. Hayrapetyan et al., **Measurement of inclusive and differential cross sections of single top quark production in association with a W boson in proton-proton collisions at  $\sqrt{s} = 13.6$  TeV**, (2024). <http://arxiv.org/abs/2409.06444>, arXiv:2409.06444 [hep-ex]
- A. Hayrapetyan et al., **Bottom quark energy loss and hadronization with  $B^+$  and  $B_s^0$  nuclear modification factors using pp and \PbPb collisions at  $\sqrt{s_{NN}} = 5.02$  TeV**, (2024). <http://arxiv.org/abs/2409.07258>, arXiv:2409.07258 [nucl-ex]
- A. Hayrapetyan et al., **Search for light long-lived particles decaying to displaced jets in proton-proton collisions at  $\sqrt{s} = 13.6$  TeV**, (2024). <http://arxiv.org/abs/2409.10806>, arXiv:2409.10806 [hep-ex]

- A. Hayrapetyan et al., **Pseudorapidity distributions of charged hadrons in lead-lead collisions at  $\sqrt{s_{NN}} = 5.36$  TeV**, (2024). <http://arxiv.org/abs/2409.00838>, arXiv:2409.00838 [hep-ex]
- A. Hayrapetyan et al., **Measurements of polarization and spin correlation and observation of entanglement in top quark pairs using lepton+jets events from proton-proton collisions at  $\sqrt{s} = 13$  TeV**, (2024). <http://arxiv.org/abs/2409.11067>, arXiv:2409.11067 [hep-ex]
- A. Hayrapetyan et al., **Search for bottom quark associated production of the standard model Higgs boson in final states with leptons in proton-proton collisions at  $\sqrt{s} = 13$  TeV**, (2024). <http://arxiv.org/abs/2408.01344>, arXiv:2408.01344 [hep-ex]
- A. Hayrapetyan et al., **Measurement of the inclusive cross sections for W and Z boson production in proton-proton collisions at  $\sqrt{s} = 5.02$  and 13 TeV**, (2024). <http://arxiv.org/abs/2408.03744>, arXiv:2408.03744 [hep-ex]
- A. Hayrapetyan et al., **Measurement of the Drell–Yan forward-backward asymmetry and of the effective leptonic weak mixing angle in proton-proton collisions at  $\sqrt{s} = 13$  TeV**, (2024). <http://arxiv.org/abs/2408.07622>, arXiv:2408.07622 [hep-ex]
- A. Hayrapetyan et al., **Search for dark matter produced in association with a pair of bottom quarks in proton-proton collisions at  $\sqrt{s} = 13$  TeV**, (2024). <http://arxiv.org/abs/2408.17336>, arXiv:2408.17336 [hep-ex]
- A. Hayrapetyan et al., **Test of lepton flavor universality in semileptonic  $B_c^+$  meson decays in proton-proton collisions at  $\sqrt{s} = 13$  TeV**, (2024). <http://arxiv.org/abs/2408.00678>, arXiv:2408.00678 [hep-ex]
- A. Hayrapetyan et al., **Constraints on the Higgs boson self-coupling from the combination of single and double Higgs boson production in proton-proton collisions at  $\sqrt{s} = 13$  TeV**, (2024). <http://arxiv.org/abs/2407.13554>, arXiv:2407.13554 [hep-ex]
- A. Hayrapetyan et al., **Measurement of boosted Higgs bosons produced via vector boson fusion or gluon fusion in the  $H \rightarrow b\bar{b}$  decay mode using LHC proton-proton collision data at  $\sqrt{s} = 13$  TeV**, (2024). <http://arxiv.org/abs/2407.08012>, arXiv:2407.08012 [hep-ex]
- A. Hayrapetyan et al., **Measurement of the  $t\bar{t}H$  and  $tH$  production rates in the  $H \rightarrow b\bar{b}$  decay channel using proton-proton collision data at  $\sqrt{s} = 13$  TeV**, (2024). <http://arxiv.org/abs/2407.10896>, arXiv:2407.10896 [hep-ex]
- A. Hayrapetyan et al., **Search for long-lived heavy neutral leptons in proton-proton collision events with a lepton-jet pair associated with a secondary vertex at  $\sqrt{s} = 13$  TeV**, (2024). <http://arxiv.org/abs/2407.10717>, arXiv:2407.10717 [hep-ex]
- A. Hayrapetyan et al., **Model-independent search for pair production of new bosons decaying into muons in proton-proton collisions at  $\sqrt{s} = 13$  TeV**, (2024). <http://arxiv.org/abs/2407.20425>, arXiv:2407.20425 [hep-ex]
- A. Hayrapetyan et al., **Search for nuclear modifications of  $B^+$  meson production in pPb collisions at  $\sqrt{s_{NN}} = 8.16$  TeV**, (2024). <http://arxiv.org/abs/2407.05402>, arXiv:2407.05402 [nucl-ex]
- A. Tumasyan et al., **Search for resonant pair production of Higgs bosons in the  $b\bar{b}b\bar{b}$  final state using large-area jets in proton-proton collisions at  $\sqrt{s} = 13$  TeV**, (2024). <http://arxiv.org/abs/2407.13872>, arXiv:2407.13872 [hep-ex]
- A. Hayrapetyan et al., **Multiplicity dependence of charm baryon and baryon meson production in pPb collisions at  $\sqrt{s_{NN}} = 8.16$  TeV**, (2024). <http://arxiv.org/abs/2407.13615>, arXiv:2407.13615 [nucl-ex]
- A. Hayrapetyan et al., **Search for flavor-changing neutral current interactions of the top quark mediated by a Higgs boson in proton-proton collisions at 13 TeV**, (2024). <http://arxiv.org/abs/2407.15172>, arXiv:2407.15172 [hep-ex]
- A. Hayrapetyan et al., **Measurement of inclusive and differential cross sections for  $W^+W^-$  production in proton-proton collisions at  $\sqrt{s} = 13.6$  TeV**, (2024). <http://arxiv.org/abs/2406.05101>, arXiv:2406.05101 [hep-ex]
- A. Hayrapetyan et al., **Review of searches for vector-like quarks, vector-like leptons, and heavy neutral leptons in proton-proton collisions at  $\sqrt{s} = 13$  TeV at the CMS experiment**, (2024). <http://arxiv.org/abs/2405.17605>, arXiv:2405.17605 [hep-ex]
- A. Hayrapetyan et al., **Stairway to discovery: a report on the CMS programme of cross section measurements from millibarns to femtobarns**, (2024). <http://arxiv.org/abs/2405.18661>, arXiv:2405.18661 [hep-ex]
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- A. Hayrapetyan et al., **Overview of high-density QCD studies with the CMS experiment at the LHC**, (2024). <http://arxiv.org/abs/2405.10785>, arXiv:2405.10785 [nucl-ex]
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- A. Hayrapetyan et al., **Search for new resonances decaying to pairs of merged diphotons in proton-proton collisions at  $\sqrt{s} = 13$  TeV**, (2024). <http://arxiv.org/abs/2405.00834>, arXiv:2405.00834 [hep-ex]
- A. Hayrapetyan et al., **Search for a standard model-like Higgs boson in the mass range between 70 and 110 GeV in the diphoton final state in proton-proton collisions at  $\sqrt{s} = 13$  TeV**, (2024). <http://arxiv.org/abs/2405.18149>, arXiv:2405.18149 [hep-ex]
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