

Publication List from all Collaborations and Experiments

Oliver Gutsche

March 1, 2025

- V. Chekhovsky et al., **Development of systematic uncertainty-aware neural network trainings for binned-likelihood analyses at the LHC**, (2025). <http://arxiv.org/abs/2502.13047>, arXiv:2502.13047 [hep-ex]
- V. Chekhovsky et al., **Search for medium effects using jet axis decorrelation in inclusive jets from PbPb collisions at $\sqrt{s_{NN}} = 5.02$ TeV**, (2025). <http://arxiv.org/abs/2502.13020>, arXiv:2502.13020 [nucl-ex]
- V. Chekhovsky et al., **Search for bosons of an extended Higgs sector in b quark final states in proton-proton collisions at $\sqrt{s} = 13$ TeV**, (2025). <http://arxiv.org/abs/2502.06568>, arXiv:2502.06568 [hep-ex]
- V. Chekhovsky et al., **Evidence for similar collectivity of high transverse momentum particles in pPb and PbPb collisions**, (2025). <http://arxiv.org/abs/2502.07525>, arXiv:2502.07525 [nucl-ex]
- A. Hayrapetyan et al., **Observation of Λ hyperon local polarization in pPb collisions at $\sqrt{s_{NN}} = 8.16$ TeV**, (2025). <http://arxiv.org/abs/2502.07898>, arXiv:2502.07898 [nucl-ex]
- V. Chekhovsky et al., **Search for γ H production and constraints on the Yukawa couplings of light quarks to the Higgs boson**, (2025). <http://arxiv.org/abs/2502.05665>, arXiv:2502.05665 [hep-ex]
- V. Chekhovsky et al., **Search for a heavy pseudoscalar Higgs boson decaying to a 125 GeV Higgs boson and a Z boson in final states with two tau and two light leptons in proton-proton collisions at $\sqrt{s} = 13$ TeV**, (2025). <http://arxiv.org/abs/2501.14825>, arXiv:2501.14825 [hep-ex]
- V. Chekhovsky et al., **Measurements of Higgs boson production cross section in the four-lepton final state in proton-proton collisions at $\sqrt{s} = 13.6$ TeV**, (2025). <http://arxiv.org/abs/2501.14849>, arXiv:2501.14849 [hep-ex]
- A. Hayrapetyan et al., **Measurement of light-by-light scattering and the Breit-Wheeler process, and search for axion-like particles in ultraperipheral PbPb collisions at $\sqrt{s_{NN}} = 5.02$ TeV**, (2024). <http://arxiv.org/abs/2412.15413>, arXiv:2412.15413 [nucl-ex]
- A. Hayrapetyan et al., **Measurement of the inclusive WZ production cross section in pp collisions at $\sqrt{s} = 13.6$ TeV**, (2024). <http://arxiv.org/abs/2412.02477>, arXiv:2412.02477 [hep-ex]
- V. Chekhovsky et al., **High-precision measurement of the W boson mass with the CMS experiment at the LHC**, (2024). <http://arxiv.org/abs/2412.13872>, arXiv:2412.13872 [hep-ex]
- A. Hayrapetyan et al., **Search for heavy neutral resonances decaying to tau lepton pairs in proton-proton collisions at $\sqrt{s} = 13$ TeV**, (2024). <http://arxiv.org/abs/2412.04357>, arXiv:2412.04357 [hep-ex]
- V. Chekhovsky et al., **Model-agnostic search for dijet resonances with anomalous jet substructure in proton-proton collisions at $\sqrt{s} = 13$ TeV**, (2024). <http://arxiv.org/abs/2412.03747>, arXiv:2412.03747 [hep-ex]
- V. Chekhovsky et al., **Identification of low-momentum muons in the CMS detector using multivariate techniques in proton-proton collisions at $\sqrt{s} = 13.6$ TeV**, (2024). <http://arxiv.org/abs/2412.17590>, arXiv:2412.17590 [hep-ex]
- V. Chekhovsky et al., **Determination of the strong coupling and its running from measurements of inclusive jet production**, (2024). <http://arxiv.org/abs/2412.16665>, arXiv:2412.16665 [hep-ex]
- A. Hayrapetyan et al., **Measurement of the W boson decay branching fraction ratio $\mathcal{B}(W \rightarrow cq)/\mathcal{B}(W \rightarrow q\bar{q}')$ in proton-proton collisions at $\sqrt{s} = 13$ TeV**, (2024). <http://arxiv.org/abs/2412.16296>, arXiv:2412.16296 [hep-ex]
- A. Hayrapetyan et al., **Search for a neutral gauge boson with nonuniversal fermion couplings in vector boson fusion processes in proton-proton collisions at $\sqrt{s} = 13$ TeV**, (2024). <http://arxiv.org/abs/2412.19261>, arXiv:2412.19261 [hep-ex]

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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/ψ 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]
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- A. Hayrapetyan et al., **Proton reconstruction with the TOTEM Roman pot detectors for high- β^* LHC data**, (2024). <http://arxiv.org/abs/2411.19749>, arXiv:2411.19749 [hep-ex]
- A. Hayrapetyan et al., **Search for heavy neutral Higgs bosons A and H in the $t\bar{t}Z$ channel in proton-proton collisions at 13 TeV**, (2024). <http://arxiv.org/abs/2412.00570>, arXiv:2412.00570 [hep-ex]
- A. Hayrapetyan et al., **Search for high-mass resonances in a final state comprising a gluon and two hadronically decaying W bosons in proton-proton collisions at $\sqrt{s} = 13$ TeV**, (2024). <http://arxiv.org/abs/2410.17303>, arXiv:2410.17303 [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., **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]
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- A. Hayrapetyan et al., **Bottom quark energy loss and hadronization with B^+ and B_s^0 nuclear modification factors using pp and $\sqrt{s_{NN}} = 5.02$ TeV PbPb collisions**, (2024). <http://arxiv.org/abs/2409.07258>, arXiv:2409.07258 [nucl-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]
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- 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]

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- 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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- G.L. Bayatian et al., **CMS expression of interest in the SLHC**, (2007)
- A. Hayrapetyan et al., **Measurement of multidifferential cross sections for dijet production in protonproton collisions at $\sqrt{s} = 13\text{TeV}$** , *Eur. Phys. J. C.* 85 (2025) 72, doi:10.1140/epjc/s10052-024-13606-8, arXiv:2312.16669 [hep-ex]
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- 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**, *JHEP.* 02 (2025) 089, doi:10.1007/JHEP02(2025)089, arXiv:2411.00202 [hep-ex]
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