



Spoke 2 – Fundamental Research & Space Economy Publication list

[1]

A. Virtuoso and E. Milotti, “Wavelet-based tools to analyze, filter, and reconstruct transient gravitational-wave signals,” *Phys. Rev. D*, vol. 109, no. 10, p. 102010, May 2024, doi: [10.1103/PhysRevD.109.102010](https://doi.org/10.1103/PhysRevD.109.102010).

[2]

G. Degrassi, R. Gröber, and M. Vitti, “Virtual QCD corrections to $gg \rightarrow ZZ$: top-quark loops from a transverse-momentum expansion,” *J. High Energ. Phys.*, vol. 2024, no. 7, p. 244, Jul. 2024, doi: [10.1007/JHEP07\(2024\)244](https://doi.org/10.1007/JHEP07(2024)244).

[3]

M. Frittelli, A. Madzvamuse, and I. Sgura, “Virtual element method for elliptic bulk-surface PDEs in three space dimensions,” *Numerical Methods Partial*, vol. 39, no. 6, pp. 4221–4247, Nov. 2023, doi: [10.1002/num.23040](https://doi.org/10.1002/num.23040).

[4]

G. Aad *et al.*, “Using pile-up collisions as an abundant source of low-energy hadronic physics processes in ATLAS and an extraction of the jet energy resolution,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2904445>

[5]

M. Baker, V. Chelnokov, L. Cosmai, F. Cuteri, and A. Papa, “Unveiling SU(3) flux tubes at nonzero temperature: electric fields and magnetic currents,” *Eur. Phys. J. C*, vol. 84, no. 2, p. 150, Feb. 2024, doi: [10.1140/epjc/s10052-024-12472-8](https://doi.org/10.1140/epjc/s10052-024-12472-8).

[6]

G. Aad *et al.*, “Underlying-event studies with strange hadrons in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2897170>

[7]

F. Calore *et al.*, “Uncovering axionlike particles in supernova gamma-ray spectra,” *Phys. Rev. D*, vol. 109, no. 4, p. 043010, Feb. 2024, doi: [10.1103/PhysRevD.109.043010](https://doi.org/10.1103/PhysRevD.109.043010).

[8]

L. Borella *et al.*, “Ultra-low latency quantum-inspired machine learning predictors implemented on FPGA,” 2024, *arXiv*. doi: [10.48550/ARXIV.2409.16075](https://doi.org/10.48550/ARXIV.2409.16075).

[9]

G. Grosso *et al.*, “Triggerless data acquisition pipeline for Machine Learning based statistical anomaly detection,” *EPJ Web of Conf.*, vol. 295, p. 02033, 2024, doi: [10.1051/epjconf/202429502033](https://doi.org/10.1051/epjconf/202429502033).



[10]

R. Aaij *et al.*, “Transverse polarization measurement of Λ hyperons in pNe collisions at $\sqrt{s_{NN}} = 68.4$ GeV with the LHCb detector. Transverse polarisation measurement of Λ hyperons in pNe collisions at $\sqrt{s_{NN}} = 68.4$ GeV with the LHCb detector,” *JHEP*, vol. 2409, p. 082, 2024, doi: [10.1007/JHEP09\(2024\)082](https://doi.org/10.1007/JHEP09(2024)082).

[11]

A. Spolon, M. Fiori, L. Zampieri, and M. Landoni, “Towards Image Synthesis with Photon Counting Stellar Intensity Interferometry,” 2024, *arXiv*. doi: [10.48550/ARXIV.2404.18507](https://doi.org/10.48550/ARXIV.2404.18507).

[12]

L. Carracciuolo, V. Mele, and G. Sabella, “Toward a new linpack-like benchmark for heterogeneous computing resources,” *Concurrency and Computation*, vol. 36, no. 10, p. e7962, May 2024, doi: [10.1002/cpe.7962](https://doi.org/10.1002/cpe.7962).

[13]

G. Aad *et al.*, “Total cost of ownership and evaluation of Google cloud resources for the ATLAS experiment at the LHC,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2898649>

[14]

C. Corianò, M. Creti, S. Lionetti, and M. M. Maglio, “Three-wave and four-wave interactions in the 4d Einstein Gauss-Bonnet (EGB) and Lovelock theories,” *Nuclear Physics B*, vol. 998, p. 116420, Jan. 2024, doi: [10.1016/j.nuclphysb.2023.116420](https://doi.org/10.1016/j.nuclphysb.2023.116420).

[15]

M. Bruno, N. Forzano, M. Panero, and A. Smecca, “Thermal evolution of dark matter in the early universe from a symplectic glueball model,” 2024, *arXiv*. doi: [10.48550/ARXIV.2410.17122](https://doi.org/10.48550/ARXIV.2410.17122).

[16]

C. Corianò and D. Melle, “The $SU(3)_C \times SU(3)_L \times U(1)_X$ (331) Model: Addressing the Fermion Families Problem within Horizontal Anomalies Cancellation,” *Entropy*, vol. 26, no. 5, p. 420, May 2024, doi: [10.3390/e26050420](https://doi.org/10.3390/e26050420).

[17]

G. Aad *et al.*, “The quest to discover supersymmetry at the ATLAS experiment,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2890693>

[18]

F. Semenzato, D. Bertacca, and A. Raccanelli, “The full-sky Spherical Fourier-Bessel power spectrum in general relativity,” 2024, *arXiv*. doi: [10.48550/ARXIV.2406.09545](https://doi.org/10.48550/ARXIV.2406.09545).

[19]

M. F. Massimo Frittelli, A. M. Anotida Madzvamuse, and I. S. Ivonne Sgura, “The Bulk-Surface Virtual Element Method for Reaction-Diffusion PDEs: Analysis and Applications,” *CICP*, vol. 33, no. 3, pp. 733–763, Jan. 2023, doi: [10.4208/cicp.OA-2022-0204](https://doi.org/10.4208/cicp.OA-2022-0204).



[20]

G. Aad *et al.*, “The ATLAS Trigger System for LHC Run 3 and Trigger performance in 2022,” *JINST*, vol. 19, p. P06029, 2024, doi: [10.1088/1748-0221/19/06/P06029](https://doi.org/10.1088/1748-0221/19/06/P06029).

[21]

A. Abdul Halim *et al.*, “Testing hadronic-model predictions of depth of maximum of air-shower profiles and ground-particle signals using hybrid data of the Pierre Auger Observatory,” *Phys. Rev. D*, vol. 109, no. 10, p. 102001, May 2024, doi: [10.1103/PhysRevD.109.102001](https://doi.org/10.1103/PhysRevD.109.102001).

[22]

R. Aaij *et al.*, “Test of lepton universality with $B_s^0 \rightarrow \phi \ell^+ \ell^-$ decays,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2914050>

[23]

A. Hayrapetyan *et al.*, “Test of lepton flavor universality in $B^{\pm} \rightarrow K^{\pm} \mu^+ \mu^-$ and $B^{\pm} \rightarrow K^{\pm} e^+ e^-$ decays in proton-proton collisions at $\sqrt{s} = 13$ TeV. Test of lepton flavor universality in and decays in proton-proton collisions at,” *Rep. Prog. Phys.*, vol. 87, p. 077802, 2024, doi: [10.1088/1361-6633/ad4e65](https://doi.org/10.1088/1361-6633/ad4e65).

[24]

G. Aad *et al.*, “Test of CP-invariance of the Higgs boson in vector-boson fusion production and in its decay into four leptons. Test of CP-invariance of the Higgs boson in vector-boson fusion production and its decay into four leptons,” *JHEP*, vol. 2405, p. 105, 2024, doi: [10.1007/JHEP05\(2024\)105](https://doi.org/10.1007/JHEP05(2024)105).

[25]

G. Fabiani *et al.*, “Task-oriented machine learning surrogates for tipping points of agent-based models,” *Nat Commun*, vol. 15, no. 1, p. 4117, May 2024, doi: [10.1038/s41467-024-48024-7](https://doi.org/10.1038/s41467-024-48024-7).

[26]

S. Acharya *et al.*, “Systematic study of flow vector fluctuations in $\sqrt{s_{NN}} = 5.02$ TeV Pb-Pb collisions. Systematic study of flow vector decorrelation in $\sqrt{s_{NN}} = 5.02$ TeV Pb-Pb collisions,” *Phys. Rev. C*, vol. 109, no. 6, p. 065202, 2024, doi: [10.1103/PhysRevC.109.065202](https://doi.org/10.1103/PhysRevC.109.065202).

[27]

C. Brown, J. Fiaschi, O. Fischer, and T. Teubner, “Systematic analysis of search strategies for $L\mu - L\tau$ gauge bosons at Belle II,” *J. High Energ. Phys.*, vol. 2024, no. 10, p. 233, Oct. 2024, doi: [10.1007/JHEP10\(2024\)233](https://doi.org/10.1007/JHEP10(2024)233).

[28]

G. Raman *et al.*, “Swift-BAT GUANO follow-up of gravitational-wave triggers in the third LIGO-Virgo-KAGRA observing run,” Jul. 13, 2024, *arXiv*: arXiv:2407.12867. Accessed: Nov. 12, 2024. [Online]. Available: <http://arxiv.org/abs/2407.12867>



[29]

S. Acharya *et al.*, “Studying the interaction between charm and light-flavor mesons,” *Phys. Rev. D*, vol. 110, no. 3, p. 032004, 2024, doi: [10.1103/PhysRevD.110.032004](https://doi.org/10.1103/PhysRevD.110.032004).

[30]

S. Acharya *et al.*, “Studying strangeness and baryon production mechanisms through angular correlations between charged Ξ baryons and identified hadrons in pp collisions at $\sqrt{s} = 13$ TeV,” *JHEP*, vol. 2409, p. 102, 2024, doi: [10.1007/JHEP09\(2024\)102](https://doi.org/10.1007/JHEP09(2024)102).

[31]

A. Hayrapetyan *et al.*, “Study of WH production through vector boson scattering and extraction of the relative sign of the W and Z couplings to the Higgs boson in proton-proton collisions at $\sqrt{s} = 13$ TeV,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2898635>

[32]

R. Aaij *et al.*, “Study of the rare decay $J/\psi \rightarrow 3\mu + 2\mu + \psi \rightarrow \mu^+ \mu^- \mu^+ \mu^-$,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2908392>

[33]

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,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2912481>

[34]

R. Aaij *et al.*, “Study of $D_s 1^+(2460) \rightarrow D_s^+ \pi^+ \pi^-$ in $B \rightarrow \overline{D}^{(*)} D_s^+ \pi^+ \pi^-$ decays,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2916463>

[35]

R. Aaij *et al.*, “Study of CP violation in $B^0(s) \rightarrow D K^{*(892)^0}$ decays with $D \rightarrow K \pi (\pi \pi)$, $\pi \pi (\pi \pi)$, and KK final states,” *JHEP*, vol. 2405, p. 025, 2024, doi: [10.1007/JHEP05\(2024\)025](https://doi.org/10.1007/JHEP05(2024)025).

[36]

R. Aaij *et al.*, “Study of charmonium production via the decay to $p \bar{p}$ at $\sqrt{s} = 13$ TeV,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2905173>

[37]

R. Aaij *et al.*, “Study of b-hadron decays to $\Lambda_c^+ h^- h'^-$ final states,” *JHEP*, vol. 2408, p. 132, 2024, doi: [10.1007/JHEP08\(2024\)132](https://doi.org/10.1007/JHEP08(2024)132).

[38]

G. Aad *et al.*, “Studies of the Energy Dependence of Diboson Polarization Fractions and the Radiation-Amplitude-Zero Effect in WZ Production with the ATLAS Detector. Studies of the energy dependence of diboson polarization fractions and the Radiation Amplitude Zero effect in WZ production with the ATLAS detector,” *Phys. Rev. Lett.*, vol. 133, no. 10, p. 101802, 2024, doi: [10.1103/PhysRevLett.133.101802](https://doi.org/10.1103/PhysRevLett.133.101802).



[39]

A. Hayrapetyan *et al.*, “Stairway to discovery: a report on the CMS programme of cross section measurements from millibarns to femtobarns,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2898867>

[40]

G. Fumagalli and D. Gerosa, “Spin-eccentricity interplay in merging binary black holes,” *Phys. Rev. D*, vol. 108, no. 12, p. 124055, Dec. 2023, doi: [10.1103/PhysRevD.108.124055](https://doi.org/10.1103/PhysRevD.108.124055).

[41]

R. Frezzotti, N. Tantalo, G. Gagliardi, F. Sanfilippo, S. Simula, and V. Lubicz, “Spectral-function determination of complex electroweak amplitudes with lattice QCD,” *Phys. Rev. D*, vol. 108, no. 7, p. 074510, Oct. 2023, doi: [10.1103/PhysRevD.108.074510](https://doi.org/10.1103/PhysRevD.108.074510).

[42]

M. Bruno, L. Giusti, and M. Saccardi, “Spectral densities from Euclidean lattice correlators via the Mellin transform,” 2024, *arXiv*. doi: [10.48550/ARXIV.2407.04141](https://doi.org/10.48550/ARXIV.2407.04141).

[43]

G. Aad *et al.*, “Software and computing for Run 3 of the ATLAS experiment at the LHC,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2895022>

[44]

D. Patsatzis, G. Fabiani, L. Russo, and C. Siettos, “Slow Invariant Manifolds of Singularly Perturbed Systems via Physics-Informed Machine Learning,” *SIAM J. Sci. Comput.*, vol. 46, no. 4, pp. C297–C322, Aug. 2024, doi: [10.1137/23M1602991](https://doi.org/10.1137/23M1602991).

[45]

G. Aad *et al.*, “Simultaneous energy and mass calibration of large-radius jets with the ATLAS detector using a deep neural network,” *Mach. Learn. Sci. Tech.*, vol. 5, no. 3, p. 035051, 2024, doi: [10.1088/2632-2153/ad611e](https://doi.org/10.1088/2632-2153/ad611e).

[46]

G. Lucente, M. Heinlein, H.-T. Janka, and A. Mirizzi, “Simple fits for the neutrino luminosities from protoneutron star cooling,” *Phys. Rev. D*, vol. 110, no. 6, p. 063023, Sep. 2024, doi: [10.1103/PhysRevD.110.063023](https://doi.org/10.1103/PhysRevD.110.063023).

[47]

G. Lucente, M. Heinlein, H.-T. Janka, and A. Mirizzi, “Simple fits for the neutrino luminosities from protoneutron star cooling,” 2024, doi: [10.48550/ARXIV.2405.00769](https://doi.org/10.48550/ARXIV.2405.00769).

[48]

G. Aad *et al.*, “Sensor response and radiation damage effects for 3D pixels in the ATLAS IBL Detector,” *JINST*, vol. 19, no. 10, p. P10008, 2024, doi: [10.1088/1748-0221/19/10/P10008](https://doi.org/10.1088/1748-0221/19/10/P10008).

[49]

A. Hayrapetyan *et al.*, “Searches for violation of Lorentz invariance in top quark pair production using dilepton events in 13 TeV proton-proton collisions. Searches for violation of Lorentz



invariance in $\overline{\text{production}}$ using dilepton events in proton-proton collisions at $\sqrt{s} = 13 \text{ TeV}$,” *Phys. Lett. B*, vol. 857, p. 138979, 2024, doi: [10.1016/j.physletb.2024.138979](https://doi.org/10.1016/j.physletb.2024.138979).

[50]

G. Aad *et al.*, “Searches for exclusive Higgs boson decays into $D^* \gamma$ and Z boson decays into $D^0 \gamma$ and $K^0_s \gamma$ in pp collisions at $\sqrt{s} = 13 \text{ TeV}$ with the ATLAS detector,” *Phys. Lett. B*, vol. 855, p. 138762, 2024, doi: [10.1016/j.physletb.2024.138762](https://doi.org/10.1016/j.physletb.2024.138762).

[51]

A. Hayrapetyan *et al.*, “Search for ZZ and ZH production in the $\bar{b} b$ final state using proton-proton collisions at $\sqrt{s} = 13 \text{ TeV}$,” *Eur. Phys. J. C*, vol. 84, no. 7, p. 712, 2024, doi: [10.1140/epjc/s10052-024-13021-z](https://doi.org/10.1140/epjc/s10052-024-13021-z).

[52]

A. Hayrapetyan *et al.*, “Search for W' bosons decaying to a top and a bottom quark in leptonic final states in proton-proton collisions at $\sqrt{s} = 13 \text{ TeV}$,” *JHEP*, vol. 2405, p. 046, 2024, doi: [10.1007/JHEP05\(2024\)046](https://doi.org/10.1007/JHEP05(2024)046).

[53]

R. Aaij *et al.*, “Search for Time-Dependent CP Violation in $D^0 \rightarrow \pi^+ \pi^- \pi^0$ Decays. Search for time-dependent CP violation in $D^0 \rightarrow \pi^+ \pi^- \pi^0$ decays,” *Phys. Rev. Lett.*, vol. 133, no. 10, p. 101803, 2024, doi: [10.1103/PhysRevLett.133.101803](https://doi.org/10.1103/PhysRevLett.133.101803).

[54]

R. Aaij *et al.*, “Search for the rare decay of charmed baryon $\Lambda^+ c$ into the $p \mu^+ \mu^-$ final state”. *Phys. Rev. D*, vol. 110, no. 5, p. 052007, 2024, doi: [10.1103/PhysRevD.110.052007](https://doi.org/10.1103/PhysRevD.110.052007).

[55]

G. Aad *et al.*, “Search for the non-resonant production of Higgs boson pairs via gluon fusion and vector-boson fusion in the $b \bar{b} \tau^+ \tau^-$ final state in proton-proton collisions at $\sqrt{s} = 13 \text{ TeV}$ with the ATLAS detector,” *Phys. Rev. D*, vol. 110, no. 3, p. 032012, 2024, doi: [10.1103/PhysRevD.110.032012](https://doi.org/10.1103/PhysRevD.110.032012).

[56]

R. Aaij *et al.*, “Search for the lepton-flavor violating decay $B_s^0 \rightarrow \phi \mu^+ \mu^- \tau^+ \tau^-$,” *Phys. Rev. D*, vol. 110, no. 7, p. 072014, 2024, doi: [10.1103/PhysRevD.110.072014](https://doi.org/10.1103/PhysRevD.110.072014).

[57]

G. Aad *et al.*, “Search for the jet-induced diffusion wake in the quark-gluon plasma via measurements of jet-track correlations in photon-jet events in Pb+Pb collisions at $\sqrt{s_{NN}} = 5.02 \text{ TeV}$ with the ATLAS detector,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2907403>

[58]

A. Hayrapetyan *et al.*, “Search for the Higgs boson decays to a ρ^0 , ϕ , or K^0 meson and a photon in proton-proton collisions at $\sqrt{s} = 13 \text{ TeV}$,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2914905>



[59]

G. Aad *et al.*, “Search for the exclusive W boson hadronic decays $W^{\pm} \rightarrow \pi^{\pm} \gamma$, $W^{\pm} \rightarrow K^{\pm} \gamma$ and $W^{\pm} \rightarrow \rho^{\pm} \gamma$ with the ATLAS detector,” *Phys. Rev. Lett.*, vol. 133, no. 16, p. 161804, 2024, doi: [10.1103/PhysRevLett.133.161804](https://doi.org/10.1103/PhysRevLett.133.161804).

[60]

A. Hayrapetyan *et al.*, “Search for the decay of the Higgs boson to a pair of light pseudoscalar bosons in the final state with four bottom quarks in proton-proton collisions at $\sqrt{s} = 13$ TeV,” *JHEP*, vol. 2406, p. 097, 2024, doi: [10.1007/JHEP06\(2024\)097](https://doi.org/10.1007/JHEP06(2024)097).

[61]

S. Acharya *et al.*, “Search for the Chiral Magnetic Effect with charge-dependent azimuthal correlations in Xe–Xe collisions at $\sqrt{s_{NN}} = 5.44$ TeV,” *Physics Letters B*, vol. 856, p. 138862, Sep. 2024, doi: [10.1016/j.physletb.2024.138862](https://doi.org/10.1016/j.physletb.2024.138862).

[62]

G. Aad *et al.*, “Search for the associated production of charm quarks and a Higgs boson decaying into a photon pair with the ATLAS detector,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2905185>

[63]

G. Aad *et al.*, “Search for $t\bar{t}H/A \rightarrow t\bar{t}b\bar{b}$ production in proton-proton collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2908434>

[64]

G. Aad *et al.*, “Search for supersymmetry using vector boson fusion signatures and missing transverse momentum in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2911634>

[65]

G. Aad *et al.*, “Search for supersymmetry in final states with missing transverse momentum and charm-tagged jets using 139 fb⁻¹ of proton-proton collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2914848>

[66]

G. Aad *et al.*, “Search for single-production of vector-like quarks decaying into Wb in the fully hadronic final state in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2911755>

[67]

G. Aad *et al.*, “Search for short- and long-lived axion-like particles in $H \rightarrow a a \rightarrow 4\gamma$ decays with the ATLAS experiment at the LHC,” *Eur. Phys. J. C*, vol. 84, p. 742, 2024, doi: [10.1140/epjc/s10052-024-12979-0](https://doi.org/10.1140/epjc/s10052-024-12979-0).



[68]

G. Aad *et al.*, “Search for same-charge top-quark pair production in pp collisions at $\sqrt{s}=13$ TeV with the ATLAS detector,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2911072>

[69]

A. Tumasyan *et al.*, “Search for resonant pair production of Higgs bosons in the $\overline{b}b$ final state using large-area jets in proton-proton collisions at $\sqrt{s}=13$ TeV,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2904908>

[70]

S. Acharya *et al.*, “Search for quasi-particle scattering in the quark-gluon plasma with jet splittings in pp and Pb-Pb collisions at $\sqrt{s_{NN}}=5.02$ TeV,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2909642>

[71]

R. Aaij *et al.*, “Search for prompt production of pentaquarks in charm hadron final states. Search for prompt production of pentaquarks in open charm hadron final states,” *Phys. Rev. D*, vol. 110, no. 3, p. 032001, 2024, doi: [10.1103/PhysRevD.110.032001](https://doi.org/10.1103/PhysRevD.110.032001).

[72]

A. Hayrapetyan *et al.*, “Search for production of a single vector-like quark decaying to tH or tZ in the all-hadronic final state in pp collisions at $\sqrt{s}=13$ TeV,” *Phys. Rev. D*, vol. 110, no. 7, p. 072012, 2024, doi: [10.1103/PhysRevD.110.072012](https://doi.org/10.1103/PhysRevD.110.072012).

[73]

G. Aad *et al.*, “Search for pair-production of vector-like quarks in lepton+jets final states containing at least one b-tagged jet using the Run 2 data from the ATLAS experiment,” *Phys. Lett. B*, vol. 854, p. 138743, 2024, doi: [10.1016/j.physletb.2024.138743](https://doi.org/10.1016/j.physletb.2024.138743).

[74]

G. Aad *et al.*, “Search for pair-produced vector-like quarks coupling to light quarks in the lepton plus jets final state using 13 TeV pp collisions with the ATLAS detector,” *Phys. Rev. D*, vol. 110, no. 5, p. 052009, 2024, doi: [10.1103/PhysRevD.110.052009](https://doi.org/10.1103/PhysRevD.110.052009).

[75]

G. Aad *et al.*, “Search for pair-produced higgsinos decaying via Higgs or Z bosons to final states containing a pair of photons and a pair of b-jets with the ATLAS detector,” *Phys. Lett. B*, vol. 856, p. 138938, 2024, doi: [10.1016/j.physletb.2024.138938](https://doi.org/10.1016/j.physletb.2024.138938).

[76]

A. Hayrapetyan *et al.*, “Search for pair production of scalar and vector leptoquarks decaying to muons and bottom quarks in proton-proton collisions at $\sqrt{s}=13$ TeV,” *Phys. Rev. D*, vol. 109, no. 11, p. 112003, 2024, doi: [10.1103/PhysRevD.109.112003](https://doi.org/10.1103/PhysRevD.109.112003).



[77]

G. Aad *et al.*, “Search for pair production of higgsinos in events with two Higgs bosons and missing transverse momentum in $\sqrt{s}=13$ TeV pp collisions at the ATLAS experiment,” *Phys. Rev. D*, vol. 109, p. 112011, 2024, doi: [10.1103/PhysRevD.109.112011](https://doi.org/10.1103/PhysRevD.109.112011).

[78]

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,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2915297>

[79]

G. Aad *et al.*, “Search for pair production of boosted Higgs bosons via vector-boson fusion in the $b\bar{b}b\bar{b}$ final state using pp collisions at $\sqrt{s}=13$ TeV with the ATLAS detector,” *Phys. Lett. B*, vol. 858, p. 139007, 2024, doi: [10.1016/j.physletb.2024.139007](https://doi.org/10.1016/j.physletb.2024.139007).

[80]

G. Aad *et al.*, “Search for non-resonant Higgs boson pair production in final states with leptons, taus, and photons in pp collisions at $\sqrt{s}=13$ TeV with the ATLAS detector,” *JHEP*, vol. 2408, p. 164, 2024, doi: [10.1007/JHEP08\(2024\)164](https://doi.org/10.1007/JHEP08(2024)164).

[81]

A. Hayrapetyan *et al.*, “Search for new physics in high-mass diphoton events from proton-proton collisions at $\sqrt{s}=13$ TeV,” *JHEP*, vol. 2408, p. 215, 2024, doi: [10.1007/JHEP08\(2024\)215](https://doi.org/10.1007/JHEP08(2024)215).

[82]

G. Aad *et al.*, “Search for new particles in final states with a boosted top quark and missing transverse momentum in proton-proton collisions at $\sqrt{s}=13$ TeV with the ATLAS detector. Search for invisible particles produced in association with single top quarks in proton-proton collisions at $\sqrt{s}=13$ TeV with the ATLAS detector,” *JHEP*, vol. 2405, p. 263, 2024, doi: [10.1007/JHEP05\(2024\)263](https://doi.org/10.1007/JHEP05(2024)263).

[83]

G. Aad *et al.*, “Search for new particles in events with a hadronically decaying W or Z boson and large missing transverse momentum at $\sqrt{s}=13$ TeV using the ATLAS detector,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2899614>

[84]

G. Aad *et al.*, “Search for neutral long-lived particles that decay into displaced jets in the ATLAS calorimeter in association with leptons or jets using pp collisions at $\sqrt{s}=13$ TeV,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2904294>

[85]

G. Aad *et al.*, “Search for nearly mass-degenerate higgsinos using low-momentum mildly-displaced tracks in pp collisions at $\sqrt{s}=13$ TeV with the ATLAS detector,” *Phys. Rev. Lett.*, vol. 132, no. 22, p. 221801, 2024, doi: [10.1103/PhysRevLett.132.221801](https://doi.org/10.1103/PhysRevLett.132.221801).



[86]

G. Aad *et al.*, “Search for magnetic monopole pair production in ultraperipheral Pb+Pb collisions at $\sqrt{s_{NN}}=5.36$ TeV with the ATLAS detector at the LHC,” CERN, Geneva, 2024.
[Online]. Available: <https://cds.cern.ch/record/2907488>

[87]

G. Aad *et al.*, “Search for low-mass resonances decaying into two jets and produced in association with a photon or a jet at $\sqrt{s}=13$ TeV with the ATLAS detector,” *Phys. Rev. D*, vol. 110, p. 032002, 2024, doi: [10.1103/PhysRevD.110.032002](https://doi.org/10.1103/PhysRevD.110.032002).

[88]

A. Hayrapetyan *et al.*, “Search for long-lived particles using displaced vertices and missing transverse momentum in proton-proton collisions at $\sqrt{s}=13$ TeV,” *Phys. Rev. D*, vol. 109, no. 11, p. 112005, 2024, doi: [10.1103/PhysRevD.109.112005](https://doi.org/10.1103/PhysRevD.109.112005).

[89]

A. Hayrapetyan *et al.*, “Search for long-lived particles decaying to final states with a pair of muons in proton-proton collisions at $\sqrt{s}=13.6$ TeV,” *JHEP*, vol. 2405, p. 047, 2024, doi: [10.1007/JHEP05\(2024\)047](https://doi.org/10.1007/JHEP05(2024)047).

[90]

A. Hayrapetyan *et al.*, “Search for long-lived particles decaying in the CMS muon detectors in proton-proton collisions at $\sqrt{s}=13$ TeV,” *Phys. Rev. D*, vol. 110, no. 3, p. 032007, 2024, doi: [10.1103/PhysRevD.110.032007](https://doi.org/10.1103/PhysRevD.110.032007).

[91]

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,” CERN, Geneva, 2024.
[Online]. Available: <https://cds.cern.ch/record/2904465>

[92]

A. Hayrapetyan *et al.*, “Search for long-lived heavy neutral leptons decaying in the CMS muon detectors in proton-proton collisions at $\sqrt{s}=13$ TeV,” *Phys. Rev. D*, vol. 110, p. 012004, 2024, doi: [10.1103/PhysRevD.110.012004](https://doi.org/10.1103/PhysRevD.110.012004).

[93]

G. Aad *et al.*, “Search for light neutral particles decaying promptly into collimated pairs of electrons or muons in pp collisions at $\sqrt{s}=13$ TeV with the ATLAS detector,” CERN, Geneva, 2024.
[Online]. Available: <https://cds.cern.ch/record/2904293>

[94]

G. Aad *et al.*, “Search for Light Long-Lived Particles in pp Collisions at $\sqrt{s}=13$ TeV Using Displaced Vertices in the ATLAS Inner Detector,” *Phys. Rev. Lett.*, vol. 133, no. 16, p. 161803, 2024, doi: [10.1103/PhysRevLett.133.161803](https://doi.org/10.1103/PhysRevLett.133.161803).



[95]

A. Hayrapetyan *et al.*, “Search for light long-lived particles decaying to displaced jets in proton-proton collisions at $\sqrt{s} = 13.6$ TeV,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2910430>

[96]

G. Aad *et al.*, “Search for light long-lived neutral particles from Higgs boson decays via vector-boson-fusion production from pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector,” *Eur. Phys. J. C*, vol. 84, no. 7, p. 719, 2024, doi: [10.1140/epjc/s10052-024-12902-7](https://doi.org/10.1140/epjc/s10052-024-12902-7).

[97]

S. Acharya *et al.*, “Search for jet quenching effects in high-multiplicity pp collisions at $\sqrt{s} = 13$ TeV via di-jet acoplanarity,” *JHEP*, vol. 2405, p. 229, 2024, doi: [10.1007/JHEP05\(2024\)229](https://doi.org/10.1007/JHEP05(2024)229).

[98]

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,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2914818>

[99]

G. Aad *et al.*, “Search for heavy right-handed Majorana neutrinos in the decay of top quarks produced in proton-proton collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2906727>

[100]

G. Aad *et al.*, “Search for heavy resonances in final states with four leptons and missing transverse momentum or jets in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector,” *JHEP*, vol. 2410, p. 130, 2024, doi: [10.1007/JHEP10\(2024\)130](https://doi.org/10.1007/JHEP10(2024)130).

[101]

A. Hayrapetyan *et al.*, “Search for heavy neutral leptons in final states with electrons, muons, and hadronically decaying tau leptons in proton-proton collisions at $\sqrt{s} = 13$ TeV,” *JHEP*, vol. 2406, p. 123, 2024, doi: [10.1007/JHEP06\(2024\)123](https://doi.org/10.1007/JHEP06(2024)123).

[102]

G. Aad *et al.*, “Search for heavy neutral Higgs bosons decaying into a top quark pair in 140 fb^{-1} of proton-proton collision data at $\sqrt{s} = 13$ TeV with the ATLAS detector,” *JHEP*, vol. 2408, p. 013, 2024, doi: [10.1007/JHEP08\(2024\)013](https://doi.org/10.1007/JHEP08(2024)013).

[103]

G. Aad *et al.*, “Search for heavy Majorana neutrinos in e^+e^- and $e^+e^- \mu^+\mu^-$ final states via WW scattering in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector,” *Phys. Lett. B*, vol. 856, p. 138865, 2024, doi: [10.1016/j.physletb.2024.138865](https://doi.org/10.1016/j.physletb.2024.138865).

[104]

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,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2913344>



[105]

T. L. S. Collaboration *et al.*, “Search for gravitational waves emitted from SN 2023ixf,” Oct. 21, 2024, *arXiv*: arXiv:2410.16565. Accessed: Nov. 12, 2024. [Online]. Available: <http://arxiv.org/abs/2410.16565>

[106]

G. Aad *et al.*, “Search for flavour-changing neutral-current couplings between the top quark and the Higgs boson in multi-lepton final states in 13 TeV pp collisions with the ATLAS detector,” *Eur. Phys. J. C*, vol. 84, no. 7, p. 757, 2024, doi: [10.1140/epjc/s10052-024-12994-1](https://doi.org/10.1140/epjc/s10052-024-12994-1).

[107]

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,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2905089>

[108]

A. Hayrapetyan *et al.*, “Search for exotic decays of the Higgs boson to a pair of pseudoscalars in the $\mu\mu$ and $\tau\tau$ final states. Search for exotic decays of the Higgs boson to a pair of pseudoscalars in the $u\bar{u}b\bar{b}$ and $\tau\bar{\tau}b\bar{b}$ final states,” *Eur. Phys. J. C*, vol. 84, p. 493, 2024, doi: [10.1140/epjc/s10052-024-12727-4](https://doi.org/10.1140/epjc/s10052-024-12727-4).

[109]

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. Search for Excited Tau Leptons in pp Collisions at $\sqrt{s} = 13$ TeV at the LHC,” CERN, Geneva, 2022. [Online]. Available: <https://cds.cern.ch/record/2915351>

[110]

G. Aad *et al.*, “Search for electroweak production of supersymmetric particles in final states with two τ -leptons in $\sqrt{s} = 13$ TeV pp collisions with the ATLAS detector,” *JHEP*, vol. 2405, p. 150, 2024, doi: [10.1007/JHEP05\(2024\)150](https://doi.org/10.1007/JHEP05(2024)150).

[111]

G. Aad *et al.*, “Search for displaced leptons in $\sqrt{s}=13$ TeV and 13.6 TeV pp collisions with the ATLAS detector,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2914679>

[112]

G. Aad *et al.*, “Search for diphoton resonances in the 66 to 110 GeV mass range using pp collisions at $\sqrt{s}=13$ TeV with the ATLAS detector,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2904053>

[113]

G. Aad *et al.*, “Search for decays of the Higgs boson into a pair of pseudoscalar particles decaying into $b\bar{b}\tau^+\tau^-$ using pp collisions at $\sqrt{s}=13$ TeV with the ATLAS detector,” *Phys. Rev. D*, vol. 110, p. 052013, 2024, doi: [10.1103/PhysRevD.110.052013](https://doi.org/10.1103/PhysRevD.110.052013).



[114]

A. Hayrapetyan *et al.*, “Search for dark QCD with emerging jets in proton-proton collisions at $\sqrt{s} = 13$ TeV. Search for new physics with emerging jets in proton-proton collisions at $\sqrt{s} = 13$ TeV,” *JHEP*, vol. 2407, p. 142, 2024, doi: [10.1007/JHEP07\(2024\)142](https://doi.org/10.1007/JHEP07(2024)142).

[115]

G. Aad *et al.*, “Search for dark mesons decaying to top and bottom quarks in proton-proton collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector,” *JHEP*, vol. 2409, p. 005, 2024, doi: [10.1007/JHEP09\(2024\)005](https://doi.org/10.1007/JHEP09(2024)005).

[116]

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,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2908519>

[117]

G. Aad *et al.*, “Search for dark matter produced in association with a dark Higgs boson in the $b\bar{b}$ final state using pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2904348>

[118]

R. Aaij *et al.*, “Search for CP violation in the phase space of $D^0 \rightarrow K_S^0 K^{\pm} \pi^{\mp}$ decays with the energy test. Search for CP violation in the phase space of $D^0 \rightarrow K_S^0 K^{\pm} \pi^{\mp}$ decays with the energy test,” *JHEP*, vol. 2403, p. 107, 2024, doi: [10.1007/JHEP03\(2024\)107](https://doi.org/10.1007/JHEP03(2024)107).

[119]

A. Hayrapetyan *et al.*, “Search for CP violation in $D^0 \rightarrow K_S^0 K^{\pm} K^{\mp}$ decays in proton-proton collisions at $\sqrt{s} = 13$ TeV,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2898025>

[120]

G. Aad *et al.*, “Search for charged-lepton-flavour violating $\mu\tau$ interactions in top-quark production and decay in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector at the LHC,” *Phys. Rev. D*, vol. 110, no. 1, p. 012014, 2024, doi: [10.1103/PhysRevD.110.012014](https://doi.org/10.1103/PhysRevD.110.012014).

[121]

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,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2906202>

[122]

G. Aad *et al.*, “Search for boosted low-mass resonances decaying into hadrons produced in association with a photon in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2906065>



[123]

R. Aaij *et al.*, “Search for $B_c^0 \rightarrow \mu^+ \mu^-$ in $B_c^+ \rightarrow \pi^+ \mu^+ \mu^-$ decays,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2911466>

[124]

R. Aaij *et al.*, “Search for $B_c^+ \rightarrow \pi^+ \mu^+ \mu^-$ decays and measurement of the branching fraction ratio $\mathcal{B}(B_c^+ \rightarrow \psi(2S) \pi^+) / \mathcal{B}(B_c^+ \rightarrow J/\psi \pi^+)$,” *Eur. Phys. J. C*, vol. 84, no. 5, p. 468, 2024, doi: [10.1140/epjc/s10052-024-12669-x](https://doi.org/10.1140/epjc/s10052-024-12669-x).

[125]

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,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2898839>

[126]

A. Tumasyan *et al.*, “Search for a scalar or pseudoscalar dilepton resonance produced in association with a massive vector boson or top quark-antiquark pair in multilepton events at $\sqrt{s} = 13$ TeV,” *Phys. Rev. D*, vol. 110, p. 012013, 2024, doi: [10.1103/PhysRevD.110.012013](https://doi.org/10.1103/PhysRevD.110.012013).

[127]

A. Hayrapetyan *et al.*, “Search for a resonance decaying to a W boson and a photon in proton-proton collisions at $\sqrt{s} = 13$ TeV using leptonic W boson decays,” *JHEP*, vol. 2409, p. 186, 2024, doi: [10.1007/JHEP09\(2024\)186](https://doi.org/10.1007/JHEP09(2024)186).

[128]

G. Aad *et al.*, “Search for a resonance decaying into a scalar particle and a Higgs boson in the final state with two bottom quarks and two photons in proton-proton collisions at a center of mass energy of 13 TeV with the ATLAS detector,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2895971>

[129]

G. Aad *et al.*, “Search for a resonance decaying into a scalar particle and a Higgs boson in final states with leptons and two photons in proton-proton collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector,” *JHEP*, vol. 2410, p. 104, 2024, doi: [10.1007/JHEP10\(2024\)104](https://doi.org/10.1007/JHEP10(2024)104).

[130]

G. Aad *et al.*, “Search for a new scalar decaying into new spin-1 bosons in four-lepton final states with the ATLAS detector,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2914611>

[131]

G. Aad *et al.*, “Search for a light CP-odd Higgs boson decaying into a pair of τ -leptons in proton-proton collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2912033>



[132]

G. Aad *et al.*, “Search for a light charged Higgs boson in $t \rightarrow H^\pm b$ decays, with $H^\pm \rightarrow cs$, in pp collisions at $\sqrt{s}=13$ TeV with the ATLAS detector,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2904295>

[133]

“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,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2915973>

[134]

G. Aad *et al.*, “Search for a heavy charged Higgs boson decaying into a W boson and a Higgs boson in final states with leptons and b-jets in $\sqrt{s}=13$ TeV pp collisions with the ATLAS detector,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2916381>

[135]

“Reweight simulated events using machine-learning techniques in the CMS experiment,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2916297>

[136]

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,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2898784>

[137]

G. Mattia *et al.*, “Resistive relativistic MHD simulations of astrophysical jets,” *A&A*, vol. 679, p. A49, Nov. 2023, doi: [10.1051/0004-6361/202347126](https://doi.org/10.1051/0004-6361/202347126).

[138]

G. Fumagalli, I. Romero-Shaw, D. Gerosa, V. De Renzi, K. Kritos, and A. Olejak, “Residual eccentricity as a systematic uncertainty on the formation channels of binary black holes,” *Phys. Rev. D*, vol. 110, no. 6, p. 063012, Sep. 2024, doi: [10.1103/PhysRevD.110.063012](https://doi.org/10.1103/PhysRevD.110.063012).

[139]

S. Acharya *et al.*, “Rapidity dependence of antideuteron coalescence in pp collisions at $\sqrt{s}=13$ TeV with ALICE,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2904076>

[140]

G. Fabiani, I. G. Kevrekidis, C. Siettos, and A. N. Yannacopoulos, “RandONets: Shallow networks with random projections for learning linear and nonlinear operators,” *Journal of Computational Physics*, vol. 520, p. 113433, Jan. 2025, doi: [10.1016/j.jcp.2024.113433](https://doi.org/10.1016/j.jcp.2024.113433).

[141]

D. Gerosa and M. Bellotti, “Quick recipes for gravitational-wave selection effects,” *Class. Quantum Grav.*, vol. 41, no. 12, p. 125002, Jun. 2024, doi: [10.1088/1361-6382/ad4509](https://doi.org/10.1088/1361-6382/ad4509).



[142]

P. Cea and L. Cosmai, “QCD with $2 + 1$ flavors at the physical point in external chromomagnetic fields,” *Phys. Rev. D*, vol. 110, no. 9, p. 094507, Nov. 2024, doi: [10.1103/PhysRevD.110.094507](https://doi.org/10.1103/PhysRevD.110.094507).

[143]

A. Hayrapetyan *et al.*, “Pseudorapidity distributions of charged hadrons in lead-lead collisions at $\sqrt{s_{\text{NN}}} = 5.36$ TeV,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2908767>

[144]

R. Aaij *et al.*, “Prompt and nonprompt $\psi(2S)$ production in pPb collisions at $\sqrt{s_{\text{NN}}} = 8.16$ TeV. Prompt and nonprompt $\psi(2S)$ production in pPb collisions at $\sqrt{s_{\text{NN}}} = 8.16$ TeV,” *JHEP*, vol. 2404, p. 111, 2024, doi: [10.1007/JHEP04\(2024\)111](https://doi.org/10.1007/JHEP04(2024)111).

[145]

L. Giommi, D. Spiga, V. Kuznetsov, and D. Bonacorsi, “Progress on cloud native solution of Machine Learning as a Service for HEP,” *EPJ Web of Conf.*, vol. 295, p. 07040, 2024, doi: [10.1051/epjconf/202429507040](https://doi.org/10.1051/epjconf/202429507040).

[146]

R. Aaij *et al.*, “Production of η and η' mesons in pp and $p\text{Pb}$ collisions” *Phys. Rev. C*, vol. 109, no. 2, p. 024907, 2024, doi: [10.1103/PhysRevC.109.024907](https://doi.org/10.1103/PhysRevC.109.024907).

[147]

R. Aaij *et al.*, “Probing the nature of the $\chi_{c1}(3872)$ state using radiative decays,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2902243>

[148]

S. Acharya *et al.*, “Probing strangeness hadronization with event-by-event production of multistrange hadrons,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2898668>

[149]

A. Lella *et al.*, “Probing protoneutron stars with gamma-ray axionscopes,” 2024, doi: [10.48550/ARXIV.2405.02395](https://doi.org/10.48550/ARXIV.2405.02395).

[150]

Yu. M. Andreev *et al.*, “Probing light dark matter with positron beams at NA64,” *Phys. Rev. D*, vol. 109, no. 3, p. L031103, Feb. 2024, doi: [10.1103/PhysRevD.109.L031103](https://doi.org/10.1103/PhysRevD.109.L031103).

[151]

R. Aaij *et al.*, “Precision measurement of the Ξ_b^- baryon lifetime,” *Phys. Rev. D*, vol. 110, no. 7, p. 072002, 2024, doi: [10.1103/PhysRevD.110.072002](https://doi.org/10.1103/PhysRevD.110.072002).

[152]

G. Aad *et al.*, “Precise test of lepton flavour universality in W-boson decays into muons and electrons in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector,” *Eur. Phys. J. C*, vol. 84, p. 993, 2024, doi: [10.1140/epjc/s10052-024-13070-4](https://doi.org/10.1140/epjc/s10052-024-13070-4).



[153]

G. Aad *et al.*, “Precise measurements of W- and Z-boson transverse momentum spectra with the ATLAS detector using pp collisions at $\sqrt{s} = 5.02$ TeV and 13 TeV,” *Eur. Phys. J. C*, vol. 84, p. 1126, 2024, doi: [10.1140/epjc/s10052-024-13414-0](https://doi.org/10.1140/epjc/s10052-024-13414-0).

[154]

S. Acharya *et al.*, “Photoproduction of $K^+ K^-$ Pairs in Ultraperipheral Collisions. Photoproduction of $K^+ K^-$ pairs in ultra-peripheral collisions,” *Phys. Rev. Lett.*, vol. 132, no. 22, p. 222303, 2024, doi: [10.1103/PhysRevLett.132.222303](https://doi.org/10.1103/PhysRevLett.132.222303).

[155]

A. Hayrapetyan *et al.*, “Performance of the CMS high-level trigger during LHC Run 2,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2914641>

[156]

G. Aad *et al.*, “Performance of the ATLAS forward proton Time-of-Flight detector in Run 2,” *JINST*, vol. 19, p. P05054, 2024, doi: [10.1088/1748-0221/19/05/P05054](https://doi.org/10.1088/1748-0221/19/05/P05054).

[157]

A. Medaglia, L. Pareschi, and M. Zanella, “Particle simulation methods for the Landau-Fokker-Planck equation with uncertain data,” *Journal of Computational Physics*, vol. 503, p. 112845, Apr. 2024, doi: [10.1016/j.jcp.2024.112845](https://doi.org/10.1016/j.jcp.2024.112845).

[158]

S. Acharya *et al.*, “Particle production as a function of charged-particle flatnecity in pp collisions at $\sqrt{s} = 13$ TeV,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2905134>

[159]

G. Fabiani, E. Galaris, L. Russo, and C. Siettos, “Parsimonious physics-informed random projection neural networks for initial value problems of ODEs and index-1 DAEs,” *Chaos: An Interdisciplinary Journal of Nonlinear Science*, vol. 33, no. 4, p. 043128, Apr. 2023, doi: [10.1063/5.0135903](https://doi.org/10.1063/5.0135903).

[160]

C. Corianò, S. Lionetti, and M. M. Maglio, “Parity-violating CFT and the gravitational chiral anomaly,” *Phys. Rev. D*, vol. 109, no. 4, p. 045004, Feb. 2024, doi: [10.1103/PhysRevD.109.045004](https://doi.org/10.1103/PhysRevD.109.045004).

[161]

V. De Renzi, D. Gerosa, M. Mould, R. Buscicchio, and L. Zanga, “Parameter estimation of binary black holes in the endpoint of the up-down instability,” *Phys. Rev. D*, vol. 108, no. 2, p. 024024, Jul. 2023, doi: [10.1103/PhysRevD.108.024024](https://doi.org/10.1103/PhysRevD.108.024024).

[162]

D. Gangardt, A. A. Trani, C. Bonnerot, and D. Gerosa, “pAGN : the one-stop solution for AGN disc modelling,” *Monthly Notices of the Royal Astronomical Society*, vol. 530, no. 4, pp. 3689–3705, May 2024, doi: [10.1093/mnras/stae1117](https://doi.org/10.1093/mnras/stae1117).



[163]

M. Mould, D. Gerosa, M. Dall'Amico, and M. Mapelli, "One to many: comparing single gravitational-wave events to astrophysical populations," *Monthly Notices of the Royal Astronomical Society*, vol. 525, no. 3, pp. 3986–3997, Sep. 2023, doi: [10.1093/mnras/stad2502](https://doi.org/10.1093/mnras/stad2502).

[164]

M. Bruno, L. Giusti, and M. Saccardi, "On the prediction of spectral densities from Lattice QCD," 2023, *arXiv*. doi: [10.48550/ARXIV.2310.16243](https://doi.org/10.48550/ARXIV.2310.16243).

[165]

L. Frosina and A. Urbano, "On the inflationary interpretation of the nHz gravitational-wave background," 2023, *arXiv*. doi: [10.48550/ARXIV.2308.06915](https://doi.org/10.48550/ARXIV.2308.06915).

[166]

R. Aaij *et al.*, "Observation of the $B_c^{+} \rightarrow J/\psi \pi^{+} \pi^0$ decay," *JHEP*, vol. 2404, p. 151, 2024, doi: [10.1007/JHEP04\(2024\)151](https://doi.org/10.1007/JHEP04(2024)151).

[167]

A. Hayrapetyan *et al.*, "Observation of the decay and studies of the baryon in proton-proton collisions at $\sqrt{s} = 13$ TeV" *Phys. Rev. D*, vol. 110, no. 1, p. 012002, 2024, doi: [10.1103/PhysRevD.110.012002](https://doi.org/10.1103/PhysRevD.110.012002).

[168]

G. Aad *et al.*, "Observation of $t\bar{t}$ production in the lepton+jets and dilepton channels in p+Pb collisions at $\sqrt{s_{NN}} = 8.16$ TeV with the ATLAS detector," CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2897139>

[169]

R. Aaij *et al.*, "Observation of strangeness enhancement with charmed mesons in high-multiplicity p+Pb collisions at $\sqrt{s_{NN}} = 8.16$ TeV," *Phys. Rev. D*, vol. 110, no. 3, p. L031105, 2024, doi: [10.1103/PhysRevD.110.L031105](https://doi.org/10.1103/PhysRevD.110.L031105).

[170]

A. Hayrapetyan *et al.*, "Observation of quantum entanglement in top quark pair production in proton–proton collisions at $\sqrt{s} = 13$ TeV," *Rep. Prog. Phys.*, vol. 87, no. 11, p. 117801, 2024, doi: [10.1088/1361-6633/ad7e4d](https://doi.org/10.1088/1361-6633/ad7e4d).

[171]

R. Aaij *et al.*, "**Observation of New Charmonium or Charmoniumlike States in $B^+ \rightarrow D^{*+} D^{\mp} K^+ \text{ Decays}$** " *Phys. Rev. Lett.*, vol. 133, no. 13, p. 131902, 2024, doi: [10.1103/PhysRevLett.133.131902](https://doi.org/10.1103/PhysRevLett.133.131902).

[172]

R. Aaij *et al.*, "Observation of muonic Dalitz decays of χ_b mesons and precise spectroscopy of hidden-beauty states," *JHEP*, vol. 2410, p. 122, 2024, doi: [10.1007/JHEP10\(2024\)122](https://doi.org/10.1007/JHEP10(2024)122).



[173]

R. Aaij *et al.*, “Observation of $\Lambda_b^0 \rightarrow \Lambda_c^+ \bar{D}^{(*)0} K^-$ and $\Lambda_b^0 \rightarrow \Lambda_c^+ D_s^{*-}$ decays,” *Eur. Phys. J. C*, vol. 84, no. 6, p. 575, 2024, doi: [10.1140/epjc/s10052-024-12752-3](https://doi.org/10.1140/epjc/s10052-024-12752-3).

[174]

T. L. S. Collaboration *et al.*, “Observation of Gravitational Waves from the Coalescence of a $4.5 \sim M_{\odot}$ Compact Object and a Neutron Star,” *ApJL*, vol. 970, no. 2, p. L34, Aug. 2024, doi: [10.3847/2041-8213/ad5beb](https://doi.org/10.3847/2041-8213/ad5beb).

[175]

R. Aaij *et al.*, “Observation of exotic J/ψ $-3\mu/\psi$ $-2\mu/\psi$ resonances in diffractive processes in proton-proton collisions,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2905121>

[176]

G. Aad *et al.*, “Observation of electroweak production of W^+W^- in association with jets in proton-proton collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector,” *JHEP*, vol. 2407, p. 254, 2024, doi: [10.1007/JHEP07\(2024\)254](https://doi.org/10.1007/JHEP07(2024)254).

[177]

A. Hayrapetyan *et al.*, “Observation of double J/ψ meson production in pPb collisions at $\sqrt{s_{NN}} = 8.16$ TeV,” *Phys. Rev. D*, vol. 110, p. 092002, 2024, doi: [10.1103/PhysRevD.110.092002](https://doi.org/10.1103/PhysRevD.110.092002).

[178]

S. Acharya *et al.*, “Observation of abnormal suppression of $f_0(980)$ production in p-Pb collisions at $\sqrt{s_{NN}} = 5.02$ TeV,” *Phys. Lett. B*, vol. 853, p. 138665, 2024, doi: [10.1016/j.physletb.2024.138665](https://doi.org/10.1016/j.physletb.2024.138665).

[179]

A. Hayrapetyan *et al.*, “Observation of $\gamma\gamma \rightarrow \tau\tau$ in proton-proton collisions and limits on the anomalous electromagnetic moments of the τ lepton. Observation of $\gamma\gamma \rightarrow \gamma\gamma$ in proton-proton collisions and limits on the anomalous electromagnetic moments of the τ lepton,” *Rep. Prog. Phys.*, vol. 87, no. 10, p. 107801, 2024, doi: [10.1088/1361-6633/ad6fcb](https://doi.org/10.1088/1361-6633/ad6fcb).

[180]

A. Hayrapetyan *et al.*, “Nonresonant central exclusive production of charged-hadron pairs in proton-proton collisions at $\sqrt{s} = 13$ TeV,” *Phys. Rev. D*, vol. 109, no. 11, p. 112013, 2024, doi: [10.1103/PhysRevD.109.112013](https://doi.org/10.1103/PhysRevD.109.112013).

[181]

H. Vargas Alvarez, G. Fabiani, N. Kazantzis, I. G. Kevrekidis, and C. Siettos, “Nonlinear discrete-time observers with Physics-Informed Neural Networks,” *Chaos, Solitons & Fractals*, vol. 186, p. 115215, Sep. 2024, doi: [10.1016/j.chaos.2024.115215](https://doi.org/10.1016/j.chaos.2024.115215).



[182]

L. Giusti *et al.*, “Non-perturbative thermal QCD at very high temperatures,” 2024, *arXiv*. doi: [10.48550/ARXIV.2410.12626](https://doi.org/10.48550/ARXIV.2410.12626).

[183]

A. Trovato, E. Chassande-Mottin, M. Bejger, R. Flamary, and N. Courty, “Neural network time-series classifiers for gravitational-wave searches in single-detector periods,” *Class. Quantum Grav.*, vol. 41, no. 12, p. 125003, Jun. 2024, doi: [10.1088/1361-6382/ad40f0](https://doi.org/10.1088/1361-6382/ad40f0).

[184]

S. Alioli *et al.*, “N 3 LL resummation of one-jettiness for Z -boson plus jet production at hadron colliders,” *Phys. Rev. D*, vol. 109, no. 9, p. 094009, May 2024, doi: [10.1103/PhysRevD.109.094009](https://doi.org/10.1103/PhysRevD.109.094009).

[185]

S. Acharya *et al.*, “Multiplicity-dependent production of $\Sigma(1385)^{\text{pm}}$ and $\Xi(1530)^0$ in pp collisions at $\sqrt{s}=13$ TeV,” *JHEP*, vol. 2405, p. 317, 2024, doi: [10.1007/JHEP05\(2024\)317](https://doi.org/10.1007/JHEP05(2024)317).

[186]

S. Acharya *et al.*, “Multiplicity-dependent jet modification from di-hadron correlations in pp collisions at $\sqrt{s}=13$ TeV,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2909103>

[187]

A. Hayrapetyan *et al.*, “Multiplicity dependence of charm baryon and baryon meson production in pPb collisions at $\sqrt{s_{\text{NN}}}=8.16$ TeV,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2904881>

[188]

S. Acharya *et al.*, “Multiplicity dependence of charged-particle intra-jet properties in pp collisions at $\sqrt{s}=13$ TeV. Multiplicity dependence of charged-particle intra-jet properties in pp collisions at $\sqrt{s_{\text{NN}}}=13$ TeV,” *Eur. Phys. J. C*, vol. 84, no. 10, p. 1079, 2024, doi: [10.1140/epjc/s10052-024-13228-0](https://doi.org/10.1140/epjc/s10052-024-13228-0).

[189]

S. Acharya *et al.*, “Multimuons in cosmic-ray events as seen in ALICE at the LHC,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2912389>

[190]

A. Colombo *et al.*, “Multi-messenger prospects for black hole – neutron star mergers in the O4 and O5 runs,” *A&A*, vol. 686, p. A265, Jun. 2024, doi: [10.1051/0004-6361/202348384](https://doi.org/10.1051/0004-6361/202348384).

[191]

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,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2905822>



[192]

L. Anderlini *et al.*, “ML_INFN project: Status report and future perspectives,” *EPJ Web of Conf.*, vol. 295, p. 08013, 2024, doi: [10.1051/epjconf/202429508013](https://doi.org/10.1051/epjconf/202429508013).

[193]

S. Acharya *et al.*, “Medium-induced modification of groomed and ungroomed jet mass and angularities in Pb-Pb collisions at $\sqrt{s_{\text{NN}}} = 5.02$ TeV,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2915038>

[194]

G. Aad *et al.*, “Measurements of WH and ZH production with Higgs boson decays into bottom quarks and direct constraints on the charm Yukawa coupling in $13\sqrt{s}$ TeV pp collisions with the ATLAS detector,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2915296>

[195]

G. Aad *et al.*, “Measurements of the production cross-section for a Z boson in association with b- or c-jets in proton–proton collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector,” *Eur. Phys. J. C*, vol. 84, no. 9, p. 984, 2024, doi: [10.1140/epjc/s10052-024-13159-w](https://doi.org/10.1140/epjc/s10052-024-13159-w).

[196]

R. Aaij *et al.*, “Measurements of the branching fraction ratio $\mathcal{B}(\phi \rightarrow \mu^+ \mu^-) / \mathcal{B}(\phi \rightarrow \text{trme}^+ \text{trme}^-)$ with charm meson decays,” *JHEP*, vol. 2405, p. 293, 2024, doi: [10.1007/JHEP05\(2024\)293](https://doi.org/10.1007/JHEP05(2024)293).

[197]

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,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2910424>

[198]

G. Aad *et al.*, “Measurements of jet cross-section ratios in 13 TeV proton-proton collisions with ATLAS,” *Phys. Rev. D*, vol. 110, no. 7, p. 072019, 2024, doi: [10.1103/PhysRevD.110.072019](https://doi.org/10.1103/PhysRevD.110.072019).

[199]

G. Aad *et al.*, “Measurements of inclusive and differential cross-sections of $t\bar{t}\gamma$ production in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector,” *JHEP*, vol. 2410, p. 191, 2024, doi: [10.1007/JHEP10\(2024\)191](https://doi.org/10.1007/JHEP10(2024)191).

[200]

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,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2915782>

[201]

G. Aad *et al.*, “Measurements of electroweak $W^\pm Z$ boson pair production in association with two jets in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector,” *JHEP*, vol. 2406, p. 192, 2024, doi: [10.1007/JHEP06\(2024\)192](https://doi.org/10.1007/JHEP06(2024)192).



[202]

S. Acharya *et al.*, “Measurements of Chemical Potentials in Pb–Pb collisions at $\sqrt{s_{\text{NN}}} = 5.02$ TeV,” *Phys. Rev. Lett.*, vol. 133, no. 9, p. 092301, 2024, doi: [10.1103/PhysRevLett.133.092301](https://doi.org/10.1103/PhysRevLett.133.092301).

[203]

R. Aaij *et al.*, “Measurements of $\psi(2S)$ and $\chi_{c1}(3872)$ within fully reconstructed jets,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2914858>

[204]

G. Aad *et al.*, “Measurement of ZZ production cross-sections in the four-lepton final state in pp collisions at $\sqrt{s}=13.6$ TeV with the ATLAS experiment,” *Phys. Lett. B*, vol. 855, p. 138764, 2024, doi: [10.1016/j.physletb.2024.138764](https://doi.org/10.1016/j.physletb.2024.138764).

[205]

G. Aad *et al.*, “Measurement of vector boson production cross sections and their ratios using pp collisions at $\sqrt{s}=13.6$ TeV with the ATLAS detector,” *Phys. Lett. B*, vol. 854, p. 138725, 2024, doi: [10.1016/j.physletb.2024.138725](https://doi.org/10.1016/j.physletb.2024.138725).

[206]

G. Aad *et al.*, “Measurement of top-quark pair production in association with charm quarks in proton-proton collisions at $\sqrt{s}=13$ TeV with the ATLAS detector,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2910472>

[207]

G. Aad *et al.*, “Measurement of the Z boson invisible width at $\sqrt{s}=13$ TeV with the ATLAS detector,” *Phys. Lett. B*, vol. 854, p. 138705, 2024, doi: [10.1016/j.physletb.2024.138705](https://doi.org/10.1016/j.physletb.2024.138705).

[208]

G. Aad *et al.*, “Measurement of the W-boson mass and width with the ATLAS detector using proton-proton collisions at $\sqrt{s} = 7$ TeV,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2892598>

[209]

G. Aad *et al.*, “Measurement of the $VH, H \rightarrow \tau\tau$ process with the ATLAS detector at 13 TeV. Evidence for the $VH, H \rightarrow \tau\tau$ process with the ATLAS detector in Run 2,” *Phys. Lett. B*, vol. 855, p. 138817, 2024, doi: [10.1016/j.physletb.2024.138817](https://doi.org/10.1016/j.physletb.2024.138817).

[210]

G. Aad *et al.*, “Measurement of the total and differential cross-sections of $t\bar{b}W$ production in pp collisions at $\sqrt{s}=13$ TeV with the ATLAS detector,” *JHEP*, vol. 2405, p. 131, 2024, doi: [10.1007/JHEP05\(2024\)131](https://doi.org/10.1007/JHEP05(2024)131).

[211]

S. Acharya *et al.*, “Measurement of the production cross section of prompt Ξ^0_{bc} baryons in p–Pb collisions at $\sqrt{s_{\text{NN}}}=5.02$ TeV,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2898032>



[212]

S. Acharya *et al.*, “Measurement of the production and elliptic flow of (anti)nuclei in Xe-Xe collisions at $\sqrt{s_{\text{NN}}} = 5.44$ TeV,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2898298>

[213]

A. Hayrapetyan *et al.*, “Measurement of the polarizations of prompt and non-prompt J/ψ and $\psi(2S)$ mesons produced in pp collisions at $\sqrt{s} = 13$ TeV,” *Phys. Lett. B*, vol. 858, p. 139044, 2024, doi: [10.1016/j.physletb.2024.139044](https://doi.org/10.1016/j.physletb.2024.139044).

[214]

G. Aad *et al.*, “Measurement of the Lund jet plane in hadronic decays of top quarks and W bosons with the ATLAS detector,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2904450>

[215]

Yu. M. Andreev *et al.*, “Measurement of the intrinsic hadronic contamination in the NA64 – e high-purity e^+ / e^- beam at CERN,” *Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment*, vol. 1057, p. 168776, Dec. 2023, doi: [10.1016/j.nima.2023.168776](https://doi.org/10.1016/j.nima.2023.168776).

[216]

S. Acharya *et al.*, “Measurement of the inclusive isolated-photon production cross section in pp collisions at $\sqrt{s} = 13$ TeV,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2901523>

[217]

S. Acharya *et al.*, “Measurement of the inclusive isolated-photon production cross section in pp and Pb-Pb collisions at $\sqrt{s_{\text{NN}}} = 5.02$ TeV,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2910209>

[218]

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,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2906542>

[219]

A. Hayrapetyan *et al.*, “Measurement of the inclusive $\overline{\text{t}}\text{t}$ cross section in final states with at least one lepton and additional jets with 302 pb⁻¹ of pp collisions at $\sqrt{s} = 5.02$ TeV,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2915507>

[220]

S. Acharya *et al.*, “Measurement of the impact-parameter dependent azimuthal anisotropy in coherent ρ^0 photoproduction in Pb-Pb collisions at $\sqrt{s_{\text{NN}}} = 5.02$ TeV,” *Phys. Lett. B*, vol. 858, p. 139017, 2024, doi: [10.1016/j.physletb.2024.139017](https://doi.org/10.1016/j.physletb.2024.139017).



[221]

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,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2910806>

[222]

R. Aaij *et al.*, “Measurement of the effective leptonic weak mixing angle,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2912383>

[223]

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,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2907193>

[224]

R. Aaij *et al.*, “Measurement of the D^{*+} longitudinal polarization in $B^0 \rightarrow D^{*+} \tau^- \nu_\tau$ decays,” CERN, Geneva, 2023. [Online]. Available: <https://cds.cern.ch/record/2880434>

[225]

R. Aaij *et al.*, “Measurement of the CKM angle γ in $B^{\pm} \rightarrow DK(892)^{\mp} \mu^\pm \mu^\mp$ decays,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2915477>

[226]

R. Aaij *et al.*, “Measurement of the branching fraction ratios $R(D^{*+})$ and $R(D^{*0})$ using muonic τ decays,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2900176>

[227]

R. Aaij *et al.*, “Measurement of the branching fraction of $B^0 \rightarrow J/\psi \pi^0$ decays,” *JHEP*, vol. 2405, p. 065, 2024, doi: [10.1007/JHEP05\(2024\)065](https://doi.org/10.1007/JHEP05(2024)065).

[228]

G. Aad *et al.*, “Measurement of the associated production of a top-antitop-quark pair and a Higgs boson decaying into a $b\bar{b}$ pair in pp collisions at $\sqrt{s} = 13$ TeV using the ATLAS detector at the LHC,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2904447>

[229]

A. Hayrapetyan *et al.*, “Measurement of the $\overline{\text{B}}^0 \rightarrow \text{H}$ and $\text{B}^0 \rightarrow \overline{\text{H}}$ production rates in the $\text{H} \rightarrow \overline{\text{B}} \text{B}$ decay channel using proton-proton collision data at $\sqrt{s} = 13$ TeV,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2904520>

[230]

A. Hayrapetyan *et al.*, “Measurement of the $\text{B}_s^0 \rightarrow \text{J}/\psi \text{K}_S^0$ effective lifetime from proton-proton collisions at $\sqrt{s} = 13$ TeV,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2904880>



[231]

G. Aad *et al.*, “Measurement of $t\bar{t}$ production in association with additional b-jets in the e^+e^- final state in proton-proton collisions at $\sqrt{s}=13$ TeV with the ATLAS detector,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2904874>

[232]

G. Aad *et al.*, “Measurement of t-channel production of single top quarks and antiquarks in pp collisions at 13 TeV using the full ATLAS Run 2 data sample,” *JHEP*, vol. 2405, p. 305, 2024, doi: [10.1007/JHEP05\(2024\)305](https://doi.org/10.1007/JHEP05(2024)305).

[233]

G. Aad *et al.*, “Measurement of single top-quark production in association with a W boson in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector,” *Phys. Rev. D*, vol. 110, p. 072010, 2024, doi: [10.1103/PhysRevD.110.072010](https://doi.org/10.1103/PhysRevD.110.072010).

[234]

G. Aad *et al.*, “Measurement of photonuclear jet production in ultra-peripheral Pb+Pb collisions at $\sqrt{s_{NN}} = 5.02$ TeV with the ATLAS detector,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2910471>

[235]

S. Acharya *et al.*, “Measurement of Ω_c^0 baryon production and branching-fraction ratio $\text{BR}(\Omega_c^0 \rightarrow \Omega_c^+ e^- \nu_e) / \text{BR}(\Omega_c^0 \rightarrow \Omega_c^+ \pi^-)$ in pp collisions at $\sqrt{s} = 13$ TeV,” *Phys. Rev. D*, vol. 110, no. 3, p. 032014, 2024, doi: [10.1103/PhysRevD.110.032014](https://doi.org/10.1103/PhysRevD.110.032014).

[236]

R. Aaij *et al.*, “Measurement of Λ_b^0 , Λ_c^+ and Λ decay parameters using $\Lambda_b^0 \rightarrow \Lambda_c^+ h^-$ decays,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2909158>

[237]

R. Aaij *et al.*, “Measurement of J/ψ -pair production in pp collisions at $\sqrt{s}=13$ TeV and study of gluon transverse-momentum dependent PDFs,” *JHEP*, vol. 2403, p. 088, 2024, doi: [10.1007/JHEP03\(2024\)088](https://doi.org/10.1007/JHEP03(2024)088).

[238]

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,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2909620>

[239]

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,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2900127>



[240]

R. Aaij *et al.*, “Measurement of forward charged hadron flow harmonics in peripheral PbPb collisions at $\sqrt{s_{NN}}=5.02\text{TeV}$ with the LHCb detector” *Phys. Rev. C*, vol. 109, no. 5, p. 054908, 2024, doi: [10.1103/PhysRevC.109.054908](https://doi.org/10.1103/PhysRevC.109.054908).

[241]

S. Acharya *et al.*, “Measurement of $f_1(1285)$ production in pp collisions at $\sqrt{s}=13\text{ TeV}$,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2909643>

[242]

R. Aaij *et al.*, “Measurement of exclusive J/ψ and $\psi(2S)$ production at $\sqrt{s}=13\text{ TeV}$,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2909312>

[243]

G. Aad *et al.*, “Measurement of differential cross-sections in $t\bar{t}$ and $t\bar{t}$ + jets production in the lepton+jets final state in pp collisions at $\sqrt{s}=13\text{ TeV}$ using 140 fb^{-1} of ATLAS data,” *JHEP*, vol. 2408, p. 182, 2024, doi: [10.1007/JHEP08\(2024\)182](https://doi.org/10.1007/JHEP08(2024)182).

[244]

R. Aaij *et al.*, “Measurement of $D^0-\bar{D}^0$ mixing parameters and search for CP violation using $D^0 \rightarrow K^+\pi^-$ decays,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2905637>

[245]

R. Aaij *et al.*, “Measurement of CP violation observables in $D^+ \rightarrow K^- K^+\pi^+$ decays,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2909139>

[246]

R. Aaij *et al.*, “Measurement of CP violation in $B^0 \rightarrow D^+D^-$ and $B_s^0 \rightarrow D_s^+D_s^-$ decays,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2909168>

[247]

A. Hayrapetyan *et al.*, “Measurement of boosted Higgs bosons produced via vector boson fusion or gluon fusion in the $\text{H} \rightarrow \text{b}\bar{\text{b}}$ decay mode using LHC proton-proton collision data at $\sqrt{s}=13\text{ TeV}$,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2904054>

[248]

S. Acharya *et al.*, “Measurement of beauty-quark production in pp collisions at $\sqrt{s}=13\text{ TeV}$ via non-prompt D mesons,” *JHEP*, vol. 2410, p. 110, 2024, doi: [10.1007/JHEP10\(2024\)110](https://doi.org/10.1007/JHEP10(2024)110).

[249]

S. Acharya *et al.*, “Measurement of beauty production via non-prompt charm hadrons in p-Pb collisions at $\sqrt{s_{NN}}=5.02\text{ TeV}$,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2904162>



[250]

R. Aaij *et al.*, “Measurement of associated J/ψ - $\psi(2S)$ production cross-section in pp collisions at $\sqrt{s}=13$ TeV,” *JHEP*, vol. 2405, p. 259, 2024, doi: [10.1007/JHEP05\(2024\)259](https://doi.org/10.1007/JHEP05(2024)259).

[251]

R. Aaij *et al.*, “Measurement of Ξ^+_c production in pPb collisions at $\sqrt{s_{NN}}=8.16$ TeV at LHCb,” *Phys. Rev. C*, vol. 109, no. 4, p. 044901, 2024, doi: [10.1103/PhysRevC.109.044901](https://doi.org/10.1103/PhysRevC.109.044901).

[252]

S. Acharya *et al.*, “Measurement of (anti)alpha production in central Pb-Pb collisions at $\sqrt{s_{NN}}=5.02$ TeV,” *Phys. Lett. B*, vol. 858, p. 138943, 2024, doi: [10.1016/j.physletb.2024.138943](https://doi.org/10.1016/j.physletb.2024.138943).

[253]

S. Acharya *et al.*, “Measurement of Λ^3 production in Pb-Pb collisions at $\sqrt{s_{NN}}=5.02$ TeV,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2898530>

[254]

M. Frittelli and I. Sgura, “Matrix-oriented FEM formulation for reaction-diffusion PDEs on a large class of 2D domains,” *Applied Numerical Mathematics*, vol. 200, pp. 286–308, Jun. 2024, doi: [10.1016/j.apnum.2023.07.010](https://doi.org/10.1016/j.apnum.2023.07.010).

[255]

G. Mattia, L. Del Zanna, A. Pavan, and R. Cioffi, “Magnetic dissipation in short gamma-ray-burst jets: I. Resistive relativistic MHD evolution in a model environment,” *A&A*, vol. 691, p. A105, Nov. 2024, doi: [10.1051/0004-6361/202451528](https://doi.org/10.1051/0004-6361/202451528).

[256]

S. Acharya *et al.*, “Light-flavor particle production in high-multiplicity pp collisions at $\sqrt{s_{NN}}=13$ TeV as a function of transverse sphericity,” *JHEP*, vol. 2405, p. 184, 2024, doi: [10.1007/JHEP05\(2024\)184](https://doi.org/10.1007/JHEP05(2024)184).

[257]

A. Della Pia, D. G. Patsatzis, L. Russo, and C. Siettos, “Learning the latent dynamics of fluid flows from high-fidelity numerical simulations using parsimonious diffusion maps,” *Physics of Fluids*, vol. 36, no. 10, p. 105187, Oct. 2024, doi: [10.1063/5.0232378](https://doi.org/10.1063/5.0232378).

[258]

S. Bacchio, D. Bečirević, G. Gagliardi, and F. Sanfilippo, “Lattice QCD determination of the normalization of the leading-twist photon distribution amplitude and susceptibility of the quark condensate,” *Phys. Rev. D*, vol. 110, no. 3, p. 034511, Aug. 2024, doi: [10.1103/PhysRevD.110.034511](https://doi.org/10.1103/PhysRevD.110.034511).

[259]

T. Lin *et al.*, “Lattice QCD calculation of the π^0 -pole contribution to the hadronic light-by-light scattering in the anomalous magnetic moment of the muon,” 2024, *arXiv*. doi: [10.48550/ARXIV.2411.06349](https://doi.org/10.48550/ARXIV.2411.06349).



[260]

B. Allés, O. Borisenko, A. Papa, and S. Voloshyn, “Lattice gauge theories in the strong coupling and static limits as a sign-problem-free Ising model,” *Phys. Rev. D*, vol. 108, no. 5, p. 054505, Sep. 2023, doi: [10.1103/PhysRevD.108.054505](https://doi.org/10.1103/PhysRevD.108.054505).

[261]

R. Frezzotti *et al.*, “Lattice calculation of the D s meson radiative form factors over the full kinematical range,” *Phys. Rev. D*, vol. 108, no. 7, p. 074505, Oct. 2023, doi: [10.1103/PhysRevD.108.074505](https://doi.org/10.1103/PhysRevD.108.074505).

[262]

R. Aaij *et al.*, “ Λ_c^+ polarimetry using the dominant hadronic mode,” *JHEP*, vol. 2307, p. 228, 2023, doi: [10.1007/JHEP07\(2023\)228](https://doi.org/10.1007/JHEP07(2023)228).

[263]

G. Aad *et al.*, “Jet radius dependence of dijet momentum balance and suppression in Pb+Pb collisions at 5.02 TeV with the ATLAS detector,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2905635>

[264]

S. Acharya *et al.*, “ J/ψ -hadron correlations at midrapidity in pp collisions at $\sqrt{s} = 13$ TeV,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2909010>

[265]

R. Di Palma, G. Gagliardi, and F. Sanfilippo, “Investigation of optimal smearing for mesons,” in *Proceedings of The 40th International Symposium on Lattice Field Theory — PoS(LATTICE2023)*, Fermi National Accelerator Laboratory: Sissa Medialab, May 2024, p. 152. doi: [10.22323/1.453.0152](https://doi.org/10.22323/1.453.0152).

[266]

S. Acharya *et al.*, “Investigating Λ baryon production in p-Pb collisions in jets and underlying event using angular correlations,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2898510>

[267]

S. Acharya *et al.*, “Investigating the nature of the $K^*_0(700)$ state with $\pi^\pm K^0_{\text{rm}}$ correlations at the LHC,” *Phys. Lett. B*, vol. 856, p. 138915, 2024, doi: [10.1016/j.physletb.2024.138915](https://doi.org/10.1016/j.physletb.2024.138915).

[268]

S. Acharya *et al.*, “Investigating strangeness enhancement with multiplicity in pp collisions using angular correlations,” *JHEP*, vol. 2409, p. 204, 2024, doi: [10.1007/JHEP09\(2024\)204](https://doi.org/10.1007/JHEP09(2024)204).

[269]

S. Acharya *et al.*, “Investigating strangeness enhancement in jet and medium via $\phi(1020)$ production in p-Pb collisions at $\sqrt{s}_{\text{NN}} = 5.02$ TeV,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2898083>



[270]

S. Acharya *et al.*, “Investigating charm quark energy loss in medium with the nuclear modification factor of D^0 -tagged jets,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2909715>

[271]

M. Mancarella, F. Iacovelli, and D. Gerosa, “Inferring, not just detecting: Metrics for high-redshift sources observed with third-generation gravitational-wave detectors,” *Phys. Rev. D*, vol. 107, no. 10, p. L101302, May 2023, doi: [10.1103/PhysRevD.107.L101302](https://doi.org/10.1103/PhysRevD.107.L101302).

[272]

C. Alexandrou *et al.*, “Inclusive Hadronic Decay Rate of the τ Lepton from Lattice QCD: The $u\bar{s}$ Flavor Channel and the Cabibbo Angle,” *Phys. Rev. Lett.*, vol. 132, no. 26, p. 261901, Jun. 2024, doi: [10.1103/PhysRevLett.132.261901](https://doi.org/10.1103/PhysRevLett.132.261901).

[273]

A. Evangelista *et al.*, “Inclusive hadronic decay rate of the τ lepton from lattice QCD,” *Phys. Rev. D*, vol. 108, no. 7, p. 074513, Oct. 2023, doi: [10.1103/PhysRevD.108.074513](https://doi.org/10.1103/PhysRevD.108.074513).

[274]

G. Aad *et al.*, “Inclusive and differential cross-section measurements of $t\bar{t}b\bar{t}Z$ production in pp collisions at $\sqrt{s}=13$ TeV with the ATLAS detector, including EFT and spin-correlation interpretations,” *JHEP*, vol. 2407, p. 163, 2024, doi: [10.1007/JHEP07\(2024\)163](https://doi.org/10.1007/JHEP07(2024)163).

[275]

C. Grandi *et al.*, “ICSC: The Italian National Research Centre on HPC, Big Data and Quantum computing,” *EPJ Web of Conf.*, vol. 295, p. 10003, 2024, doi: [10.1051/epjconf/202429510003](https://doi.org/10.1051/epjconf/202429510003).

[276]

G. Principe *et al.*, “Hunting for gamma-ray emission from fast radio bursts,” *A&A*, vol. 675, p. A99, Jul. 2023, doi: [10.1051/0004-6361/202346492](https://doi.org/10.1051/0004-6361/202346492).

[277]

S. Acharya *et al.*, “Higher-order symmetry plane correlations in Pb-Pb collisions at $\sqrt{s_{NN}} = 5.02$ TeV,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2908101>

[278]

E. Bagnaschi, G. Degraffi, and R. Gröber, “Higgs boson pair production at NLO in the Powheg approach and the top quark mass uncertainties,” *Eur. Phys. J. C*, vol. 83, no. 11, p. 1054, Nov. 2023, doi: [10.1140/epjc/s10052-023-12238-8](https://doi.org/10.1140/epjc/s10052-023-12238-8).

[279]

D. Giordano *et al.*, “HEPScore: A new CPU benchmark for the WLCG,” *EPJ Web of Conf.*, vol. 295, p. 07024, 2024, doi: [10.1051/epjconf/202429507024](https://doi.org/10.1051/epjconf/202429507024).



[280]

D. Giordano *et al.*, “HEPScore: A new CPU benchmark for the WLCG,” 2023, *arXiv*. doi: [10.48550/ARXIV.2306.08118](https://doi.org/10.48550/ARXIV.2306.08118).

[281]

A. Banerjee, V. Ellajosyula, and L. Panizzi, “Heavy vector-like quarks decaying to exotic scalars: a case study with triplets,” *J. High Energ. Phys.*, vol. 2024, no. 1, p. 187, Jan. 2024, doi: [10.1007/JHEP01\(2024\)187](https://doi.org/10.1007/JHEP01(2024)187).

[282]

F. Cattorini, B. Giacomazzo, M. Colpi, and F. Haardt, “GRMHD simulations of accretion flows onto unequal-mass, precessing massive binary black hole mergers,” *Phys. Rev. D*, vol. 109, no. 4, p. 043004, Feb. 2024, doi: [10.1103/PhysRevD.109.043004](https://doi.org/10.1103/PhysRevD.109.043004).

[283]

G. Fedrigo, F. Cattorini, B. Giacomazzo, and M. Colpi, “GRMHD simulations of accretion flows onto massive binary black hole mergers embedded in a thin slab of gas,” *Phys. Rev. D*, vol. 109, no. 10, p. 103024, May 2024, doi: [10.1103/PhysRevD.109.103024](https://doi.org/10.1103/PhysRevD.109.103024).

[284]

A. Spadaro *et al.*, “Glitch systematics on the observation of massive black-hole binaries with LISA,” *Phys. Rev. D*, vol. 108, no. 12, p. 123029, Dec. 2023, doi: [10.1103/PhysRevD.108.123029](https://doi.org/10.1103/PhysRevD.108.123029).

[285]

A. Hayrapetyan *et al.*, “Girth and groomed radius of jets recoiling against isolated photons in lead-lead and proton-proton collisions at $\sqrt{s_{\text{NN}}} = 5.02$ TeV,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2896940>

[286]

A. Lella *et al.*, “Getting the most on supernova axions,” *Phys. Rev. D*, vol. 109, no. 2, p. 023001, Jan. 2024, doi: [10.1103/PhysRevD.109.023001](https://doi.org/10.1103/PhysRevD.109.023001).

[287]

G. Bortolato *et al.*, “Front-end RDMA over Converged Ethernet, real-time firmware simulation,” *J. Inst.*, vol. 19, no. 03, p. C03038, Mar. 2024, doi: [10.1088/1748-0221/19/03/C03038](https://doi.org/10.1088/1748-0221/19/03/C03038).

[288]

R. Aaij *et al.*, “Fraction of χ_c decays in prompt J/ψ production measured in pPb collisions at $\sqrt{s_{\text{NN}}} = 8.16$ TeV,” *Phys. Rev. Lett.*, vol. 132, no. 10, p. 102302, 2024, doi: [10.1103/PhysRevLett.132.102302](https://doi.org/10.1103/PhysRevLett.132.102302).

[289]

C. Corianò, M. M. Maglio, and R. Tommasi, “Four-point functions of gravitons and conserved currents of CFT in momentum space: testing the nonlocal action with the TTJJ,” *Eur. Phys. J. C*, vol. 83, no. 5, p. 427, May 2023, doi: [10.1140/epjc/s10052-023-11472-4](https://doi.org/10.1140/epjc/s10052-023-11472-4).



[290]

A. Pagliaro, “Forecasting Significant Stock Market Price Changes Using Machine Learning: Extra Trees Classifier Leads,” *Electronics*, vol. 12, no. 21, p. 4551, Nov. 2023, doi: [10.3390/electronics12214551](https://doi.org/10.3390/electronics12214551).

[291]

R. Aaij *et al.*, “First observation of decays” *Phys. Rev. D*, vol. 110, no. 3, p. L031104, 2024, doi: [10.1103/PhysRevD.110.L031104](https://doi.org/10.1103/PhysRevD.110.L031104).

[292]

R. Aaij *et al.*, “First observation of the $\Lambda_b^0 \rightarrow D^+ D^- \Lambda$ decay,” *JHEP*, vol. 2407, p. 140, 2024, doi: [10.1007/JHEP07\(2024\)140](https://doi.org/10.1007/JHEP07(2024)140).

[293]

S. Acharya *et al.*, “First observation of strange baryon enhancement with effective energy in pp collisions at the LHC,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2909857>

[294]

S. Acharya *et al.*, “First measurement of $A = 4$ (anti)hypernuclei at the LHC,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2912548>

[295]

S. Acharya *et al.*, “First measurement of $\Lambda_b^0 \rightarrow D^+ D^- \Lambda$ and $\Lambda_b^0 \rightarrow D^+ D^- \Lambda$ production in proton–proton collisions at $\sqrt{s} = 13$ TeV at the LHC,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2909319>

[296]

R. Aaij *et al.*, “First determination of the spin-parity of $\Lambda_c(3055)^{+0}$ baryons,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2909369>

[297]

G. Aad *et al.*, “Fiducial and differential cross-section measurements of electroweak $W\gamma$ jj production in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector,” *Eur. Phys. J. C*, vol. 84, no. 10, p. 1064, 2024, doi: [10.1140/epjc/s10052-024-13311-6](https://doi.org/10.1140/epjc/s10052-024-13311-6).

[298]

A. Coccaro, F. Armando Di Bello, S. Giagu, L. Rambelli, and N. Stocchetti, “Fast neural network inference on FPGAs for triggering on long-lived particles at colliders,” *Mach. Learn.: Sci. Technol.*, vol. 4, no. 4, p. 045040, Dec. 2023, doi: [10.1088/2632-2153/ad087a](https://doi.org/10.1088/2632-2153/ad087a).

[299]

V. Nugara, S. Plumari, L. Oliva, and V. Greco, “Far-from-equilibrium attractors with full relativistic Boltzmann approach in boost-invariant and non-boost-invariant systems,” *Eur. Phys. J. C*, vol. 84, no. 8, p. 861, Aug. 2024, doi: [10.1140/epjc/s10052-024-13227-1](https://doi.org/10.1140/epjc/s10052-024-13227-1).



[300]

V. Nugara, S. Plumari, L. Oliva, and V. Greco, “Far-from-equilibrium attractors with full relativistic Boltzmann approach in boost-invariant and non-boost-invariant systems,” *Eur. Phys. J. C*, vol. 84, no. 8, p. 861, Aug. 2024, doi: [10.1140/epjc/s10052-024-13227-1](https://doi.org/10.1140/epjc/s10052-024-13227-1).

[301]

V. Nugara, S. Plumari, L. Oliva, and V. Greco, “Far-from-equilibrium attractors with Full Relativistic Boltzmann approach in boost-invariant and non-boost-invariant systems,” 2023, *arXiv*. doi: [10.48550/ARXIV.2311.11921](https://doi.org/10.48550/ARXIV.2311.11921).

[302]

V. Nugara, V. Greco, and S. Plumari, “Far-from-equilibrium attractors with Full Relativistic Boltzmann approach in 3+1 D: moments of distribution function and anisotropic flows v_n ,” 2024, *arXiv*. doi: [10.48550/ARXIV.2409.12123](https://doi.org/10.48550/ARXIV.2409.12123).

[303]

M. Boschini *et al.*, “Extending black-hole remnant surrogate models to extreme mass ratios,” *Phys. Rev. D*, vol. 108, no. 8, p. 084015, Oct. 2023, doi: [10.1103/PhysRevD.108.084015](https://doi.org/10.1103/PhysRevD.108.084015).

[304]

S. Acharya *et al.*, “Exposing the parton-hadron transition within jets with energy-energy correlators in pp collisions at $\sqrt{s}=5.02$ TeV,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2910210>

[305]

D. Cugini, D. Nigro, M. Bruno, and D. Gerace, “Exponential optimization of quantum state preparation via adiabatic thermalization,” 2024, *arXiv*. doi: [10.48550/ARXIV.2405.03656](https://doi.org/10.48550/ARXIV.2405.03656).

[306]

S. Acharya *et al.*, “Exploring the Strong Interaction of Three-Body Systems at the LHC,” *Phys. Rev. X*, vol. 14, no. 3, p. 031051, 2024, doi: [10.1103/PhysRevX.14.031051](https://doi.org/10.1103/PhysRevX.14.031051).

[307]

S. Acharya *et al.*, “Exploring nuclear structure with multiparticle azimuthal correlations at the LHC,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2909033>

[308]

G. Aad *et al.*, “Exploration at the high-energy frontier: ATLAS Run 2 searches investigating the exotic jungle beyond the Standard Model,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2891744>

[309]

M. Bruno *et al.*, “Exploiting stochastic locality in lattice QCD: hadronic observables and their uncertainties,” *J. High Energ. Phys.*, vol. 2023, no. 11, p. 167, Nov. 2023, doi: [10.1007/JHEP11\(2023\)167](https://doi.org/10.1007/JHEP11(2023)167).



[310]

S. Acharya *et al.*, “Exclusive four pion photoproduction in ultraperipheral Pb-Pb collisions at $\sqrt{s_{\text{NN}}} = 5.02$ TeV,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2894890>

[311]

R. Aaij *et al.*, “Enhanced Production of $\Lambda 0 b$ Baryons in High-Multiplicity $p\bar{p}$ Collisions at $\sqrt{s} = 13$ TeV” *Phys. Rev. Lett.*, vol. 132, no. 8, p. 081901, 2024, doi: [10.1103/PhysRevLett.132.081901](https://doi.org/10.1103/PhysRevLett.132.081901).

[312]

S. Dal Pra *et al.*, “Enabling INFN–T1 to support heterogeneous computing architectures,” *EPJ Web of Conf.*, vol. 295, p. 11006, 2024, doi: [10.1051/epjconf/202429511006](https://doi.org/10.1051/epjconf/202429511006).

[313]

G. Aad *et al.*, “Electroweak, QCD and flavour physics studies with ATLAS data from Run 2 of the LHC,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2895170>

[314]

G. Aad *et al.*, “Electron and photon energy calibration with the ATLAS detector using LHC Run 2 data,” *JINST*, vol. 19, p. P02009, 2024, doi: [10.1088/1748-0221/19/02/P02009](https://doi.org/10.1088/1748-0221/19/02/P02009).

[315]

G. Aad *et al.*, “Electron and photon efficiencies in LHC Run 2 with the ATLAS experiment,” *JHEP*, vol. 2405, p. 162, 2024, doi: [10.1007/JHEP05\(2024\)162](https://doi.org/10.1007/JHEP05(2024)162).

[316]

D. Gerosa *et al.*, “Efficient multi-timescale dynamics of precessing black-hole binaries,” *Phys. Rev. D*, vol. 108, no. 2, p. 024042, Jul. 2023, doi: [10.1103/PhysRevD.108.024042](https://doi.org/10.1103/PhysRevD.108.024042).

[317]

O. Borisenko, V. Chelnokov, E. Mendicelli, and A. Papa, “Dual simulation of a Polyakov loop model at finite baryon density: Correlations and screening masses,” *Nuclear Physics B*, vol. 998, p. 116424, Jan. 2024, doi: [10.1016/j.nuclphysb.2023.116424](https://doi.org/10.1016/j.nuclphysb.2023.116424).

[318]

G. Aad *et al.*, “Disentangling sources of momentum fluctuations in Xe+Xe and Pb+Pb collisions with the ATLAS detector,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2903850>

[319]

H. V. Alvarez, G. Fabiani, N. Kazantzis, C. Siettos, and I. G. Kevrekidis, “Discrete-time nonlinear feedback linearization via physics-informed machine learning,” *Journal of Computational Physics*, vol. 492, p. 112408, Nov. 2023, doi: [10.1016/j.jcp.2023.112408](https://doi.org/10.1016/j.jcp.2023.112408).



[320]

G. Aad *et al.*, “Differential cross-sections for events with missing transverse momentum and jets measured with the ATLAS detector in 13 TeV proton-proton collisions,” *JHEP*, vol. 2408, p. 223, 2024, doi: [10.1007/JHEP08\(2024\)223](https://doi.org/10.1007/JHEP08(2024)223).

[321]

G. Aad *et al.*, “Differential cross-section measurements of Higgs boson production in the $H \rightarrow \tau^+ \tau^-$ decay channel in pp collisions at $\sqrt{s}=13$ TeV with the ATLAS detector,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2905357>

[322]

B. Banto Oberhauser *et al.*, “Development of the fully Geant4 compatible package for the simulation of Dark Matter in fixed target experiments,” *Computer Physics Communications*, vol. 300, p. 109199, Jul. 2024, doi: [10.1016/j.cpc.2024.109199](https://doi.org/10.1016/j.cpc.2024.109199).

[323]

G. Aad *et al.*, “Determination of the Relative Sign of the Higgs Boson Couplings to W and Z Bosons Using W Production via Vector-Boson Fusion with the ATLAS Detector,” *Phys. Rev. Lett.*, vol. 133, no. 14, p. 141801, 2024, doi: [10.1103/PhysRevLett.133.141801](https://doi.org/10.1103/PhysRevLett.133.141801).

[324]

R. Aaij *et al.*, “Determination of short- and long-distance contributions in $B^0 \rightarrow K^{*0} \mu^+ \mu^-$ decays,” *Phys. Rev. D*, vol. 109, no. 5, p. 052009, 2024, doi: [10.1103/PhysRevD.109.052009](https://doi.org/10.1103/PhysRevD.109.052009).

[325]

D. Marletta, A. Midolo, and E. Tramontana, “Detecting Photovoltaic Panels in Aerial Images by Means of Characterising Colours,” *Technologies*, vol. 11, no. 6, p. 174, Dec. 2023, doi: [10.3390/technologies11060174](https://doi.org/10.3390/technologies11060174).

[326]

I. Sgura, L. Mainetti, F. Negro, M. G. Quarta, and B. Bozzini, “Deep-learning based parameter identification enables rationalization of battery material evolution in complex electrochemical systems,” *Journal of Computational Science*, vol. 66, p. 101900, Jan. 2023, doi: [10.1016/j.jocs.2022.101900](https://doi.org/10.1016/j.jocs.2022.101900).

[327]

F. Rigamonti *et al.*, “Decomposing galaxies with BANG : an automated morphokinematic decomposition of the SDSS-DR17 MaNGA survey,” *Monthly Notices of the Royal Astronomical Society*, vol. 525, no. 1, pp. 1008–1022, Aug. 2023, doi: [10.1093/mnras/stad2363](https://doi.org/10.1093/mnras/stad2363).

[328]

A. Bombini, F. García-Avello Bofías, C. Bracci, M. Ginolfi, and C. Ruberto, “Datacube segmentation via deep spectral clustering,” *Mach. Learn.: Sci. Technol.*, vol. 5, no. 3, p. 035024, Sep. 2024, doi: [10.1088/2632-2153/ad622f](https://doi.org/10.1088/2632-2153/ad622f).



[329]

A. Bombini, F. G.-A. Bofias, C. Bracci, M. Ginolfi, and C. Ruberto, “Datacube segmentation via Deep Spectral Clustering,” 2024, doi: [10.48550/ARXIV.2401.17695](https://doi.org/10.48550/ARXIV.2401.17695).

[330]

A. Hayrapetyan *et al.*, “Dark sector searches with the CMS experiment,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2898346>

[331]

F. Semenzato *et al.*, “Cross-Correlating the Universe: The Gravitational Wave Background and Large-Scale Structure,” 2024, *arXiv*. doi: [10.48550/ARXIV.2411.00532](https://doi.org/10.48550/ARXIV.2411.00532).

[332]

P. Carenza *et al.*, “Cross section for supernova axion observation in neutrino water Čerenkov detectors,” *Phys. Rev. C*, vol. 109, no. 1, p. 015501, Jan. 2024, doi: [10.1103/PhysRevC.109.015501](https://doi.org/10.1103/PhysRevC.109.015501).

[333]

N. Borghi *et al.*, “Cosmology and Astrophysics with Standard Sirens and Galaxy Catalogs in View of Future Gravitational Wave Observations,” 2023, doi: [10.48550/ARXIV.2312.05302](https://doi.org/10.48550/ARXIV.2312.05302).

[334]

A. Hayrapetyan *et al.*, “Constraints on the Higgs boson self-coupling with combination of single and double Higgs boson production,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2904902>

[335]

G. Aad *et al.*, “Constraints on dark matter models involving an s-channel mediator with the ATLAS detector in pp collisions at $\sqrt{s} = 13$ TeV,” *Eur. Phys. J. C*, vol. 84, no. 10, p. 1102, 2024, doi: [10.1140/epjc/s10052-024-13215-5](https://doi.org/10.1140/epjc/s10052-024-13215-5).

[336]

A. Hayrapetyan *et al.*, “Constraints on anomalous Higgs boson couplings from its production and decay using the WW channel in proton-proton collisions at $\sqrt{s} = 13$ TeV,” *Eur. Phys. J. C*, vol. 84, no. 8, p. 779, 2024, doi: [10.1140/epjc/s10052-024-12925-0](https://doi.org/10.1140/epjc/s10052-024-12925-0).

[337]

G. Aad *et al.*, “Constraint on the total width of the Higgs boson from Higgs boson and four-top-quark measurements in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2904422>

[338]

A. Lella, F. Calore, P. Carenza, and A. Mirizzi, “Constraining gravitational-wave backgrounds from conversions into photons in the Galactic magnetic field,” *Phys. Rev. D*, vol. 110, no. 8, p. 083042, Oct. 2024, doi: [10.1103/PhysRevD.110.083042](https://doi.org/10.1103/PhysRevD.110.083042).



[339]

C. Arina, B. Fuks, J. Heisig, M. Krämer, L. Mantani, and L. Panizzi, “Comprehensive exploration of t -channel simplified models of dark matter,” *Phys. Rev. D*, vol. 108, no. 11, p. 115007, Dec. 2023, doi: [10.1103/PhysRevD.108.115007](https://doi.org/10.1103/PhysRevD.108.115007).

[340]

P. Carenza, G. Lucente, L. Mastrototaro, A. Mirizzi, and P. D. Serpico, “Comprehensive constraints on heavy sterile neutrinos from core-collapse supernovae,” *Phys. Rev. D*, vol. 109, no. 6, p. 063010, Mar. 2024, doi: [10.1103/PhysRevD.109.063010](https://doi.org/10.1103/PhysRevD.109.063010).

[341]

R. Aaij *et al.*, “Comprehensive analysis of local and nonlocal amplitudes in the $B^0 \rightarrow K^*0 \mu^+ \mu^-$ decay,” *JHEP*, vol. 2409, p. 026, 2024, doi: [10.1007/JHEP09\(2024\)026](https://doi.org/10.1007/JHEP09(2024)026).

[342]

A. Hayrapetyan *et al.*, “Combined search for electroweak production of winos, binos, higgsinos, and sleptons in proton-proton collisions at $\sqrt{s} = 13$ TeV,” *Phys. Rev. D*, vol. 109, no. 11, p. 112001, 2024, doi: [10.1103/PhysRevD.109.112001](https://doi.org/10.1103/PhysRevD.109.112001).

[343]

G. Aad *et al.*, “Combination of searches for singly produced vector-like top quarks in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2907370>

[344]

G. Aad *et al.*, “Combination of searches for singly and doubly charged Higgs bosons produced via vector-boson fusion in proton-proton collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2904437>

[345]

G. Aad *et al.*, “Combination of searches for resonant Higgs boson pair production using pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector,” *Phys. Rev. Lett.*, vol. 132, no. 23, p. 231801, 2024, doi: [10.1103/PhysRevLett.132.231801](https://doi.org/10.1103/PhysRevLett.132.231801).

[346]

G. Aad *et al.*, “Combination of searches for pair-produced leptoquarks at $\sqrt{s} = 13$ TeV with the ATLAS detector,” *Phys. Lett. B*, vol. 854, p. 138736, 2024, doi: [10.1016/j.physletb.2024.138736](https://doi.org/10.1016/j.physletb.2024.138736).

[347]

G. Aad *et al.*, “Combination of searches for Higgs boson pair production in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector,” *Phys. Rev. Lett.*, vol. 133, no. 10, p. 101801, 2024, doi: [10.1103/PhysRevLett.133.101801](https://doi.org/10.1103/PhysRevLett.133.101801).

[348]

G. Aad *et al.*, “Combination of searches for Higgs boson decays into a photon and a massless dark photon using pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector,” *JHEP*, vol. 2408, p. 153, 2024, doi: [10.1007/JHEP08\(2024\)153](https://doi.org/10.1007/JHEP08(2024)153).



[349]

G. Aad *et al.*, “Combination of searches for heavy spin-1 resonances using 139 fb⁻¹ of proton-proton collision data at $\sqrt{s} = 13$ TeV with the ATLAS detector,” *JHEP*, vol. 2404, p. 118, 2024, doi: [10.1007/JHEP04\(2024\)118](https://doi.org/10.1007/JHEP04(2024)118).

[350]

G. Aad *et al.*, “Combination and summary of ATLAS dark matter searches interpreted in a 2HDM with a pseudo-scalar mediator using 139 fb⁻¹ of $\sqrt{s} = 13$ TeV pp collision data,” *Sci. Bull.*, vol. 69, no. 19, pp. 3005–3035, 2024, doi: [10.1016/j.scib.2024.06.003](https://doi.org/10.1016/j.scib.2024.06.003).

[351]

A. Feike, J. Fiaschi, B. Fuks, M. Klasen, and A. P. Neuwirth, “Combination and reinterpretation of LHC SUSY searches,” *J. High Energ. Phys.*, vol. 2024, no. 7, p. 122, Jul. 2024, doi: [10.1007/JHEP07\(2024\)122](https://doi.org/10.1007/JHEP07(2024)122).

[352]

S. Acharya *et al.*, “Coherent J/ψ photoproduction at midrapidity in Pb-Pb collisions at $\sqrt{s_{NN}} = 5.02$ TeV,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2909311>

[353]

G. Aad *et al.*, “Climbing to the Top of the ATLAS 13 TeV data,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2895721>

[354]

S. Acharya *et al.*, “Charm fragmentation fractions and $\overline{\sigma}_{\text{charm}}$ cross section in p-Pb collisions at $\sqrt{s_{NN}} = 5.02$ TeV,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2898036>

[355]

N. Vignaroli, “Charged resonances and MDM bound states at a multi-TeV muon collider,” *J. High Energ. Phys.*, vol. 2023, no. 10, p. 121, Oct. 2023, doi: [10.1007/JHEP10\(2023\)121](https://doi.org/10.1007/JHEP10(2023)121).

[356]

G. Aad *et al.*, “Characterising the Higgs boson with ATLAS data from Run 2 of the LHC,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2894897>

[357]

C. Corianò, S. Lionetti, and M. M. Maglio, “CFT correlators and CP-violating trace anomalies,” *Eur. Phys. J. C*, vol. 83, no. 9, p. 839, Sep. 2023, doi: [10.1140/epjc/s10052-023-11984-z](https://doi.org/10.1140/epjc/s10052-023-11984-z).

[358]

C. Pacilio, D. Gerosa, and S. Bhagwat, “Catalog variance of testing general relativity with gravitational-wave data,” *Phys. Rev. D*, vol. 109, no. 8, p. L081302, Apr. 2024, doi: [10.1103/PhysRevD.109.L081302](https://doi.org/10.1103/PhysRevD.109.L081302).



[359]

G. Aad *et al.*, “Calibration of a soft secondary vertex tagger using proton-proton collisions at $\sqrt{s}=13$ TeV with the ATLAS detector,” *Phys. Rev. D*, vol. 110, no. 3, p. 032015, 2024, doi: [10.1103/PhysRevD.110.032015](https://doi.org/10.1103/PhysRevD.110.032015).

[360]

M. Mould, C. J. Moore, and D. Gerosa, “Calibrating signal-to-noise ratio detection thresholds using gravitational-wave catalogs,” *Phys. Rev. D*, vol. 109, no. 6, p. 063013, Mar. 2024, doi: [10.1103/PhysRevD.109.063013](https://doi.org/10.1103/PhysRevD.109.063013).

[361]

C. Corianò, M. Cretì, and M. M. Maglio, “Broken scale invariance and the regularization of a conformal sector in gravity with Wess-Zumino actions,” *Physics Letters B*, vol. 843, p. 138003, Aug. 2023, doi: [10.1016/j.physletb.2023.138003](https://doi.org/10.1016/j.physletb.2023.138003).

[362]

J. C. Algaba *et al.*, “Broadband Multi-wavelength Properties of M87 during the 2018 EHT Campaign including a Very High Energy Flaring Episode,” 2024, *arXiv*. doi: [10.48550/ARXIV.2404.17623](https://doi.org/10.48550/ARXIV.2404.17623).

[363]

A. Hayrapetyan *et al.*, “Bottom quark energy loss and hadronization with B^+ and B^0 nuclear modification factors using pp and PbPb collisions at $\sqrt{s_{NN}}=5.02$ TeV,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2909725>

[364]

A. Santini, D. Gerosa, R. Cotesta, and E. Berti, “Black-hole mergers in disklike environments could explain the observed $q-\chi$ eff correlation,” *Phys. Rev. D*, vol. 108, no. 8, p. 083033, Oct. 2023, doi: [10.1103/PhysRevD.108.083033](https://doi.org/10.1103/PhysRevD.108.083033).

[365]

G. Fabiano, G. Gubitosi, F. Lizzi, L. Scala, and P. Vitale, “Bicrossproduct vs. twist quantum symmetries in noncommutative geometries: the case of q -Minkowski,” *J. High Energ. Phys.*, vol. 2023, no. 8, p. 220, Aug. 2023, doi: [10.1007/JHEP08\(2023\)220](https://doi.org/10.1007/JHEP08(2023)220).

[366]

G. Aad *et al.*, “Beam-induced backgrounds measured in the ATLAS detector during local gas injection into the LHC beam vacuum,” *JINST*, vol. 19, p. 0614, 2024, doi: [10.1088/1748-0221/19/06/P06014](https://doi.org/10.1088/1748-0221/19/06/P06014).

[367]

L. Giusti, M. Laine, D. Laudicina, M. Pepe, and P. Rescigno, “Baryonic thermal screening mass at NLO,” *J. High Energ. Phys.*, vol. 2024, no. 6, p. 205, Jun. 2024, doi: [10.1007/JHEP06\(2024\)205](https://doi.org/10.1007/JHEP06(2024)205).



[368]

L. Giusti, T. Harris, D. Laudicina, M. Pepe, and P. Rescigno, “Baryonic screening masses in QCD at high temperature,” *Physics Letters B*, vol. 855, p. 138799, Aug. 2024, doi: [10.1016/j.physletb.2024.138799](https://doi.org/10.1016/j.physletb.2024.138799).

[369]

F. Rigamonti *et al.*, “BANG-MaNGA: A census of kinematic discs and bulges across mass and star formation in the local Universe,” *A&A*, vol. 686, p. A98, Jun. 2024, doi: [10.1051/0004-6361/202449191](https://doi.org/10.1051/0004-6361/202449191).

[370]

R. Frezzotti *et al.*, “ $B_s \rightarrow \mu + \mu - \gamma$ decay rate at large q^2 from lattice QCD,” *Phys. Rev. D*, vol. 109, no. 11, p. 114506, Jun. 2024, doi: [10.1103/PhysRevD.109.114506](https://doi.org/10.1103/PhysRevD.109.114506).

[371]

S. Acharya *et al.*, “Azimuthal anisotropy of jet particles in p-Pb and Pb-Pb collisions at $\sqrt{s_{NN}} = 5.02$ TeV,” *JHEP*, vol. 2408, p. 234, 2024, doi: [10.1007/JHEP08\(2024\)234](https://doi.org/10.1007/JHEP08(2024)234).

[372]

G. Aad *et al.*, “Azimuthal angle correlations of muons produced via heavy-flavor decays in 5.02 TeV Pb+Pb and pp collisions with the ATLAS detector,” *Phys. Rev. Lett.*, vol. 132, no. 20, p. 202301, 2024, doi: [10.1103/PhysRevLett.132.202301](https://doi.org/10.1103/PhysRevLett.132.202301).

[373]

P. Carena, M. Giannotti, J. Isern, A. Mirizzi, and O. Straniero, “Axion Astrophysics,” 2024, *arXiv*. doi: [10.48550/ARXIV.2411.02492](https://doi.org/10.48550/ARXIV.2411.02492).

[374]

F. Stoppa *et al.*, “AutoSourceID-FeatureExtractor: Optical image analysis using a two-step mean variance estimation network for feature estimation and uncertainty characterisation,” *A&A*, vol. 680, p. A108, Dec. 2023, doi: [10.1051/0004-6361/202346983](https://doi.org/10.1051/0004-6361/202346983).

[375]

F. Stoppa *et al.*, “AutoSourceID-Classifer: Star-galaxy classification using a convolutional neural network with spatial information,” *A&A*, vol. 680, p. A109, Dec. 2023, doi: [10.1051/0004-6361/202347576](https://doi.org/10.1051/0004-6361/202347576).

[376]

P. H. Frampton, C. Corianò, and P. Santorelli, “Atmospheric Neutrino octant from flavor symmetry,” *Mod. Phys. Lett. A*, vol. 39, no. 09, p. 2450028, Mar. 2024, doi: [10.1142/S0217732324500287](https://doi.org/10.1142/S0217732324500287).

[377]

G. Aad *et al.*, “ATLAS searches for additional scalars and exotic Higgs boson decays with the LHC Run 2 dataset,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2897142>



[378]

G. Aad *et al.*, “ATLAS Run 2 searches for electroweak production of supersymmetric particles interpreted within the pMSSM,” *JHEP*, vol. 2405, p. 106, 2024, doi: [10.1007/JHEP05\(2024\)106](https://doi.org/10.1007/JHEP05(2024)106).

[379]

M. Boschini, D. Gerosa, O. S. Salafia, and M. Dotti, “Astrophysical and relativistic modeling of the recoiling black hole candidate in quasar 3C 186,” *A&A*, vol. 686, p. A245, Jun. 2024, doi: [10.1051/0004-6361/202449596](https://doi.org/10.1051/0004-6361/202449596).

[380]

A. Pagliaro, G. Cusumano, A. L. La Barbera, V. L. La Parola, and S. Lombardi, “Application of Machine Learning Ensemble Methods to ASTRI Mini-Array Cherenkov Event Reconstruction,” *Applied Sciences*, vol. 13, no. 14, p. 8172, Jul. 2023, doi: [10.3390/app13148172](https://doi.org/10.3390/app13148172).

[381]

R. Aaij *et al.*, “Analysis of $\Lambda_b^0 \rightarrow p K^+ \mu^- \mu^-$ decays,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2910751>

[382]

C. Corianò, P. H. Frampton, D. Melle, T. W. Kephart, and T.-C. Yuan, “An SU(15) approach to bifermion classification,” *Mod. Phys. Lett. A*, vol. 38, no. 26n27, p. 2350124, Sep. 2023, doi: [10.1142/S0217732323501249](https://doi.org/10.1142/S0217732323501249).

[383]

A. Anzalone, A. Pagliaro, and A. Tutone, “An Introduction to Machine and Deep Learning Methods for Cloud Masking Applications,” *Applied Sciences*, vol. 14, no. 7, p. 2887, Mar. 2024, doi: [10.3390/app14072887](https://doi.org/10.3390/app14072887).

[384]

R. Aaij *et al.*, “Amplitude analysis of the radiative decay $B^0 \rightarrow K^+ K^- \gamma$,” 2024, doi: [10.1007/JHEP08\(2024\)093](https://doi.org/10.1007/JHEP08(2024)093).

[385]

R. Aaij *et al.*, “Amplitude analysis of the $\Lambda_b^0 \rightarrow p K^- \gamma$ decay,” *JHEP*, vol. 2406, p. 098, 2024, doi: [10.1007/JHEP06\(2024\)098](https://doi.org/10.1007/JHEP06(2024)098).

[386]

R. Aaij *et al.*, “Amplitude analysis of the $B^0 \rightarrow K^{*0} \mu^+ \mu^-$ decay,” *Phys. Rev. Lett.*, vol. 132, no. 13, p. 131801, 2024, doi: [10.1103/PhysRevLett.132.131801](https://doi.org/10.1103/PhysRevLett.132.131801).

[387]

R. Aaij *et al.*, “Amplitude analysis of $B^+ \rightarrow \psi(2S) K^+ \pi^+ \pi^-$ decays,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2904824>

[388]

R. Aaij *et al.*, “Amplitude analysis and branching fraction measurement of $B^+ \rightarrow D^{*-} D_s^+ \pi^+$ decays,” *JHEP*, vol. 2408, p. 165, 2024, doi: [10.1007/JHEP08\(2024\)165](https://doi.org/10.1007/JHEP08(2024)165).



[389]

A. Pagliaro and P. Sangiorgi, “AI in Experiments: Present Status and Future Prospects,” *Applied Sciences*, vol. 13, no. 18, p. 10415, Sep. 2023, doi: [10.3390/app131810415](https://doi.org/10.3390/app131810415).

[390]

S. Acharya *et al.*, “Addendum: Dielectron production in proton-proton and proton-lead collisions at $\sqrt{s_{\text{NN}}} = 5.02$ TeV,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2910487>

[391]

G. Aad *et al.*, “Accuracy versus precision in boosted top tagging with the ATLAS detector,” *JINST*, vol. 19, p. P08018, 2024, doi: [10.1088/1748-0221/19/08/P08018](https://doi.org/10.1088/1748-0221/19/08/P08018).

[392]

G. Aad *et al.*, “A statistical combination of ATLAS Run 2 searches for charginos and neutralinos at the LHC,” *Phys. Rev. Lett.*, vol. 133, p. 031802, 2024, doi: [10.1103/PhysRevLett.133.031802](https://doi.org/10.1103/PhysRevLett.133.031802).

[393]

G. Aad *et al.*, “A simultaneous unbinned differential cross section measurement of twenty-four Z+jets kinematic observables with the ATLAS detector,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2899105>

[394]

T. L. S. Collaboration *et al.*, “A search using GEO600 for gravitational waves coincident with fast radio bursts from SGR 1935+2154,” Oct. 11, 2024, *arXiv*: arXiv:2410.09151. Accessed: Nov. 12, 2024. [Online]. Available: <http://arxiv.org/abs/2410.09151>

[395]

G. Aad *et al.*, “A search for triple Higgs boson production in the 6b final state using pp collisions at $\sqrt{s}=13$ TeV with the ATLAS detector,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2916146>

[396]

G. Aad *et al.*, “A search for top-squark pair production, in final states containing a top quark, a charm quark and missing transverse momentum, using the 139 fb⁻¹ of pp collision data collected by the ATLAS detector,” *JHEP*, vol. 2407, p. 250, 2024, doi: [10.1007/JHEP07\(2024\)250](https://doi.org/10.1007/JHEP07(2024)250).

[397]

G. Aad *et al.*, “A search for R-parity-violating supersymmetry in final states containing many jets in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector,” *JHEP*, vol. 2405, p. 003, 2024, doi: [10.1007/JHEP05\(2024\)003](https://doi.org/10.1007/JHEP05(2024)003).

[398]

G. Aad *et al.*, “A search for R-parity violating supersymmetric decays of the top squark to a b-jet and a lepton in $\sqrt{s} = 13$ TeV pp collisions with the ATLAS detector,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2902320>



[399]

G. Aad *et al.*, “A precise measurement of the jet energy scale derived from single-particle measurements and in situ techniques in proton-proton collisions at $\sqrt{s}=13$ TeV with the ATLAS detector,” CERN, Geneva, 2024. [Online]. Available: <https://cds.cern.ch/record/2905177>

[400]

M. Monteleone, S. Gennai, P. Govoni, and C. Paganelli, “A novel explainable approach in radiomics pipeline for local recurrence prediction of lung cancer: a feasibility study exploiting high energy physics potential to evaluate the model,” in *Proceedings of the 2023 10th International Conference on Bioinformatics Research and Applications*, Barcelona Spain: ACM, Sep. 2023, pp. 184–187. doi: [10.1145/3632047.3632074](https://doi.org/10.1145/3632047.3632074).

[401]

R. Aaij *et al.*, “A model-independent measurement of the CKM angle γ in partially reconstructed $B^{\pm} \rightarrow D^{*} h^{\pm}$ decays with $D \rightarrow K_S^0 h^{\pm} (h = \pi, K)$,” *JHEP*, vol. 2402, p. 118, 2024, doi: [10.1007/JHEP02\(2024\)118](https://doi.org/10.1007/JHEP02(2024)118).

[402]

L. Del Zanna, S. Landi, L. Serafini, M. Bugli, and E. Papini, “A GPU-Accelerated Modern Fortran Version of the ECHO Code for Relativistic Magnetohydrodynamics,” *Fluids*, vol. 9, no. 1, p. 16, Jan. 2024, doi: [10.3390/fluids9010016](https://doi.org/10.3390/fluids9010016).

[403]

A. Mignone *et al.*, “A fourth-order accurate finite volume scheme for resistive relativistic MHD,” *Monthly Notices of the Royal Astronomical Society*, vol. 533, no. 2, pp. 1670–1686, Aug. 2024, doi: [10.1093/mnras/stae1729](https://doi.org/10.1093/mnras/stae1729).

[404]

M. Dotti, F. Rigamonti, S. Rinaldi, W. Del Pozzo, R. Decarli, and R. Buscicchio, “A fast test for the identification and confirmation of massive black hole binaries,” *A&A*, vol. 680, p. A69, Dec. 2023, doi: [10.1051/0004-6361/202346916](https://doi.org/10.1051/0004-6361/202346916).

[405]

R. Calabrese, A. O. M. Iorio, S. Morisi, G. Ricciardi, and N. Vignaroli, “331 models and bilepton searches at the LHC,” *Phys. Rev. D*, vol. 109, no. 5, p. 055030, Mar. 2024, doi: [10.1103/PhysRevD.109.055030](https://doi.org/10.1103/PhysRevD.109.055030).

[406]

M. Migliorini, J. Pazzini, A. Triossi, M. Zanetti, and the CMS Muon Group, “40 MHz triggerless readout of the CMS Drift Tube muon detector,” *J. Inst.*, vol. 19, no. 02, p. C02050, Feb. 2024, doi: [10.1088/1748-0221/19/02/C02050](https://doi.org/10.1088/1748-0221/19/02/C02050).

[407]

S. Giorgetti, “40 MHz Scouting for the CMS Level-1 Trigger,” *Il Nuovo Cimento C*, vol. 47, no. 3, pp. 1–5, Apr. 2024, doi: [10.1393/ncc/i2024-24122-0](https://doi.org/10.1393/ncc/i2024-24122-0).



[408]

C. Coriano, M. Creti, S. Lionetti, M. M. Maglio, and R. Tommasi, “4D Einstein Gauss-Bonnet Gravity without a Dilaton,” in *Proceedings of Corfu Summer Institute 2022 “School and Workshops on Elementary Particle Physics and Gravity” — PoS(CORFU2022)*, Corfu, Greece: Sissa Medialab, Nov. 2023, p. 099. doi: [10.22323/1.436.0099](https://doi.org/10.22323/1.436.0099).

[409]

A. Palermo, E. Grossi, I. Karpenko, and F. Becattini, “ Λ polarization in very high energy heavy ion collisions as a probe of the Quark-Gluon Plasma formation and properties,” 2024, *arXiv*. doi: [10.48550/ARXIV.2404.14295](https://doi.org/10.48550/ARXIV.2404.14295).

[410]

S. Garrappa *et al.*, “Fermi-LAT follow-up observations in seven years of real-time high-energy neutrino alerts,” 2024, doi: [10.48550/ARXIV.2401.06666](https://doi.org/10.48550/ARXIV.2401.06666).

[411]

A. Palermo, E. Grossi, I. Karpenko, and F. Becattini, “ Λ polarization in very high energy heavy ion collisions as a probe of the quark–gluon plasma formation and properties,” *Eur. Phys. J. C*, vol. 84, no. 9, p. 920, Sep. 2024, doi: [10.1140/epjc/s10052-024-13229-z](https://doi.org/10.1140/epjc/s10052-024-13229-z).