

Rapport d'activité LPNHE 2022–2023

Liste de publications du groupe ATLAS

- [1] M. Aaboud, G. Aad, B. Abbott et al. « Measurement of the inclusive $t\bar{t}$ production cross section in the lepton+jets channel in pp collisions at $\sqrt{s}=7$ TeV with the ATLAS detector using support vector machines ». *Phys. Rev. D* 108.3, 032014 (août 2023), p. 032014. DOI : [10.1103/PhysRevD.108.032014](https://doi.org/10.1103/PhysRevD.108.032014). arXiv : [2212.00571](https://arxiv.org/abs/2212.00571) [hep-ex].
- [2] G. Aad et al. « Measurement of exclusive pion pair production in proton–proton collisions at $\sqrt{s}=7$ TeV with the ATLAS detector ». *Eur. Phys. J. C* 83.7 (2023), p. 627. DOI : [10.1140/epjc/s10052-023-11700-x](https://doi.org/10.1140/epjc/s10052-023-11700-x). arXiv : [2212.00664](https://arxiv.org/abs/2212.00664) [hep-ex].
- [3] G. Aad, B. Abbott, D. C. Abbott et al. « Calibration of the light-flavour jet mistagging efficiency of the b-tagging algorithms with Z+jets events using 139 fb^{-1} of ATLAS proton–proton collision data at $\sqrt{s}=13$ TeV ». *European Physical Journal C* 83.8, 728 (août 2023), p. 728. DOI : [10.1140/epjc/s10052-023-11736-z](https://doi.org/10.1140/epjc/s10052-023-11736-z). arXiv : [2301.06319](https://arxiv.org/abs/2301.06319) [hep-ex].
- [4] G. Aad, B. Abbott, D. C. Abbott et al. « Correlations between flow and transverse momentum in Xe +Xe and Pb +Pb collisions at the LHC with the ATLAS detector : A probe of the heavy-ion initial state and nuclear deformation ». *Phys. Rev. C* 107.5, 054910 (mai 2023), p. 054910. DOI : [10.1103/PhysRevC.107.054910](https://doi.org/10.1103/PhysRevC.107.054910).
- [5] G. Aad, B. Abbott, D. C. Abbott et al. « Determination of the parton distribution functions of the proton using diverse ATLAS data from pp collisions at $\sqrt{s}=7$, 8 and 13 TeV ». *European Physical Journal C* 82.5, 438 (mai 2022), p. 438. DOI : [10.1140/epjc/s10052-022-10217-z](https://doi.org/10.1140/epjc/s10052-022-10217-z). arXiv : [2112.11266](https://arxiv.org/abs/2112.11266) [hep-ex].
- [6] G. Aad, B. Abbott, D. C. Abbott et al. « Direct constraint on the Higgs-charm coupling from a search for Higgs boson decays into charm quarks with the ATLAS detector ». *European Physical Journal C* 82.8, 717 (août 2022), p. 717. DOI : [10.1140/epjc/s10052-022-10588-3](https://doi.org/10.1140/epjc/s10052-022-10588-3). arXiv : [2201.11428](https://arxiv.org/abs/2201.11428) [hep-ex].
- [7] G. Aad, B. Abbott, D. C. Abbott et al. « Emulating the impact of additional proton–proton interactions in the ATLAS simulation by presampling sets of inelastic Monte Carlo events ». *Computing and Software for Big Science* 6.1, 3 (déc. 2022), p. 3. DOI : [10.1007/s41781-021-00062-2](https://doi.org/10.1007/s41781-021-00062-2). arXiv : [2102.09495](https://arxiv.org/abs/2102.09495) [hep-ex].
- [8] G. Aad, B. Abbott, D. C. Abbott et al. « Measurement of the c -jet mistagging efficiency in $t\bar{t}$ events using pp collision data at $\sqrt{s}=13$ TeV collected with the ATLAS detector ». *European Physical Journal C* 82.1, 95 (jan. 2022), p. 95. DOI : [10.1140/epjc/s10052-021-09843-w](https://doi.org/10.1140/epjc/s10052-021-09843-w).

- [9] G. Aad, B. Abbott, D. C. Abbott et al. « Measurement of the Higgs boson mass in the $H \rightarrow ZZ^* \rightarrow 4\ell$ decay channel using 139 fb^{-1} of $\sqrt{s} = 13 \text{ TeV}$ pp collisions recorded by the ATLAS detector at the LHC ». *Physics Letters B* 843, 137880 (août 2023), p. 137880. DOI : [10.1016/j.physletb.2023.137880](https://doi.org/10.1016/j.physletb.2023.137880). arXiv : [2207.00320](https://arxiv.org/abs/2207.00320) [hep-ex].
- [10] G. Aad, B. Abbott, D. C. Abbott et al. « Measurement of the nuclear modification factor for muons from charm and bottom hadrons in Pb+Pb collisions at 5.02 TeV with the ATLAS detector ». *Physics Letters B* 829, 137077 (juin 2022), p. 137077. DOI : [10.1016/j.physletb.2022.137077](https://doi.org/10.1016/j.physletb.2022.137077).
- [11] G. Aad, B. Abbott, D. C. Abbott et al. « Measurements of Higgs boson production by gluon-gluon fusion and vector-boson fusion using $H \rightarrow W W^* \rightarrow e \nu \mu \nu$ decays in pp collisions at $\sqrt{s}=13 \text{ TeV}$ with the ATLAS detector ». *Phys. Rev. D* 108.3, 032005 (août 2023), p. 032005. DOI : [10.1103/PhysRevD.108.032005](https://doi.org/10.1103/PhysRevD.108.032005). arXiv : [2207.00338](https://arxiv.org/abs/2207.00338) [hep-ex].
- [12] G. Aad, B. Abbott, D. C. Abbott et al. « Measurements of jet observables sensitive to b -quark fragmentation in $t\bar{t}$ events at the LHC with the ATLAS detector ». *Phys. Rev. D* 106.3, 032008 (août 2022), p. 032008. DOI : [10.1103/PhysRevD.106.032008](https://doi.org/10.1103/PhysRevD.106.032008). arXiv : [2202.13901](https://arxiv.org/abs/2202.13901) [hep-ex].
- [13] G. Aad, B. Abbott, D. C. Abbott et al. « Measurements of observables sensitive to colour reconnection in $t\bar{t}$ events with the ATLAS detector at $\sqrt{s}=13 \text{ TeV}$ ». *European Physical Journal C* 83.6, 518 (juin 2023), p. 518. DOI : [10.1140/epjc/s10052-023-11479-x](https://doi.org/10.1140/epjc/s10052-023-11479-x). arXiv : [2209.07874](https://arxiv.org/abs/2209.07874) [hep-ex].
- [14] G. Aad, B. Abbott, D. C. Abbott et al. « Observation of gauge boson joint-polarisation states in $W^\pm Z$ production from pp collisions at $\sqrt{s} = 13 \text{ TeV}$ with the ATLAS detector ». *Physics Letters B* 843, 137895 (août 2023), p. 137895. DOI : [10.1016/j.physletb.2023.137895](https://doi.org/10.1016/j.physletb.2023.137895). arXiv : [2211.09435](https://arxiv.org/abs/2211.09435) [hep-ex].
- [15] G. Aad, B. Abbott, D. C. Abbott et al. « Observation of $W W W$ Production in pp Collisions at $\sqrt{s}=13 \text{ TeV}$ with the ATLAS Detector ». *Phys. Rev. Lett.* 129.6, 061803 (août 2022), p. 061803. DOI : [10.1103/PhysRevLett.129.061803](https://doi.org/10.1103/PhysRevLett.129.061803). arXiv : [2201.13045](https://arxiv.org/abs/2201.13045) [hep-ex].
- [16] G. Aad, B. Abbott, D. C. Abbott et al. « Performance of the ATLAS Level-1 topological trigger in Run 2 ». *European Physical Journal C* 82.1, 7 (jan. 2022), p. 7. DOI : [10.1140/epjc/s10052-021-09807-0](https://doi.org/10.1140/epjc/s10052-021-09807-0). arXiv : [2105.01416](https://arxiv.org/abs/2105.01416) [hep-ex].
- [17] G. Aad, B. Abbott, D. C. Abbott et al. « Search for dark matter produced in association with a single top quark and an energetic W boson in $\sqrt{s}=13 \text{ TeV}$ pp collisions with the ATLAS detector ». *European Physical Journal C* 83.7, 603 (juill. 2023), p. 603. DOI : [10.1140/epjc/s10052-023-11582-z](https://doi.org/10.1140/epjc/s10052-023-11582-z). arXiv : [2211.13138](https://arxiv.org/abs/2211.13138) [hep-ex].
- [18] G. Aad, B. Abbott, D. C. Abbott et al. « Search for displaced photons produced in exotic decays of the Higgs boson using 13 TeV pp collisions with the ATLAS detector ». *Phys. Rev. D* 108.3, 032016 (août 2023), p. 032016. DOI : [10.1103/PhysRevD.108.032016](https://doi.org/10.1103/PhysRevD.108.032016). arXiv : [2209.01029](https://arxiv.org/abs/2209.01029) [hep-ex].

- [19] G. Aad, B. Abbott, D. C. Abbott et al. « Search for events with a pair of displaced vertices from long-lived neutral particles decaying into hadronic jets in the ATLAS muon spectrometer in pp collisions at $\sqrt{s}=13$ TeV ». *Phys. Rev. D* 106.3, 032005 (août 2022), p. 032005. DOI : [10.1103/PhysRevD.106.032005](https://doi.org/10.1103/PhysRevD.106.032005). arXiv : [2203.00587](https://arxiv.org/abs/2203.00587) [hep-ex].
- [20] G. Aad, B. Abbott, D. C. Abbott et al. « Search for flavor-changing neutral-current couplings between the top quark and the Z boson with proton-proton collisions at $\sqrt{s}=13$ TeV with the ATLAS detector ». *Phys. Rev. D* 108.3, 032019 (août 2023), p. 032019. DOI : [10.1103/PhysRevD.108.032019](https://doi.org/10.1103/PhysRevD.108.032019). arXiv : [2301.11605](https://arxiv.org/abs/2301.11605) [hep-ex].
- [21] G. Aad, B. Abbott, D. C. Abbott et al. « Search for heavy particles in the b -tagged dijet mass distribution with additional b -tagged jets in proton-proton collisions at $\sqrt{s}=13$ TeV with the ATLAS experiment ». *Phys. Rev. D* 105.1, 012001 (jan. 2022), p. 012001. DOI : [10.1103/PhysRevD.105.012001](https://doi.org/10.1103/PhysRevD.105.012001). arXiv : [2108.09059](https://arxiv.org/abs/2108.09059) [hep-ex].
- [22] G. Aad, B. Abbott, D. C. Abbott et al. « Search for Higgs boson decays into a pair of pseudoscalar particles in the $b\bar{b}\mu\mu$ final state with the ATLAS detector in pp collisions at $\sqrt{s}=13$ TeV ». *Phys. Rev. D* 105.1, 012006 (jan. 2022), p. 012006. DOI : [10.1103/PhysRevD.105.012006](https://doi.org/10.1103/PhysRevD.105.012006).
- [23] G. Aad, B. Abbott, D. C. Abbott et al. « Search for Higgs boson pair production in the two bottom quarks plus two photons final state in pp collisions at $\sqrt{s}=13$ TeV with the ATLAS detector ». *Phys. Rev. D* 106.5, 052001 (sept. 2022), p. 052001. DOI : [10.1103/PhysRevD.106.052001](https://doi.org/10.1103/PhysRevD.106.052001). arXiv : [2204.03264](https://arxiv.org/abs/2204.03264) [physics.data-an].
- [24] G. Aad, B. Abbott, D. C. Abbott et al. « Search for long-lived charginos based on a disappearing-track signature using 136 fb^{-1} of pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector ». *European Physical Journal C* 82.7, 606 (juill. 2022), p. 606. DOI : [10.1140/epjc/s10052-022-10489-5](https://doi.org/10.1140/epjc/s10052-022-10489-5). arXiv : [2201.02472](https://arxiv.org/abs/2201.02472) [hep-ex].
- [25] G. Aad, B. Abbott, D. C. Abbott et al. « Search for new phenomena in three- or four-lepton events in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector ». *Physics Letters B* 824, 136832 (jan. 2022), p. 136832. DOI : [10.1016/j.physletb.2021.136832](https://doi.org/10.1016/j.physletb.2021.136832). arXiv : [2107.00404](https://arxiv.org/abs/2107.00404) [hep-ex].
- [26] G. Aad, B. Abbott, D. C. Abbott et al. « Search for resonant pair production of Higgs bosons in the $b\bar{b}b\bar{b}$ final state using pp collisions at $\sqrt{s}=13$ TeV with the ATLAS detector ». *Phys. Rev. D* 105.9, 092002 (mai 2022), p. 092002. DOI : [10.1103/PhysRevD.105.092002](https://doi.org/10.1103/PhysRevD.105.092002). arXiv : [2202.07288](https://arxiv.org/abs/2202.07288) [hep-ex].
- [27] G. Aad, B. Abbott, D. C. Abbott et al. « Search for single production of a vectorlike T quark decaying into a Higgs boson and top quark with fully hadronic final states using the ATLAS detector ». *Phys. Rev. D* 105.9, 092012 (mai 2022), p. 092012. DOI : [10.1103/PhysRevD.105.092012](https://doi.org/10.1103/PhysRevD.105.092012). arXiv : [2201.07045](https://arxiv.org/abs/2201.07045) [hep-ex].
- [28] G. Aad, B. Abbott, D. C. Abbott et al. « Search in diphoton and dielectron final states for displaced production of Higgs or Z bosons with the ATLAS detector in $\sqrt{s}=13$ TeV pp collisions ». *Phys. Rev. D* 108.1, 012012 (juill. 2023), p. 012012. DOI : [10.1103/PhysRevD.108.012012](https://doi.org/10.1103/PhysRevD.108.012012). arXiv : [2304.12885](https://arxiv.org/abs/2304.12885) [hep-ex].

- [29] G. Aad, B. Abbott, D. C. Abbott et al. « Tools for estimating fake/non-prompt lepton backgrounds with the ATLAS detector at the LHC ». *Journal of Instrumentation* 18.11, T11004 (nov. 2023), T11004. DOI : [10.1088/1748-0221/18/11/T11004](https://doi.org/10.1088/1748-0221/18/11/T11004). arXiv : [2211.16178](https://arxiv.org/abs/2211.16178) [hep-ex].
- [30] G. Aad, B. Abbott, K. Abeling et al. « Combination of searches for invisible decays of the Higgs boson using 139 fb⁻¹ of proton-proton collision data at $\sqrt{s} = 13$ TeV collected with the ATLAS experiment ». *Physics Letters B* 842, 137963 (juill. 2023), p. 137963. DOI : [10.1016/j.physletb.2023.137963](https://doi.org/10.1016/j.physletb.2023.137963).
- [31] G. Aad, B. Abbott, K. Abeling et al. « Integrated and differential fiducial cross-section measurements for the vector boson fusion production of the Higgs boson in the $H \rightarrow W W^* \rightarrow e \nu \mu \nu$ decay channel at 13 TeV with the ATLAS detector ». *Phys. Rev. D* 108.7, 072003 (oct. 2023), p. 072003. DOI : [10.1103/PhysRevD.108.072003](https://doi.org/10.1103/PhysRevD.108.072003). arXiv : [2304.03053](https://arxiv.org/abs/2304.03053) [hep-ex].
- [32] G. Aad, B. Abbott, K. Abeling et al. « Luminosity determination in pp collisions at $\sqrt{s}=13$ TeV using the ATLAS detector at the LHC ». *European Physical Journal C* 83.10, 982 (oct. 2023), p. 982. DOI : [10.1140/epjc/s10052-023-11747-w](https://doi.org/10.1140/epjc/s10052-023-11747-w). arXiv : [2212.09379](https://arxiv.org/abs/2212.09379) [hep-ex].
- [33] G. Aad, B. Abbott, K. Abeling et al. « Measurement of Suppression of Large-Radius Jets and Its Dependence on Substructure in Pb +Pb Collisions at $\sqrt{s_{NN}}=5.02$ TeV with the ATLAS Detector ». *Phys. Rev. Lett.* 131.17, 172301 (oct. 2023), p. 172301. DOI : [10.1103/PhysRevLett.131.172301](https://doi.org/10.1103/PhysRevLett.131.172301). arXiv : [2301.05606](https://arxiv.org/abs/2301.05606) [nucl-ex].
- [34] G. Aad, B. Abbott, K. Abeling et al. « Measurement of the production of a W boson in association with a charmed hadron in pp collisions at $\sqrt{s}=13$ TeV with the ATLAS detector ». *Phys. Rev. D* 108.3, 032012 (août 2023), p. 032012. DOI : [10.1103/PhysRevD.108.032012](https://doi.org/10.1103/PhysRevD.108.032012). arXiv : [2302.00336](https://arxiv.org/abs/2302.00336) [hep-ex].
- [35] G. Aad, B. Abbott, K. Abeling et al. « Measurements of differential cross sections of Higgs boson production through gluon fusion in the $H \rightarrow W W^* \rightarrow e \nu \mu \nu$ final state at $\sqrt{s}=13$ TeV with the ATLAS detector ». *European Physical Journal C* 83.9, 774 (sept. 2023), p. 774. DOI : [10.1140/epjc/s10052-023-11873-5](https://doi.org/10.1140/epjc/s10052-023-11873-5). arXiv : [2301.06822](https://arxiv.org/abs/2301.06822) [hep-ex].
- [36] G. Aad, B. Abbott, K. Abeling et al. « New techniques for jet calibration with the ATLAS detector ». *European Physical Journal C* 83.8, 761 (août 2023), p. 761. DOI : [10.1140/epjc/s10052-023-11837-9](https://doi.org/10.1140/epjc/s10052-023-11837-9). arXiv : [2303.17312](https://arxiv.org/abs/2303.17312) [hep-ex].
- [37] G. Aad, B. Abbott, K. Abeling et al. « Observation of an Excess of Dicharmonium Events in the Four-Muon Final State with the ATLAS Detector ». *Phys. Rev. Lett.* 131.15, 151902 (oct. 2023), p. 151902. DOI : [10.1103/PhysRevLett.131.151902](https://doi.org/10.1103/PhysRevLett.131.151902). arXiv : [2304.08962](https://arxiv.org/abs/2304.08962) [hep-ex].
- [38] G. Aad, B. Abbott, K. Abeling et al. « Pursuit of paired dijet resonances in the Run 2 dataset with ATLAS ». *Phys. Rev. D* 108.11, 112005 (déc. 2023), p. 112005. DOI : [10.1103/PhysRevD.108.112005](https://doi.org/10.1103/PhysRevD.108.112005). arXiv : [2307.14944](https://arxiv.org/abs/2307.14944) [hep-ex].
- [39] G. Aad, B. Abbott, K. Abeling et al. « Search for a new pseudoscalar decaying into a pair of muons in events with a top-quark pair at $\sqrt{s}=13$ TeV with the ATLAS detector ». *Phys. Rev. D* 108.9, 092007 (nov. 2023), p. 092007. DOI : [10.1103/PhysRevD.108.092007](https://doi.org/10.1103/PhysRevD.108.092007). arXiv : [2304.14247](https://arxiv.org/abs/2304.14247) [hep-ex].

- [40] G. Aad, B. Abbott, K. Abeling et al. « Search for exclusive Higgs and Z boson decays to $\omega\gamma$ and Higgs boson decays to $K^*\gamma$ with the ATLAS detector ». *Physics Letters B* 847, 138292 (déc. 2023), p. 138292. DOI : [10.1016/j.physletb.2023.138292](https://doi.org/10.1016/j.physletb.2023.138292). arXiv : [2301.09938](https://arxiv.org/abs/2301.09938) [hep-ex].
- [41] G. Aad, B. Abbott, K. Abeling et al. « Search for nonresonant pair production of Higgs bosons in the $b\bar{b}b\bar{b}$ final state in pp collisions at $\sqrt{s}=13$ TeV with the ATLAS detector ». *Phys. Rev. D* 108.5, 052003 (sept. 2023), p. 052003. DOI : [10.1103/PhysRevD.108.052003](https://doi.org/10.1103/PhysRevD.108.052003). arXiv : [2301.03212](https://arxiv.org/abs/2301.03212) [hep-ex].
- [42] G. Aad, B. Abbott, K. Abeling et al. « Studies of the muon momentum calibration and performance of the ATLAS detector with pp collisions at $\sqrt{s}=13$ TeV ». *European Physical Journal C* 83.8, 686 (août 2023), p. 686. DOI : [10.1140/epjc/s10052-023-11584-x](https://doi.org/10.1140/epjc/s10052-023-11584-x). arXiv : [2212.07338](https://arxiv.org/abs/2212.07338) [hep-ex].
- [43] Georges Aad et al. « Constraints on Higgs boson production with large transverse momentum using $H\rightarrow b\bar{b}$ decays in the ATLAS detector ». *Phys. Rev. D* 105.9 (2022), p. 092003. DOI : [10.1103/PhysRevD.105.092003](https://doi.org/10.1103/PhysRevD.105.092003). arXiv : [2111.08340](https://arxiv.org/abs/2111.08340) [hep-ex].
- [44] Georges Aad, Brad Abbott, Dale Charles Abbott et al. « Operation and performance of the ATLAS semiconductor tracker in LHC Run 2 ». *Journal of Instrumentation* 17.1, P01013 (jan. 2022), P01013. DOI : [10.1088/1748-0221/17/01/P01013](https://doi.org/10.1088/1748-0221/17/01/P01013). arXiv : [2109.02591](https://arxiv.org/abs/2109.02591) [physics.ins-det].
- [45] C. Agapopoulou, S. Alderweireldt, S. Ali et al. « Performance in beam tests of irradiated Low Gain Avalanche Detectors for the ATLAS High Granularity Timing Detector ». *Journal of Instrumentation* 17.9, P09026 (sept. 2022), P09026. DOI : [10.1088/1748-0221/17/09/P09026](https://doi.org/10.1088/1748-0221/17/09/P09026).
- [46] C. Agapopoulou, L. A. Beresford, D. E. Boumediene et al. « Performance of a front-end prototype ASIC for the ATLAS High Granularity timing detector ». *Journal of Instrumentation* 18.8, P08019 (août 2023), P08019. DOI : [10.1088/1748-0221/18/08/P08019](https://doi.org/10.1088/1748-0221/18/08/P08019). arXiv : [2306.08949](https://arxiv.org/abs/2306.08949) [physics.ins-det].
- [47] S. Ali, H. Arnold, S. L. Auwens et al. « Performance in beam tests of carbon-enriched irradiated Low Gain Avalanche Detectors for the ATLAS High Granularity Timing Detector ». *Journal of Instrumentation* 18.5, P05005 (mai 2023), P05005. DOI : [10.1088/1748-0221/18/05/P05005](https://doi.org/10.1088/1748-0221/18/05/P05005). arXiv : [2303.07728](https://arxiv.org/abs/2303.07728) [physics.ins-det].
- [48] S. Amoroso, A. Apyan, N. Armesto et al. « Snowmass 2021 whitepaper : Proton structure at the precision frontier ». *arXiv e-prints* (mars 2022). arXiv : [2203.13923](https://arxiv.org/abs/2203.13923) [hep-ph].
- [49] M. V. Araújo, M. Begalli, W. S. Freund et al. « Lorenzetti Showers - A general-purpose framework for supporting signal reconstruction and triggering with calorimeters ». *Computer Physics Communications* 286, 108671 (mai 2023), p. 108671. DOI : [10.1016/j.cpc.2023.108671](https://doi.org/10.1016/j.cpc.2023.108671).
- [50] Miguel Arratia, Anja Butter, Mario Campanelli et al. « Publishing unbinned differential cross section results ». *Journal of Instrumentation* 17.1, P01024 (jan. 2022), P01024. DOI : [10.1088/1748-0221/17/01/P01024](https://doi.org/10.1088/1748-0221/17/01/P01024). arXiv : [2109.13243](https://arxiv.org/abs/2109.13243) [hep-ph].

- [51] W. J. Ashmanskas et al. « Verification of simulated ASIC functionality and radiation tolerance for the HL-LHC ATLAS ITk Strip Detector ». *JINST* 18.01 (2023), p. C01029. DOI : [10.1088/1748-0221/18/01/C01029](https://doi.org/10.1088/1748-0221/18/01/C01029).
- [52] ATLAS Collaboration. « A precise determination of the strong-coupling constant from the recoil of Z bosons with the ATLAS experiment at $\sqrt{s} = 8$ TeV ». *arXiv e-prints* (sept. 2023). arXiv : [2309.12986](https://arxiv.org/abs/2309.12986) [[hep-ex](#)].
- [53] ATLAS Collaboration. « 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 ». *arXiv e-prints* (juin 2023). arXiv : [2306.00641](https://arxiv.org/abs/2306.00641) [[hep-ex](#)].
- [54] ATLAS Collaboration. « Combination of searches for invisible decays of the Higgs boson using 139 fb^{-1} of proton-proton collision data at $\sqrt{s} = 13$ TeV collected with the ATLAS experiment ». *arXiv e-prints* (jan. 2023). arXiv : [2301.10731](https://arxiv.org/abs/2301.10731) [[hep-ex](#)].
- [55] ATLAS Collaboration. « Correlations between flow and transverse momentum in Xe+Xe and Pb+Pb collisions at the LHC with the ATLAS detector : a probe of the heavy-ion initial state and nuclear deformation ». *arXiv e-prints* (avr. 2022). arXiv : [2205.00039](https://arxiv.org/abs/2205.00039) [[nucl-ex](#)].
- [56] ATLAS Collaboration. « Determination of the strong coupling constant from transverse energy–energy correlations in multijet events at $\sqrt{s} = 13$ TeV with the ATLAS detector ». *arXiv e-prints* (jan. 2023). arXiv : [2301.09351](https://arxiv.org/abs/2301.09351) [[hep-ex](#)].
- [57] ATLAS Collaboration. « Electron and photon efficiencies in LHC Run 2 with the ATLAS experiment ». *arXiv e-prints* (août 2023). arXiv : [2308.13362](https://arxiv.org/abs/2308.13362) [[hep-ex](#)].
- [58] ATLAS Collaboration. « Improving topological cluster reconstruction using calorimeter cell timing in ATLAS ». *arXiv e-prints* (oct. 2023). arXiv : [2310.16497](https://arxiv.org/abs/2310.16497) [[physics.ins-det](#)].
- [59] ATLAS Collaboration. « Inclusive-photon production and its dependence on photon isolation in pp collisions at $\sqrt{s} = 13$ TeV using 139 fb^{-1} of ATLAS data ». *arXiv e-prints* (fév. 2023). arXiv : [2302.00510](https://arxiv.org/abs/2302.00510) [[hep-ex](#)].
- [60] ATLAS Collaboration. « Measurement of exclusive pion pair production in proton-proton collisions at $\sqrt{s} = 7$ TeV with the ATLAS detector ». *arXiv e-prints* (déc. 2022). arXiv : [2212.00664](https://arxiv.org/abs/2212.00664) [[hep-ex](#)].
- [61] ATLAS Collaboration. « Measurement of the properties of Higgs boson production at $\sqrt{s} = 13$ TeV in the $H \rightarrow \gamma\gamma$ channel using 139 fb^{-1} of pp collision data with the ATLAS experiment ». *arXiv e-prints* (juill. 2022). arXiv : [2207.00348](https://arxiv.org/abs/2207.00348) [[hep-ex](#)].
- [62] ATLAS Collaboration. « Measurement of the Z boson invisible width at $\sqrt{s} = 13$ TeV with the ATLAS detector ». *arXiv e-prints* (déc. 2023). arXiv : [2312.02789](https://arxiv.org/abs/2312.02789) [[hep-ex](#)].
- [63] ATLAS Collaboration. « Model-independent search for the presence of new physics in events including $H \rightarrow \gamma\gamma$ with $\sqrt{s} = 13$ TeV pp data recorded by the ATLAS detector at the LHC ». *arXiv e-prints* (jan. 2023). arXiv : [2301.10486](https://arxiv.org/abs/2301.10486) [[hep-ex](#)].
- [64] ATLAS Collaboration. « Performance of the reconstruction of large impact parameter tracks in the inner detector of ATLAS ». *arXiv e-prints* (avr. 2023). arXiv : [2304.12867](https://arxiv.org/abs/2304.12867) [[hep-ex](#)].

- [65] ATLAS Collaboration. « Performance of the reconstruction of large impact parameter tracks in the inner detector of ATLAS ». *European Physical Journal C* 83.11, 1081 (nov. 2023), p. 1081. DOI : [10.1140/epjc/s10052-023-12024-6](https://doi.org/10.1140/epjc/s10052-023-12024-6).
- [66] ATLAS Collaboration. « Search for a light charged Higgs boson in $t \rightarrow H^\pm b$ decays, with $H^\pm \rightarrow cb$, in the lepton+jets final state in proton-proton collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector ». *arXiv e-prints* (fév. 2023). arXiv : [2302.11739](https://arxiv.org/abs/2302.11739) [hep-ex].
- [67] ATLAS Collaboration. « Search for a new scalar resonance in flavour-changing neutral-current top-quark decays $t \rightarrow qX$ ($q = u, c$), with $X \rightarrow b\bar{b}$, in proton-proton collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector ». *arXiv e-prints* (jan. 2023). arXiv : [2301.03902](https://arxiv.org/abs/2301.03902) [hep-ex].
- [68] ATLAS Collaboration. « Search for a new Z' gauge boson in 4μ events with the ATLAS experiment ». *arXiv e-prints* (jan. 2023). arXiv : [2301.09342](https://arxiv.org/abs/2301.09342) [hep-ex].
- [69] ATLAS Collaboration. « Search for direct production of electroweakinos in final states with one lepton, jets and missing transverse momentum in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector ». *arXiv e-prints* (oct. 2023). arXiv : [2310.08171](https://arxiv.org/abs/2310.08171) [hep-ex].
- [70] ATLAS Collaboration. « Search for direct production of winos and higgsinos in events with two same-charge leptons or three leptons in pp collision data at $\sqrt{s} = 13$ TeV with the ATLAS detector ». *arXiv e-prints* (mai 2023). arXiv : [2305.09322](https://arxiv.org/abs/2305.09322) [hep-ex].
- [71] ATLAS Collaboration. « Search for heavy resonances decaying into a Z or W boson and a Higgs boson in final states with leptons and b -jets in 139 fb^{-1} of pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector ». *arXiv e-prints* (juill. 2022). arXiv : [2207.00230](https://arxiv.org/abs/2207.00230) [hep-ex].
- [72] ATLAS Collaboration. « Search for leptonic charge asymmetry in $t\bar{t}W$ production in final states with three leptons at $\sqrt{s} = 13$ TeV ». *arXiv e-prints* (jan. 2023). arXiv : [2301.04245](https://arxiv.org/abs/2301.04245) [hep-ex].
- [73] ATLAS Collaboration. « Search for long-lived, massive particles in events with displaced vertices and multiple jets in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector ». *arXiv e-prints* (jan. 2023). arXiv : [2301.13866](https://arxiv.org/abs/2301.13866) [hep-ex].
- [74] ATLAS Collaboration. « Search for singly produced vector-like top partners in multilepton final states with 139 fb^{-1} of pp collision data at $\sqrt{s} = 13$ TeV with the ATLAS detector ». *arXiv e-prints* (juill. 2023). arXiv : [2307.07584](https://arxiv.org/abs/2307.07584) [hep-ex].
- [75] ATLAS Collaboration. « Study of high-momentum Higgs boson production in association with a vector boson in the $qqbb$ final state with the ATLAS detector ». *arXiv e-prints* (déc. 2023). arXiv : [2312.07605](https://arxiv.org/abs/2312.07605) [hep-ex].
- [76] ATLAS Collaboration. « The ATLAS Experiment at the CERN Large Hadron Collider : A Description of the Detector Configuration for Run 3 ». *arXiv e-prints* (mai 2023). arXiv : [2305.16623](https://arxiv.org/abs/2305.16623) [physics.ins-det].
- [77] ATLAS Collaboration, G. Aad, B. Abbott et al. « Determination of the strong coupling constant from transverse energy-energy correlations in multijet events at $\sqrt{s} = 13$ TeV with the ATLAS detector ». *Journal of High Energy Physics* 2023.7, 85 (juill. 2023), p. 85. DOI : [10.1007/JHEP07\(2023\)085](https://doi.org/10.1007/JHEP07(2023)085).

- [78] ATLAS Collaboration, G. Aad, B. Abbott et al. « Inclusive-photon production and its dependence on photon isolation in pp collisions at $\sqrt{s} = 13$ TeV using 139 fb^{-1} of ATLAS data ». *Journal of High Energy Physics* 2023.7, 86 (juill. 2023), p. 86. DOI : [10.1007/JHEP07\(2023\)086](https://doi.org/10.1007/JHEP07(2023)086).
- [79] ATLAS Collaboration, G. Aad, B. Abbott et al. « Measurement of the properties of Higgs boson production at $\sqrt{s} = 13$ TeV in the $H \rightarrow \gamma\gamma$ channel using 139 fb^{-1} of pp collision data with the ATLAS experiment ». *Journal of High Energy Physics* 2023.7, 88 (juill. 2023), p. 88. DOI : [10.1007/JHEP07\(2023\)088](https://doi.org/10.1007/JHEP07(2023)088).
- [80] ATLAS Collaboration, G. Aad, B. Abbott et al. « Measurement of the top-quark mass using a leptonic invariant mass in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector ». *Journal of High Energy Physics* 2023.6, 19 (juin 2023), p. 19. DOI : [10.1007/JHEP06\(2023\)019](https://doi.org/10.1007/JHEP06(2023)019). arXiv : [2209.00583](https://arxiv.org/abs/2209.00583) [hep-ex].
- [81] ATLAS Collaboration, G. Aad, B. Abbott et al. « Measurements of Higgs boson production cross-sections in the $H \rightarrow \tau^+\tau^-$ decay channel in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector ». *Journal of High Energy Physics* 2022.8, 175 (août 2022), p. 175. DOI : [10.1007/JHEP08\(2022\)175](https://doi.org/10.1007/JHEP08(2022)175). arXiv : [2201.08269](https://arxiv.org/abs/2201.08269) [hep-ex].
- [82] ATLAS Collaboration, G. Aad, B. Abbott et al. « Measurements of the Higgs boson inclusive and differential fiducial cross-sections in the diphoton decay channel with pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector ». *Journal of High Energy Physics* 2022.8, 27 (août 2022), p. 27. DOI : [10.1007/JHEP08\(2022\)027](https://doi.org/10.1007/JHEP08(2022)027). arXiv : [2202.00487](https://arxiv.org/abs/2202.00487) [hep-ex].
- [83] ATLAS Collaboration, G. Aad, B. Abbott et al. « Model-independent search for the presence of new physics in events including $H \rightarrow \gamma\gamma$ with $\sqrt{s} = 13$ TeV pp data recorded by the ATLAS detector at the LHC ». *Journal of High Energy Physics* 2023.7, 176 (juill. 2023), p. 176. DOI : [10.1007/JHEP07\(2023\)176](https://doi.org/10.1007/JHEP07(2023)176).
- [84] ATLAS Collaboration, G. Aad, B. Abbott et al. « Modelling and computational improvements to the simulation of single vector-boson plus jet processes for the ATLAS experiment ». *Journal of High Energy Physics* 2022.8, 89 (août 2022), p. 89. DOI : [10.1007/JHEP08\(2022\)089](https://doi.org/10.1007/JHEP08(2022)089). arXiv : [2112.09588](https://arxiv.org/abs/2112.09588) [hep-ex].
- [85] ATLAS Collaboration, G. Aad, B. Abbott et al. « Search for a light charged Higgs boson in $t \rightarrow H^\pm b$ decays, with $H^\pm \rightarrow cb$, in the lepton+jets final state in proton-proton collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector ». *Journal of High Energy Physics* 2023.9, 4 (sept. 2023), p. 4. DOI : [10.1007/JHEP09\(2023\)004](https://doi.org/10.1007/JHEP09(2023)004).
- [86] ATLAS Collaboration, G. Aad, B. Abbott et al. « Search for a new scalar resonance in flavour-changing neutral-current top-quark decays $t \rightarrow qX$ ($q = u, c$), with $X \rightarrow b\bar{b}$, in proton-proton collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector ». *Journal of High Energy Physics* 2023.7, 199 (juill. 2023), p. 199. DOI : [10.1007/JHEP07\(2023\)199](https://doi.org/10.1007/JHEP07(2023)199).
- [87] ATLAS Collaboration, G. Aad, B. Abbott et al. « Search for a new Z' gauge boson in 4μ events with the ATLAS experiment ». *Journal of High Energy Physics* 2023.7, 90 (juill. 2023), p. 90. DOI : [10.1007/JHEP07\(2023\)090](https://doi.org/10.1007/JHEP07(2023)090).

- [88] ATLAS Collaboration, G. Aad, B. Abbott et al. « Search for boosted diphoton resonances in the 10 to 70 GeV mass range using 138 fb^{-1} of 13 TeV pp collisions with the ATLAS detector ». *Journal of High Energy Physics* 2023.7, 155 (juill. 2023), p. 155. DOI : [10.1007/JHEP07\(2023\)155](https://doi.org/10.1007/JHEP07(2023)155).
- [89] ATLAS Collaboration, G. Aad, B. Abbott et al. « Search for heavy resonances decaying into a Z or W boson and a Higgs boson in final states with leptons and b-jets in 139 fb^{-1} of pp collisions at $\sqrt{s} = 13 \text{ TeV}$ with the ATLAS detector ». *Journal of High Energy Physics* 2023.6, 16 (juin 2023), p. 16. DOI : [10.1007/JHEP06\(2023\)016](https://doi.org/10.1007/JHEP06(2023)016).
- [90] ATLAS Collaboration, G. Aad, B. Abbott et al. « Search for leptonic charge asymmetry in $t\bar{t}W$ production in final states with three leptons at $\sqrt{s} = 13 \text{ TeV}$ ». *Journal of High Energy Physics* 2023.7, 33 (juill. 2023), p. 33. DOI : [10.1007/JHEP07\(2023\)033](https://doi.org/10.1007/JHEP07(2023)033).
- [91] ATLAS Collaboration, G. Aad, B. Abbott et al. « Search for long-lived, massive particles in events with displaced vertices and multiple jets in pp collisions at $\sqrt{s} = 13 \text{ TeV}$ with the ATLAS detector ». *Journal of High Energy Physics* 2023.6, 200 (juill. 2023), p. 200. DOI : [10.1007/JHEP06\(2023\)200](https://doi.org/10.1007/JHEP06(2023)200).
- [92] ATLAS Collaboration, G. Aad, B. Abbott et al. « Search for neutral long-lived particles in pp collisions at $\sqrt{s} = 13 \text{ TeV}$ that decay into displaced hadronic jets in the ATLAS calorimeter ». *Journal of High Energy Physics* 2022.6, 5 (juin 2022), p. 5. DOI : [10.1007/JHEP06\(2022\)005](https://doi.org/10.1007/JHEP06(2022)005). arXiv : [2203.01009](https://arxiv.org/abs/2203.01009) [hep-ex].
- [93] G. ATLAS Collaboration Aad, B. Abbott, D. C. Abbott et al. « Search for exotic decays of the Higgs boson into $b\bar{b}$ and missing transverse momentum in pp collisions at $\sqrt{s} = 13 \text{ TeV}$ with the ATLAS detector ». *Journal of High Energy Physics* 2022.1, 63 (jan. 2022), p. 63. DOI : [10.1007/JHEP01\(2022\)063](https://doi.org/10.1007/JHEP01(2022)063). arXiv : [2109.02447](https://arxiv.org/abs/2109.02447) [hep-ex].
- [94] Mathias Backes, Anja Butter, Monica Dunford et al. « An unfolding method based on conditional Invertible Neural Networks (cINN) using iterative training ». *arXiv e-prints* (déc. 2022). arXiv : [2212.08674](https://arxiv.org/abs/2212.08674) [hep-ph].
- [95] Mathias Backes, Anja Butter, Monica Dunford et al. « Event-by-event Comparison between Machine-Learning- and Transfer-Matrix-based Unfolding Methods ». *arXiv e-prints* (oct. 2023). arXiv : [2310.17037](https://arxiv.org/abs/2310.17037) [physics.data-an].
- [96] Simon Badger, Anja Butter, Michel Luchmann et al. « Loop amplitudes from precision networks ». *SciPost Phys. Core* 6 (2023), p. 034. DOI : [10.21468/SciPostPhysCore.6.2.034](https://doi.org/10.21468/SciPostPhysCore.6.2.034). arXiv : [2206.14831](https://arxiv.org/abs/2206.14831) [hep-ph].
- [97] J. K. Behr, ATLAS et CMS Collaborations. « Searches for Dark Matter with the ATLAS and CMS Experiments using LHC Run 2 (2015-2018) Data ». *Particles and Nuclei International Conference 2021*. Avr. 2022, 137, p. 137. DOI : [10.22323/1.380.0137](https://doi.org/10.22323/1.380.0137).
- [98] L. A. Beresford, D. E. Boumediene, L. Castillo García et al. « Destructive breakdown studies of irradiated LGADs at beam tests for the ATLAS HGTD ». *Journal of Instrumentation* 18.7, P07030 (juill. 2023), P07030. DOI : [10.1088/1748-0221/18/07/P07030](https://doi.org/10.1088/1748-0221/18/07/P07030). arXiv : [2306.12269](https://arxiv.org/abs/2306.12269) [physics.ins-det].

- [99] Volodymyr Biloshytskyi, Vladimir Pascalutsa, Lucian Harland-Lang et al. « Two-photon decay of $X(6900)$ from light-by-light scattering at the LHC ». *Phys. Rev. D* 106.11, L111902 (déc. 2022), p. L111902. DOI : [10.1103/PhysRevD.106.L111902](https://doi.org/10.1103/PhysRevD.106.L111902). arXiv : [2207.13623](https://arxiv.org/abs/2207.13623) [hep-ph].
- [100] T. Bisanz et ATLAS Collaboration. « Operational Experience and Performance with the ATLAS Pixel Detector at the Large Hadron Collider at CERN ». *European Physical Society Conference on High Energy Physics*. Jan. 2022, 819, p. 819. DOI : [10.22323/1.398.0819](https://doi.org/10.22323/1.398.0819).
- [101] Anja Butter, Theo Heimel, Till Martini et al. « Two invertible networks for the matrix element method ». *SciPost Physics* 15.3, 094 (sept. 2023), p. 094. DOI : [10.21468/SciPostPhys.15.3.094](https://doi.org/10.21468/SciPostPhys.15.3.094). arXiv : [2210.00019](https://arxiv.org/abs/2210.00019) [hep-ph].
- [102] Anja Butter, Nathan Huetsch, Sofia Palacios Schweitzer et al. « Jet Diffusion versus JetGPT – Modern Networks for the LHC ». *arXiv e-prints* (mai 2023). arXiv : [2305.10475](https://arxiv.org/abs/2305.10475) [hep-ph].
- [103] Anja Butter, Tomas Jezo, Michael Klasen et al. « Kicking it Off(-shell) with Direct Diffusion ». *arXiv e-prints* (nov. 2023). arXiv : [2311.17175](https://arxiv.org/abs/2311.17175) [hep-ph].
- [104] Anja Butter, Michael Krämer, Silvia Manconi et al. « Searching for dark matter subhalos in the Fermi-LAT catalog with Bayesian neural networks ». *J. Cosmology Astropart. Phys.* 2023.7, 033 (juill. 2023), p. 033. DOI : [10.1088/1475-7516/2023/07/033](https://doi.org/10.1088/1475-7516/2023/07/033). arXiv : [2304.00032](https://arxiv.org/abs/2304.00032) [astro-ph.HE].
- [105] Anja Butter, Tilman Plehn, Steffen Schumann et al. « Machine learning and LHC event generation ». *SciPost Physics* 14.4, 079 (avr. 2023), p. 079. DOI : [10.21468/SciPostPhys.14.4.079](https://doi.org/10.21468/SciPostPhys.14.4.079). arXiv : [2203.07460](https://arxiv.org/abs/2203.07460) [hep-ph].
- [106] Huacheng Cai. « ATLAS LAr Calorimeter Commissioning for LHC Run-3 ». *PoS ICHEP2022* (2023), p. 667. DOI : [10.22323/1.414.0667](https://doi.org/10.22323/1.414.0667).
- [107] G. Calderini et al. « Qualification of the first pre-production 3D FBK sensors with ITkPixV1 readout chip ». *PoS Pixel2022* (2023), p. 025. DOI : [10.22323/1.420.0025](https://doi.org/10.22323/1.420.0025).
- [108] G. Calderini, F. Crescioli, G. -F. Dalla Betta et al. « Test of ITk 3D sensor pre-production modules with ITkPixV1.1 chip ». *Journal of Instrumentation* 18.1, C01010 (jan. 2023), p. C01010. DOI : [10.1088/1748-0221/18/01/C01010](https://doi.org/10.1088/1748-0221/18/01/C01010).
- [109] Giovanni Calderini et Atlas Collaboration. « The ATLAS ITk detector for High Luminosity LHC upgrade ». *Nuclear Instruments and Methods in Physics Research A* 1040, 167048 (oct. 2022), p. 167048. DOI : [10.1016/j.nima.2022.167048](https://doi.org/10.1016/j.nima.2022.167048).
- [110] G. Carratta et ATLAS Collaboration. « Search for Type-III SeeSaw heavy leptons in leptonic final states in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector ». *Particles and Nuclei International Conference 2021*. Avr. 2022, 139, p. 139. DOI : [10.22323/1.380.0139](https://doi.org/10.22323/1.380.0139).
- [111] F. Carrio. « The Data Acquisition System for the ATLAS Tile Calorimeter Phase-II Upgrade Demonstrator ». *IEEE Transactions on Nuclear Science* 69.4 (avr. 2022), p. 687-695. DOI : [10.1109/TNS.2022.3143233](https://doi.org/10.1109/TNS.2022.3143233).
- [112] G. Colangelo, M. Davier, A. X. El-Khadra et al. « Prospects for precise predictions of a_μ in the Standard Model ». *arXiv e-prints* (mars 2022). arXiv : [2203.15810](https://arxiv.org/abs/2203.15810) [hep-ph].

- [113] The ATLAS Collaboration. *Tagging boosted W bosons applying machine learning to the Lund Jet Plane*. Rapp. tech. Geneva : CERN, 2023. URL : <http://cds.cern.ch/record/2864131>.
- [114] Eimear Conroy. « The impact of ATLAS V +jet measurements on PDF fits ». *SciPost Phys. Proc.* 10 (2022), p. 012. DOI : [10.21468/SciPostPhysProc.10.012](https://doi.org/10.21468/SciPostPhysProc.10.012). arXiv : [2111.01232](https://arxiv.org/abs/2111.01232) [hep-ex].
- [115] D. d’Enterria, S. Kluth, G. Zanderighi et al. « The strong coupling constant : State of the art and the decade ahead ». *arXiv e-prints* (mars 2022). arXiv : [2203.08271](https://arxiv.org/abs/2203.08271) [hep-ph].
- [116] T. Dado et ATLAS Collaboration. « Modeling Radiation Damage to Pixel Sensors in the ATLAS Detector ». *European Physical Society Conference on High Energy Physics*. Jan. 2022, 812, p. 812. DOI : [10.22323/1.398.0812](https://doi.org/10.22323/1.398.0812).
- [117] M. Davier, D. Díaz-Calderón, B. Malaescu et al. « The Euclidean Adler function and its interplay with $\Delta \alpha_{QED}^{had}$ and α_s ». *Journal of High Energy Physics* 2023.4, 67 (avr. 2023), p. 67. DOI : [10.1007/JHEP04\(2023\)067](https://doi.org/10.1007/JHEP04(2023)067). arXiv : [2302.01359](https://arxiv.org/abs/2302.01359) [hep-ph].
- [118] M. Davier, A. Hoecker, A. M. Lutz et al. « Tensions in $e^+e^- \rightarrow \pi^+\pi^-(\gamma)$ measurements : the new landscape of data-driven hadronic vacuum polarization predictions for the muon $g-2$ ». *arXiv e-prints* (déc. 2023). arXiv : [2312.02053](https://arxiv.org/abs/2312.02053) [hep-ph].
- [119] Michel Davier, Zoltan Fodor, Antoine Gerardin et al. « Hadronic vacuum polarization : comparing lattice QCD and data-driven results in systematically improvable ways ». *arXiv e-prints* (août 2023). arXiv : [2308.04221](https://arxiv.org/abs/2308.04221) [hep-ph].
- [120] Frédéric Derue. « Top quark measurements in ATLAS ». *Seminaire du département de physique des hautes énergies*. IFJ-PAN. Cracovie, France, nov. 2021. URL : <https://hal.science/hal-04319487>.
- [121] Otilia Anamaria Ducu. « Performance of charged-particle reconstruction within energetic jets in ATLAS for Run 3 data taking ». *PoS ICHEP2022* (2022), p. 1092. DOI : [10.22323/1.414.1092](https://doi.org/10.22323/1.414.1092).
- [122] Thomas Gehrmann et Bogdan Malaescu. « Precision QCD Physics at the LHC ». *Annual Review of Nuclear and Particle Science* 72 (sept. 2022), p. 233-258. DOI : [10.1146/annurev-nucl-101920-014923](https://doi.org/10.1146/annurev-nucl-101920-014923). arXiv : [2111.02319](https://arxiv.org/abs/2111.02319) [hep-ph].
- [123] Laura Gonella et ATLAS ITk Collaboration. « The ATLAS ITk detector system for the Phase-II LHC upgrade ». *Nuclear Instruments and Methods in Physics Research A* 1045, 167597 (jan. 2023), p. 167597. DOI : [10.1016/j.nima.2022.167597](https://doi.org/10.1016/j.nima.2022.167597).
- [124] Franz Gross, Eberhard Klempt, Stanley J. Brodsky et al. « 50 Years of Quantum Chromodynamics ». *arXiv e-prints* (déc. 2022). arXiv : [2212.11107](https://arxiv.org/abs/2212.11107) [hep-ph].
- [125] L. Han, L. Zhang, J. Zhang et al. « Demonstration system of the HGTD peripheral electronics boards for ATLAS phase II upgrade ». *Nuclear Instruments and Methods in Physics Research A* 1045, 167651 (jan. 2023), p. 167651. DOI : [10.1016/j.nima.2022.167651](https://doi.org/10.1016/j.nima.2022.167651).
- [126] Theo Heimel, Nathan Huetsch, Ramon Winterhalder et al. « Precision-Machine Learning for the Matrix Element Method ». *arXiv e-prints* (oct. 2023). arXiv : [2310.07752](https://arxiv.org/abs/2310.07752) [hep-ph].

- [127] Theo Heimel, Ramon Winterhalder, Anja Butter et al. « MadNIS - Neural multi-channel importance sampling ». *SciPost Physics* 15.4, 141 (oct. 2023), p. 141. DOI : [10.21468/SciPostPhys.15.4.141](https://doi.org/10.21468/SciPostPhys.15.4.141). arXiv : [2212.06172](https://arxiv.org/abs/2212.06172) [hep-ph].
- [128] B. Hodkinson et ATLAS Collaboration. « METNet : A combined missing transverse momentum working point using a neural network with the ATLAS detector ». *European Physical Society Conference on High Energy Physics*. Jan. 2022, 625, p. 625. DOI : [10.22323/1.398.0625](https://doi.org/10.22323/1.398.0625).
- [129] Theodota Lagouri. « Search for heavy resonances decaying into a pair of Z bosons using 139 fb⁻¹ of p-p collisions at s=13 TeV with the ATLAS detector ». *International Journal of Modern Physics A* 37.7, 2141007 (mars 2022), p. 2141007. DOI : [10.1142/S0217751X21410074](https://doi.org/10.1142/S0217751X21410074).
- [130] J. P. Lees, V. Poireau, V. Tisserand et al. « Measurement of additional radiation in the initial-state-radiation processes $e^+e^- \rightarrow \mu^+\mu^-\gamma$ and $e^+e^- \rightarrow \pi^+\pi^-\gamma$ at BABAR ». *Phys. Rev. D* 108.11, L111103 (déc. 2023), p. L111103. DOI : [10.1103/PhysRevD.108.L111103](https://doi.org/10.1103/PhysRevD.108.L111103). arXiv : [2308.05233](https://arxiv.org/abs/2308.05233) [hep-ex].
- [131] K. Y. Lin et ATLAS Collaboration. « Search for $W^{(\prime)} \rightarrow tb$ decays in the hadronic final state with the ATLAS detector ». *European Physical Society Conference on High Energy Physics*. Jan. 2022, 632, p. 632. DOI : [10.22323/1.398.0632](https://doi.org/10.22323/1.398.0632).
- [132] Kuan-Yu Lin. « Search for $W' \rightarrow tb$ decays in the fully hadronic final state with the ATLAS experiment ». *arXiv e-prints* (jan. 2022). arXiv : [2201.10343](https://arxiv.org/abs/2201.10343) [hep-ex].
- [133] Luca Martinelli. « Inclusive & differential cross-section measurements of top-quark pair production with ATLAS and CMS ». *arXiv e-prints* (jan. 2022). arXiv : [2201.02492](https://arxiv.org/abs/2201.02492) [hep-ex].
- [134] M. Nicolás Viaux et ATLAS Muon Collaboration. « The ATLAS 'New Small Wheel' Muon detector stations recently commissioned for LHC Run3 ». *Nuclear Instruments and Methods in Physics Research A* 1045, 167574 (jan. 2023), p. 167574. DOI : [10.1016/j.nima.2022.167574](https://doi.org/10.1016/j.nima.2022.167574).
- [135] Lukas Novotny. « Measurements of CP violation and lifetime properties of B mesons at ATLAS ». *PoS CKM2021* (2023), p. 104. DOI : [10.22323/1.411.0104](https://doi.org/10.22323/1.411.0104).
- [136] R. Novotny et ATLAS Collaboration. « ATLAS measurements of CP violation with beauty mesons ». *European Physical Society Conference on High Energy Physics*. Jan. 2022, 521, p. 521. DOI : [10.22323/1.398.0521](https://doi.org/10.22323/1.398.0521).
- [137] Bernardo Sotto-Maior Peralva et ATLAS Tile Calorimeter System. « Upgrade of ATLAS hadronic Tile Calorimeter for the High-Luminosity LHC ». *Nuclear Instruments and Methods in Physics Research A* 1038, 166951 (sept. 2022), p. 166951. DOI : [10.1016/j.nima.2022.166951](https://doi.org/10.1016/j.nima.2022.166951).
- [138] Danyer Perez Adan. « Dark Matter searches at CMS and ATLAS ». *arXiv e-prints* (jan. 2023). arXiv : [2301.10141](https://arxiv.org/abs/2301.10141) [hep-ex].
- [139] Andrés Pinto, Zhibo Wu, Fabrice Balli et al. « Uncertainty components in profile likelihood fits ». *arXiv e-prints* (juill. 2023). arXiv : [2307.04007](https://arxiv.org/abs/2307.04007) [physics.data-an].

- [140] A. C. Reimers, ATLAS et CMS Collaborations. « Searches for leptoquarks in scenarios of lepton flavor universality anomalies ». *Particles and Nuclei International Conference 2021*. Avr. 2022, 140, p. 140. DOI : [10.22323/1.380.0140](https://doi.org/10.22323/1.380.0140). arXiv : [2111.11756](https://arxiv.org/abs/2111.11756) [hep-ex].
- [141] D. Rouso, D. M. Jones, P. Federicova et al. « Test and extraction methods for the QC parameters of silicon strip sensors for ATLAS upgrade tracker ». *Nuclear Instruments and Methods in Physics Research A* 1045, 167608 (jan. 2023), p. 167608. DOI : [10.1016/j.nima.2022.167608](https://doi.org/10.1016/j.nima.2022.167608).
- [142] F. Scuri et ATLAS Tile Calorimeter System. « Long term aging test of the new PMTs for the HL-LHC ATLAS hadron calorimeter upgrade ». *Nuclear Instruments and Methods in Physics Research A* 1045, 167660 (jan. 2023), p. 167660. DOI : [10.1016/j.nima.2022.167660](https://doi.org/10.1016/j.nima.2022.167660).
- [143] Y. Sulema, A. Pester, B. Laforge et al. « Augmented Reality User's Experience : AI-Based Data Collection, Processing and Analysis ». *Augmented Reality and Artificial Intelligence : The Fusion of Advanced Technologies*. Sous la dir. de V. Geroimenko. Springer Nature Switzerland, 2023, p. 31-46. ISBN : 978-3-031-27166-3. DOI : [10.1007/978-3-031-27166-3_2](https://doi.org/10.1007/978-3-031-27166-3_2). URL : https://doi.org/10.1007/978-3-031-27166-3_2.
- [144] G. F. Tartarelli et ATLAS Collaboration. « ATLAS toward the High Luminosity era : Challenges on electronic systems ». *Nuclear Instruments and Methods in Physics Research A* 1045, 167610 (jan. 2023), p. 167610. DOI : [10.1016/j.nima.2022.167610](https://doi.org/10.1016/j.nima.2022.167610).
- [145] The ATLAS Collaboration. « Measurement and interpretation of same-sign W boson pair production in association with two jets in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector ». *arXiv e-prints* (déc. 2023). arXiv : [2312.00420](https://arxiv.org/abs/2312.00420) [hep-ex].
- [146] Yusong Tian et al. « ATLAS ITk Pixel Pre-production Planar Sensor Characterisation for the HL-LHC Upgrade ». *PoS Pixel2022* (2023), p. 067. DOI : [10.22323/1.420.0067](https://doi.org/10.22323/1.420.0067).
- [147] M. Vasile, S. Martoiu, N. Boukhadida et al. « Integration of FPGA RDMA into the ATLAS readout with FELIX in High Luminosity LHC ». *Journal of Instrumentation* 18.1, C01025 (jan. 2023), p. C01025. DOI : [10.1088/1748-0221/18/01/C01025](https://doi.org/10.1088/1748-0221/18/01/C01025).
- [148] L. Vaslin et ATLAS Tile Calorimeter System. « The ATLAS Tile Calorimeter performance and its upgrade towards the High-Luminosity LHC ». *Particles and Nuclei International Conference 2021*. Avr. 2022, 107, p. 107. DOI : [10.22323/1.380.0107](https://doi.org/10.22323/1.380.0107).
- [149] Alexander Volker, Janis Viktor Schmidt, Dominik Dannheim et al. « Pixel detector hybridization and integration with anisotropic conductive adhesives ». *arXiv e-prints* (déc. 2023). arXiv : [2312.09883](https://arxiv.org/abs/2312.09883) [physics.ins-det].
- [150] Sebastian Wuchterl. « Standard model parameters from top quark measurements at LHC with ATLAS and CMS ». *arXiv e-prints* (jan. 2022). arXiv : [2201.06946](https://arxiv.org/abs/2201.06946) [hep-ex].
- [151] H. Ye et ATLAS Collaboration. « Search for heavy Higgs bosons decaying into two tau leptons with the ATLAS detector using pp collisions at $\sqrt{s} = 13$ TeV ». *European Physical Society Conference on High Energy Physics*. Jan. 2022, 629, p. 629. DOI : [10.22323/1.398.0629](https://doi.org/10.22323/1.398.0629).