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Performance of the ATLAS Calorimeters and Commissioning for LHC Run-2

The ATLAS general-purpose experiment at the Large Hadron Collider (LHC) is equipped with electromagnetic and hadronic liquid-argon (LAr) calorimeters and a hadronic scintillator-steel sampling calorimeter (TileCal) for measuring energy and direction of final state particles in the pseudorapidity range $|\eta| < 4.9$.

The calibration and performance of the calorimetry system was established during beam tests, cosmic ray muon measurements and in particular the first three years of pp collision data-taking. During this period, referred to as Run-1, approximately 27[°]fb⁻¹ of data have been collected at the center-of-mass energies of 7 and 8[°]TeV. Results on the calorimeter operation, monitoring and data quality, as well as their performance will be presented, including the calibration and stability of the electromagnetic scale, response uniformity and time resolution. These results demonstrate that the LAr and Tile calorimeters perform excellently within their design requirements. The calorimetry system thus played a crucial role in the Run-1 physics programme, and in the discovery of a Higgs boson.

Furthermore, the outcome from the detector consolidation after Run-1 and the major improvements for the upcoming Run-2 will be discussed. First results from the detector commissioning using early LHC beam-splash events in 2015 will be reported.

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