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The ATLAS Tile Calorimeter performance at LHC

The Tile Calorimeter (TileCal), the central section of the hadronic calorimeter of the ATLAS experiment, is a key detector component to detect hadrons, jets and taus and to measure the missing transverse energy. Due to the very good signal to noise ratio it assists the spectrometer in the identification and reconstruction of muons. TileCal is built of steel and scintillating tiles coupled to optical fibers and read out by photomultipliers. The calorimeter is equipped with systems that allow to monitor and calibrate each stage of the readout system exploiting different signal sources: laser light, charge injection and a radioactive source. The calorimeter performance and its stability has been evaluated with the rich sample of collision data in 2011 but also with calibration data, random triggered data, cosmic muons and splash events. Results on the absolute energy scale calibration precision, on the energy and timing uniformity, on the time resolution and on the synchronization precision are presented. Besides, the TileCal minimum bias current readout provides a precise monitoring of the instantaneous luminosity. The results demonstrate that the Tile Calorimeter is performing well within the design requirements and is giving essential input to the physics results.

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Please enter the name of the collaboration or group using the acronym, as in: ABC Collaboration

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