

Upgrade of the ATLAS Tile Calorimeter for the High Luminosity LHC

Saturday 20 July 2024 09:33 (15 minutes)

The Tile Calorimeter (TileCal) is a sampling hadronic calorimeter covering the central region of the ATLAS experiment, with steel as absorber and plastic scintillators as active medium. New electronics of the TileCal is needed to meet the requirements of a 1 MHz trigger, higher ambient radiation, and to ensure better performance under high pile-up conditions at the HL-LHC. Both the on- and off-detector TileCal electronics will be replaced. The modular front-end electronics feature radiation-tolerant commercial off-the-shelf components and redundant design to minimise single points of failure. The results of the extensive R&D programme for on- and off-detector systems, together with expected performance and results of beam tests with the electronics prototypes will be discussed. A demonstrator module was inserted in 2019 in the TileCal. The performance of the demonstrator will be presented.

Alternate track

I read the instructions above

Yes

Primary authors: DA SILVA GOMES, Agostinho (Laboratory of Instrumentation and Experimental Particle Physics (PT)); ZHU, Junjie (University of Michigan (US))

Presenter: DA SILVA GOMES, Agostinho (Laboratory of Instrumentation and Experimental Particle Physics (PT))

Session Classification: Operation, Performance and Upgrade (incl. HL-LHC) of Present Detectors

Track Classification: 12. Operation, Performance and Upgrade (incl. HL-LHC) of Present Detectors