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Implementation of the LED Integrator panel for the Prometeo system in the ATLAS Tile Calorimeter

During ATLAS Phase-II Upgrade almost every electronics component of the Tile Calorimeter (TileCal) will be upgraded. The new on-detector readout electronics system requires a new portable system that will certify its correct functionality during the assembly, installation and maintenance periods. Portable readout module for tile electronics (PROMETEO) is an upgrade of the current MobiDICK system that was used to test current electronics during the Long Shutdown 1 and 2. It represents an independent and completely autonomous system that includes all necessary components to verify the correct functionality of TileCal on-detector electronics during assembly, installation and maintenance. PROMETEO must be able to check the following things: connection with mini-drawers (MD), connection with the daughterboard (DB) and the mainboard (MB), photomultiplier tubes (PMT), and many more. In order to check the response of the PMTs to light pulses, an LED system is required to generate light pulses that mimic physics pulses.

The LED Integrator panel will be integrated into PROMETEO Graphical User Interface and the purpose of LED light injection is to check entire read-out chain and timing, which includes data from PMTs, FENICS cards, Mainboard, Daughterboard and PPr/CPM. Results will be presented.

Apply to be considered for a student ; award (Yes / No)?

Yes

Level for award;(Hons, MSc, PhD, N/A)?

PhD

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