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Developing the Temperature Mapping Plugin of the Tile Calorimeter of the ATLAS Detector within Tile-in-One

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In order to continuously analyse the tile hadron calorimeter temperature data of the ATLAS off-line, the Tile-in-One (TiO) must be fully exploited. The Tile Calorimeter (TileCal) is a sampling hadronic calorimeter covering the central region of the ATLAS experiment, with steel as the absorber and plastic scintillators as the active medium. Wave Length Shifting fibres (WLS) gather light produced in each plastic scintillators. The WLS subsequently transmit that light into Photo Multipliers Tubes (PMTs). The TiO is a collection of small, independent web tools called plugins. Plugins assess the quality of data and conditions for ATLAS TileCal. The TiO web platform needs to be highly flexible and simple to maintain in order to be beneficial to plugin developers as well. An environment was created that allows users to use the Detector Control System (DCS) Data Viewer (DDV), to request temperature information from the DCS. This paper shows the successfulness of developing the temperature plugin and the mapping of it. The work aims to study the variation of temperature inside the drawers. Reason for this, is to know the stability of the electronics, and gain stability of the PMTs. Finding a simple way to display not only the state of one specific module but also the status of the entire detector is the main goal of the stable temperature plugin.

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

yes

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

MSc

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