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ATLAS Tile Calorimeter Cesium calibration control and analysis software

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An online control system to calibrate and monitor ATLAS Barrel hadronic calorimeter (TileCal) with a movable radioactive source, driven by liquid flow, is described.

To read out and control the system an online software has been developed, using ATLAS TDAQ components like DVS (Diagnostic and Verification System) to verify the HW before running, IS (Information Server) for data and status exchange between networked computers, and other components like DDC, to connect to PVSS-based slow control systems of Tile Calorimeter, like high voltage and low voltage.

A system of scripting facilities, based on Python language, is used to handle all the calibration and monitoring processes from hardware perspective to final data storage, including various abnormal situations.

A QT based graphical user interface to display the status of the calibration system during the cesium source scan is described.

The software for analysis of the detector response, using online data, is discussed.

Performance of the system and first results from the pit are presented.

Submitted on behalf of Collaboration (ex, BaBar, ATLAS)

Tile Collaboration of ATLAS experiment

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