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The ATLAS Tile Calorimeter Tools for Data Quality Assessment

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The ATLAS Tile Calorimeter (TileCal) is the central part of the hadronic calorimeter of the ATLAS experiment and provides important information for reconstruction of hadrons, jets, hadronic decays of tau leptons and missing transverse energy. The readout is segmented into nearly 10000 channels that are calibrated by means of Cesium source, laser, charge injection, and integrator-based systems.

The data quality (DQ) relies on extensive monitoring of both collision and calibration data. Automated checks are performed on a set of predefined histograms and results are summarized in dedicated web pages. A set of tools is then used by the operators for further inspection of the acquired data with the goal of spotting the origins of problems or other irregularities. Consequently,the TileCal conditions data (calibration constants, channel statuses etc) are updated in databases that are used for the data-reprocessing, or serve as an important input for the maintenance works during the shutdown periods. This talk reviews the software tools used for the DQ monitoring with emphasis on recent developments aiming to integrate all tools into a single platform.

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