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Minimum Bias Trigger Scintillators for ATLAS: Commissioning and Run 2 Initial Operations

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The Minimum Bias Trigger Scintillators (MBTS) delivered the primary trigger for selecting events from low luminosity proton-proton, lead-lead and lead-proton collisions with the smallest possible bias during LHC Run 1 (2009-2013). Similarly, the MBTS will select events for the first Run 2 physics measurements, for instance charge multiplicity, proton-proton cross section, rapidity gap measurements, etc. at the unprecedented 13 TeV center of mass energy of proton-proton collisions.

We will review the upgrades to the MBTS detector that have been implemented during the 2013-2014 shut-down. New scintillators have been installed to replace the radiation damaged ones, a modified optical readout scheme have been adopted to increase the light yield and an improved data acquisition chain has been used to cope with the few issues observed during Run 1 operations.

Since late 2014, MBTS have been commissioned during cosmic data taking, first LHC beam splashes and single beam LHC fills. The goal is to have a fully commissioned detector ready for physics measurements during the first proton proton collisions. We will summarize the results of the ongoing commissioning; in particular we will show the timing of the triggers delivered, the data/MC calibration of the signals and preliminary studies of trigger selection performance.

Collaboration

ATLAS Collaboration

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