Contribution ID: **17** Type: **poster presentation**

The on-line monitoring of the ALICE Muon Trigger at LHC

Tuesday, 7 February 2012 18:31 (1 minute)

ALICE (A Large Ion Collider Experiment) is the experiment dedicated to the study of ultra-relativistic heavy ion collisions at LHC. The ALICE Muon Spectrometer is mostly designed to detect muons from quarkonia and heavy flavour decays in a large range of forward pseudo-rapidity. Its performance should fulfil an operation in the high multiplicity environment from central Pb-Pb collisions as well as in the high rate of pp collisions, both requiring a fast and efficient trigger system.
The Muon Trigger is based on four planes of RPC (Resistive Plate Chamber) detectors each of them covering a total surface of about 36 m2. The RPCs are readout by means of 21,000 strips equipped with front-end (FE) electronics. The trigger decisions are delivered by a fast electronics, organized in three levels: Local (receiving the signals from the FE), Regional and Global. The Global decision is sent to the ALICE Central Trigger Processor.
To monitor detector performance and assure good data quality, an on-line monitoring tool, AMORE (Automatic MOnitoRing Environment), has been developed by ALICE. AMORE is interfaced to the DAQ software framework (DATE) and follows the publish-subscribe paradigm where a large number of batch processes execute detector specific analysis on raw data samples and publish monitoring results on specialized servers. This poster aims at presenting the AMORE tool and the developments made for the Muon Trigger performance monitoring, including RPC detectors (strip scalers, strip patterns, strip multiplicities), algorithm decisions at all levels in the electronics, as well as overall trigger efficiency exploiting the redundancy of RPC planes.

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Session Classification: Poster session

Track Classification: Performance of RPC systems