

Design and Performance of the Detector Control System of the ATLAS RPC Muon Spectrometer

Tuesday, 9 February 2010 12:10 (20 minutes)

Muon detection plays a key role at the Large Hadron Collider. Resistive Plate Chambers (RPC) provide the barrel region of the ATLAS detector with an independent muon trigger as well as a twocoordinate measurement. The chambers, arranged in three concentric layers, are operated in a strong magnetic toroidal field and cover a surface area of about 4000 m².

The RPC Detector Control System is required to monitor and safely operate tens of thousand of channels, which are distributed on several subsystems, including low and high voltage power supplies, trigger electronics, currents and thresholds monitoring, environmental sensors and gas and electronic infrastructure. The System is also required to provide a level of abstraction for ease of operation as well as specific tools allowing expert actions and detailed analysis of archived data.

The hardware architecture and the software solutions adopted are shown in detail along with a few results from the comissioning and first running phases. The material presented here can be a base to future test facilities and projects.

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Session Classification: Status and performance of wide-gap RPC systems (II)