



ID de Contribution: 68

Type: **Oral presentation**

The Ring Imaging Cherenkov Detectors of the LHCb Experiment

lundi 3 mai 2010 11:30 (30 minutes)

Particle identification is one of the fundamental requirement of the LHCb experiment. Hadron identification is performed by two Ring Imaging Cherenkov (RICH) detectors, comprising three radiators and 484 Hybrid Photon Detectors (HPDs) providing 500,000 channels of data.

The particle identification system covers the full angular acceptance of the LHCb spectrometer and is designed to give positive identification from 1 up to 100 GeV/c.

Specific readout electronics have been developed to readout and processing the data from the HPDs including data transmission and power distribution. A dedicated high voltage control system has been implemented in order to operate and monitor the RICH HPDs.

Essential for RICH operation are the control and monitoring of low voltage and high voltage systems, the monitoring of gas quality, mirror alignment and environmental parameters, and finally detector safety. A well calibrated and aligned RICH system is essential for providing the particle identification performance necessary for the physics goals. The LHCb RICH Detector Control System ensures the efficient and safe operation of the two RICH detectors.

A description of the LHCb RICH will be given, the experience to operate the detector at LHC, as well as preliminary performance, will be reported.

Please indicate "poster" or "plenary" session. Final decision will be made by session coordinators.

plenary

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Classification de Session: Cherenkov Imaging in particle and in nuclear physics experiments

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