Contribution ID: **104** Type: **Oral Presentation**

Performance of the RICH detectors of LHCb

Thursday 9 June 2011 16:40 (20 minutes)

Hadron identification, in particular the ability to distinguish charged kaons and pions, is crucial to many of LHCb core physics analyses. LHCb Ring Imaging Cherenkov (RICH) detector fulfills this role by providing charged particle identification in the momentum range between 1 and 100 GeV/c. The calibration and monitoring of the RICH detectors is achieved using samples of D^*, K^0_S, Λ and ϕ events, which are plentiful in the data and can be cleanly isolated through their decay kinematics. The particle identification performance of the LHCb RICH detectors, measured in data taken during the 2010 and 2011 LHC runs, will be presented along with the strategy for aligning and calibrating the detector. Finally this performance will be placed in context by highlighting the impact of the RICH performance on some of LHCb benchmark analyses.

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Session Classification: Particle ID Detectors

Track Classification: Particle Identification