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ASTROPARTICLE PHYSICS IN ALICE - LHC

Abstract content

A large number of cosmic events were recorded during 2009 and 2010 for the calibration, alignment and commissioning of most of the ALICE (A Large Ion Collider Experiment at the CERN LHC) detectors. New cosmic data are continuously taken in 2011 during the periods in which the LHC accelerator does not produce any beam. Specific triggers, not used during the LHC collisions, were implemented to take these data. In particular the triggers given by TOF (Time of Flight) and ACORDE (array of scintillators) to select muons with zenith angle in the range 00-600 and reconstructed with the TPC (TimeProjection Chamber), and the trigger and tracking performed by the FMS(Forward Muon Spectrometer) to study the horizontal muons (700 - 850 zenith angle range). The measurement of the μ+/μ- ratio for both, vertical and horizontal muons in some specific momentum intervals will be presented. The muon multiplicity distribution and in particular a detailed study of very high muon density events will be discussed together with measurements of arrival time of these muons. A preliminary analysis of the time of light of all the cosmic particles crossing the TPC will be shown.

Summary

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