

Charge ratio of cosmic muon spectrum at Madurai, India

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The INO-ICAL collaboration has built a prototype detector called mini-ICAL at IICHEP, Madurai, India ($9^{\circ} 56' N$, $78^{\circ} 00' E$). The mini-ICAL is being used to measure charge-dependent cosmic muon flux at the earth's surface. Mini-ICAL is a magnetised detector, composed of 11 layers of iron plates interspaced with resistive plate chambers to track cosmic ray muons. The iron is magnetised to a maximum field of 1.5 T by applying a current of 900 A through 32 copper coils. The simulation with Geant4-toolkit by including detector noise and efficiency, which eventually used in the unfolding technique to obtain muon spectrum at the earth's surface from the observed distributions. This talk presents the results of the charge ratio of μ^{+} to μ^{-} as a function of momentum ranges from ~ 1 GeV/c to 3 GeV/c and azimuthal angle of reconstructed muon for different zenith angle and compared with the prediction from different hadronic models in CORSIKA events generator.

Alternate track

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