

Executive Summary

Density of GeV Muons Measured with IceTop



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What is this contribution about?

- ▶ Analysis of the density of GeV muons in near-vertical air showers using three years of data from IceTop

What has been done?

- ▶ Measurement of the lateral muon density
 - ▶ at distances of 600 m from the shower axis for EAS energies between 2.5 PeV and 40 PeV
 - ▶ at distances of 800 m from the shower axis for EAS energies between 9 PeV and 120 PeV
- ▶ Comparison with predictions from different hadronic interaction and cosmic ray flux models

Results:

- ▶ Measurements consistent with Sibyll 2.1 hadronic interaction model assuming multiple cosmic ray flux models
- ▶ Measurements are in tension with EPOS-LHC and QGSJet-II.04 which yield a very light mass composition