

Atmospheric neutrino calculations

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I will discuss uncertainties in our knowledge of the flux of atmospheric neutrinos. At low energies relevant for study of neutrino oscillations, primary sources of uncertainty are related to properties of hadronic physics, such as the kaon to pion ratio. Around 100 TeV the uncertain level of charm production becomes important. The primary spectrum, which dominates the normalization of the neutrino flux, becomes a particularly important source of uncertainty above 100 TeV, where the knee of the cosmic-ray spectrum comes into play and the composition is less well known.

Primary author: GAISSER, Tom (Bartol, Univ. Delaware)

Presenter: GAISSER, Tom (Bartol, Univ. Delaware)

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