



Contribution ID: 102

Type: **not specified**

Methods for muon energy loss reconstruction in IceCube

Wednesday, 12 October 2011 14:20 (20 minutes)

The energy of muon neutrinos and muons detected by IceCube is not directly measured. For low energy contained events the length of the track inside can be used to derive an energy estimate. For higher energy through-going events the main energy-related observable is the energy *loss* of muons. The stochastic nature of this energy loss makes the reconstruction non-trivial. Several approaches have been developed to reconstruct the muon energy loss in IceCube events and to derive the muon energy from that. These approaches vary both in the level of detail of the result and in the techniques they use to take the ice properties into account. I will present an overview of these approaches and the preliminary estimates of their performance.

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Session Classification: Parallel Session 1

Track Classification: Physics, reconstruction and software