

Abstract Submitted
for the APR05 Meeting of
The American Physical Society

Zenith Angle Dependence of Prompt Muon and Neutrino Fluxes in High Energy Cosmic Ray Showers LOUIS LICATE, GINTARAS DUDA, Creighton University — Upon entering Earth's atmosphere high energy cosmic rays generate a shower of particles in which high energy muons and neutrinos are created. These high energy ($\geq 10^6$ TeV) particles can mimic signals coming from astrophysical sources currently hunted for by neutrino telescopes. In particular, the prompt component of such showers is important as prompt muons and neutrinos dominate over conventional particles at higher energies. We simulate the flux of prompt muons and neutrinos using pQCD calculations with NLO corrections to charm production cross sections. Prompt muon and neutrino fluxes for UHERC with non-zero zenith angles will be presented. Implications for backgrounds at neutrino telescopes will also be discussed.

Gintaras Duda
Creighton University

Date submitted: 14 Jan 2005

Electronic form version 1.4