



Contribution ID: 1113

Type: **Poster contribution**

Effect of local terrain in neutrino propagation based on Simulation with topographic data

Saturday 1 August 2015 15:30 (1 hour)

Extremely high energy neutrinos are attenuated by the materials surrounding the neutrino detector. Topography data can provide spatial distribution of material and become an essential factor in high energy neutrino experiment, especially for the earth skimming neutrino experiment. This study introduced the Antarctica topography data, including composite layers of rock, ice, and water, to investigate the topography effect for near horizontal neutrino events. We also apply the different neutrino experiment setups (balloon, surface, and underground types) into the simulation to estimate the topography effect for neutrino observation.

Collaboration

– not specified –

Registration number following "ICRC2015-I/"

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Session Classification: Poster 2 DM and NU

Track Classification: NU-EX