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

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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

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Primary author: Dr LIU, T.C. (LeCosPA and Department of Physics, National Taiwan university)

Co-authors: Mr CHI, C.-J. (Institute of Physics, National Chiao-Tung University); Mr IONG, Chan-Hin (Institute of physics, Academia Sinica); Mr WU, Chia-Hao (Institute of Physics, National Chiao-Tung University); Prof. HUANG, M.H. (Department of energy engineering, National United University)

Presenter: Dr LIU, T.C. (LeCosPA and Department of Physics, National Taiwan university)

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