

Abstract Submitted
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Search for diffuse extraterrestrial contained neutrino-induced cascades using IceCube 79- and 86-string configurations¹ MARIOLA LESIAK-BZDAK, JOANNA KIRYLUK, Stony Brook University, ICECUBE COLLABORATION — IceCube, a cubic kilometer detector at the South Pole, is the largest neutrino telescope currently taking data. Utilizing the transparent ice of Antarctica as a detection medium, IceCube digital optical sensors observe Cherenkov radiation from secondary particles produced in neutrino interactions inside or near the detector. Charged current ν_μ interactions create muon tracks, while charged current ν_e interactions, and neutral current interactions of all flavors initiate electromagnetic and hadronic showers (cascades). The goal of this study is to search for extraterrestrial neutrino-induced cascades, contained within the detector volume, with energies in the tens of TeV to a few PeV neutrino energy range and characterize the diffuse neutrino flux measured in IceCube. The analysis uses 662 days of livetime of the data taken from May 2010 to May 2012 with 79- and 86- string IceCube configurations. The analysis method and results of the likelihood fits to the cascade energy spectra from the fully unblinded datasets will be presented.

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