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Observations of track-like neutrino events with Baikal-GVD

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Baikal Gigaton Volume Detector (Baikal-GVD) is a km^3-scale neutrino detector currently under construction in Lake Baikal, Russia. The detector currently consists of 2016 optical modules arranged on 56 vertical strings. Further extension of the array is planned for March 2021. The data from the partially complete array have been analyzed using a χ^2-based track reconstruction algorithm. After suppression of the downward-going atmospheric muon background, a flux of upward-going neutrino events is observed, dominated by the atmospheric neutrinos. The reconstructed energy spectrum is compared with the expectations for the atmospheric neutrino and diffuse astrophysical neutrino fluxes.

Keywords

atmospheric neutrino; diffuse astrophysical neutrino flux; atmospheric muons; neutrino telescope; Baikal-GVD

Collaboration

other (fill field below)

other Collaboration

Baikal-GVD

Subcategory

Experimental Results

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