

Development of the Double Cascade Reconstruction Technique in the Baikal-GVD Neutrino Telescope

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The Baikal-GVD is a neutrino telescope under deployment situated in Lake Baikal - the deepest freshwater lake in the world. It is composed of independent operational units called clusters. In 2022, 10 clusters are data taking. The main goal of the Baikal-GVD neutrino telescope is the detection of astrophysical neutrinos.

In charged current interaction of tau neutrino the resulting tau lepton might decay into electron or hadrons. As a consequence a double cascade signature is created. The identification of high-energy tau neutrinos is considered to be a promising method for astrophysical neutrino detection.

In this poster, a technique for the reconstruction of double cascades in the Baikal-GVD will be described. The first flux estimations of tau neutrino double cascade events as well as the expected background rates will be presented.

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