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Baikal-GVD Neutrino Telescope

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Baikal-GVD (Gigaton Volume Detector) is a neutrino telescope deployed in Lake Baikal in the south-eastern part of Russia with its primary purpose to observe high and ultra-high energy (TeV–PeV) neutrino, as well as to identify and explore their sources. As of 2021, the detector consists of eight clusters of 288 optical modules each, immersed in the water at the depths spanning from 750 m to 1300 m below the surface. Eight more clusters are scheduled to be deployed by 2025. Each optical module is equipped with a 10” photo-multiplier tube enabling to gather the Cerenkov photons emitted by secondary particles produced in neutrino interactions in the vicinity of the detector. The spatial and temporal distribution of the signal in the optical modules is used to reconstruct the neutrino interaction type, its energy and direction. The talk will cover the components and structure of the detector, its deployment process and the first physics results.

Collaboration

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