Contribution ID: 464

Type: Poster

A study of a response of the Baikal deep underwater telescope NT-1000 to the atmospheric muons

At the moment underwater neutrino telescope NT-1000 is being created at Lake Baikal. It will consist of 8 individual subdetectors - clusters of strings, 2 of them have already operated in real data accumulation regime and have 576 large area photodetectors. A main fraction of events

in the detector comes from atmospheric muon flux. On the one hand, atmospheric muons are the major background for high-energy neutrino detection, but, on the other hand, they can be used for additional detector calibration, check the reliability of simulation program etc. In this regard, it is necessary to have a quantitative description of energy and angular characteristics of atmospheric muon flux, structure of telescope response on atmospheric muons after applying

primary event cuts. In this work these issues were considered and event visualization program was developed, which clearly illustrates the neutrino telescope response on atmospheric muons.Further development of this program allows to have a reliable tool for NT-1000 data processing

and analysis, in particular, for development of new event reconstruction techniques. This work is a necessary step towards separation neutrino events from background, as well as understanding

of possibility of primary cosmic rays characteristics reconstruction.

Primary author: Ms ORAZGALI, Tokzhan (JINR)

Co-author: Dr SHAYBONOV, Bair (JINR)

Presenter: Ms ORAZGALI, Tokzhan (JINR)

Track Classification: High Energy Physics