



ID contributo: 55

Tipo: oral

Search for Neutrino Generated Air Shower Candidates with energy more than 5×10^{18} eV and zenith angle $\theta \geq 50^\circ$

mercoledì 7 settembre 2016 11:45 (15 minuti)

Neutrino air showers can be formed in any part of the atmosphere passing a long way in the matter due to its physical properties. In general, air showers produced by neutrinos are highly inclined and formed near the ground level, i.e. young showers. Therefore, one should expect a large number of peaks in the signal of such air showers [1, 2, 3].

The goal of our work is to search for air shower candidates produced by neutrino. For this purposes, we analyzed large amount of data from scintillation detectors with different area and energy thresholds [1, 2]. Preliminary analysis of Yakutsk array data indicated the absence of air shower produced by neutrino, but it does not mean that such air showers does not exist. It's going to need a further analysis of highly inclined showers. In order to do that improved methodology for recording and processing of air showers required.

Summary

1. Stanislav Knurenko, Zim Petrov and Yuri Yegorov. 2013 J. Phys.: Conf. Ser. 409 012090. doi:10.1088/1742-6596/409/1/012090. Spatio-temporal structure of a shower disk in the ultra-high energy region observed by different components
2. S. Knurenko, A. Saburov. The nature of pulses delayed by $\tau \geq 5$ ns in scintillation detectors from showers with energy $E \approx 10^{17}$ eV. // Proceedings of the 33th International Cosmic Ray Conference, Rio-de-Janeiro, 2013, paper ID 0055.
3. G.I. Rubtsov et al. Search for ultra-high photons and neutrinos using Telescope Array surface detector. // EPJ Web of Conference 53, 05001 (2013) DOI: 10.1051/epjconf/20135305001

Autore principale: Dr. KNURENKO, Stanislav (Yu. G. Shafer Institute of Cosmophysical Research and Aeronomy)

Coautore: Sig. SABOUROV, Artem (Yu. G. Shafer Institute of Cosmophysical Research and Aeronomy); Sig. PETROV, Igor (Yu. G. Shafer Institute of Cosmophysical Research); Dr. PETROV, Zim (Yu. G. Shafer Institute of Cosmophysical Research and Aeronomy)

Relatore: Sig. PETROV, Igor (Yu. G. Shafer Institute of Cosmophysical Research)

Classifica Sessioni: Parallel