Contribution ID : **835** Type : **Poster**

Muon with threshold 1 GeV in extensive air showers with energy greater than 5 EeV

Monday, 5 October 2020 19:45 (15)

The paper presents an analysis of the characteristics of muons with a threshold greater than 1 GeV in showers with energies greater than 5 EeV and zenith angles less than 60 degrees. The analysis is based on the registration data of extensive air showers of the Yakutsk array. Estimation of muons at different distances from the shower core, fraction of muons $\rho_\mu/\rho_{\mu+e}$ at a distance of 600 m are obtained. An empirical relationship is found between the fraction of muons and longitudinal development - the depth of the maximum development of the air shower X_{max}. Calculations of the fraction of muons are performed using the QGSjetII-04 hadronic interaction model for different primary nuclei, and compared with the data. Mass composition of primary particles is estimated by muon component. Several showers were found in the sample, with a low content of muons, which possibly is produced by ultrahigh energy gamma rays.

Primary author(s) : Dr. KNURENKO, Stanislav (Yu. G. Shafer Institute of Cosmophysical Research and Aeronomy); PETROV, Igor (Yu. G. Shafer Institute of Cosmophysical Research and Aeronomy)

Presenter(s) : PETROV, Igor (Yu. G. Shafer Institute of Cosmophysical Research and Aeronomy)

Session Classification : Poster session

Track Classification : Astroparticle physics