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Energy spectrum and mass composition of cosmic rays according to the data of the TAIGA-HiSCORE installation

The TAIGA-HiSCORE setup is part of a hybrid complex TAIGA and includes 120 optical stations distributed over an area of 1.1 km^2 with a step of 106 m. To reconstruct the energy of EAS with an energy above 1 PeV, the density of Cherenkov radiation at a distance of 200 m from the EAS axis is used, and at lower energies at a distance of 100 m from the axis. The depth of the EAS maximum was determined by the steepness of the spatial light distribution function, namely, by the value of the ratio of the Cherenkov light flux at distances of 80 m and 200 m. The report presents the energy spectrum and mass composition of cosmic rays, reconstructed from experimental data obtained using the wide-angle Cherenkov setup TAIGA-HiSCORE for 700 hours of observations.

Collaboration(s)

TAIGA

Authors: OSIPOVA, Eleanora (Skobeltsyn Institute of Nuclear Physics Lomonosov Moscow State University); KUZMICHEV, Leonid (Skobeltsyn Institute of Nuclear Physics Lomonosov Moscow State University); TERNOVOY, Mark (Irkutsk State University); BUDNEV, Nikolay; PROSIN, Vasily (Skobeltsyn Institute of Nuclear Physics Lomonosov Moscow State University)

Presenter: BUDNEV, Nikolay

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