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Energy spectrum and mass composition of the primary cosmic rays based on the intensity of muon bundles detected in the NEVOD-DECOR experiment

The results of the analysis of the NEVOD-DECOR data on the study of inclined muon bundles of cosmic rays for the period from 2012 to 2023 are presented. An original method for studying the muon component of extensive air showers, local muon density spectra, was used. The data are compared with the calculations based on the simulation of air showers using the CORSIKA program for different models of hadronic interactions. The estimates of the energy spectrum and the behavior of the mass composition of primary cosmic rays in a wide energy range from 2*10^15 to 3*10^18 eV were obtained. They are compared with the data of other experiments.

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