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Investigation of EAS electron and muon components by means of NEVOD calibration telescope system

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The results of the long-term investigations of very high energy extensive air showers with the calibration telescope system (CTS) are presented. The CTS setup is a part of the NEVOD experimental complex. Its top plane is used to register the electron EAS component in the primary particle energy range of 10ˆ14–10ˆ15 eV, while the bottom plane can register muon component in the primary energy range of 10ˆ16–10ˆ18 eV. Two independent methods of reconstruction of the spectrum of the local density of charged particles are considered. The effects of building construction and water pool on the measurement results were calculated using Geant4. The exponents of charged particles local density spectra are obtained for different energy ranges, and the presence of the second "knee" in the spectrum of the muon EAS component is confirmed. The results are compared with CORSIKA calculations and data from other setups.

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