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ANALYSIS OF THE ELECTRON-PHOTON AND HADRON COMPONENTS OF EXTENSIVE AIR SHOWERS ACCORDING TO THE DATA OF THE NEVOD-EAS AND PRISMA-32 INSTALLATIONS

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At the Experimental Complex NEVOD (EC NEVOD, MEPhI, Moscow), a technique for the simultaneous measurement of the electron-photon and hadron components of extensive air showers (EAS) has been implemented. The electron-photon component is detected by 36 scintillation detector stations of the NEVOD-EAS array, arranged in 9 clusters and deployed on the roofs of the buildings and on the ground surrounding them. The hadron component of the shower is detected through thermal neutrons by the PRISMA-32 array, located beneath the roof of EC NEVOD and consisting of two clusters of 16 en-detectors each. This detectors are capable of measuring both the charged component and the thermalized neutrons produced in hadronic interactions of the shower core with the matter surrounding the array. The report presents a comparison of the characteristics of the two EAS components based on joint data from both arrays. Lateral distribution functions of thermal neutrons are obtained for different ranges of shower size. The results of the analysis of the ratio between the hadron and electron-photon components in the region of the knee of the cosmic ray energy spectrum are presented.

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