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The results of the first experimental series carried out at the NEVOD-EAS shower array

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For studying muon bundles arriving at various zenith angles, the method of the local muon density spectra (LMDS) is used at the experimental complex NEVOD-DECOR (MEPhI, Moscow). Estimation of the primary particle energy by means of this method has a rather low accuracy – σ(lgE0) ˜ 0.4 – due to contribution of extensive air showers (EAS) registered at different distances from the axis to the events with a fixed local muon density. To reduce the primary energy estimation uncertainties, the NEVOD-EAS air shower array is being created. The array will ensure independent estimation, by means of a traditional technique, of the size, arrival direction and axis position of the showers registered by with other installations and detectors of the Experimental complex NEVOD in the energy range of 10ˆ15 – 10ˆ17 eV. The first part of the NEVOD-EAS shower array including 7 independent clusters of scintillation detector stations is now launched into operation. The results of EAS detection carried out at the NEVOD-EAS during the experimental series from January to July 2018, as well as results of the analysis of joint events in the shower array and NEVOD-DECOR experimental complex will be presented.

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