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Prospects of the development of the Experimental Complex NEVOD

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The accumulated problems of the high- and ultra-high energy cosmic ray physics and the tasks of the multi-channel astronomy require the development of new experimental methods ensuring reliable identification of both primary and secondary cosmic ray particles.
To conduct breakthrough research in this area, the complex installations containing detectors of various types for multicomponent analysis of recorded events are needed. Such an installation is the Experimental Complex NEVOD, which combines a set of unique detectors and methods for measuring the electron-photon, hadron and muon components of cosmic rays.
In the coming years, it is planned to expand the complex by adding a new multi-cluster installation with dimensions of 450×450 m2. The cluster will include 12-16 hybrid detectors containing both a plastic scintillator for recording the EAS electron-photon component and a ZnS(Ag) scintillator with addition of 10B for recording thermal neutrons generated by the hadronic component of the air-shower. It is also planned to equip the clusters with shielded muon tracking detectors. Thus, in each event the number of particles of the three main EAS components will be measured separately.
The report discusses the prospects of the Experimental Complex NEVOD in solving problems of ultra-high energy particle astrophysics, gamma-astronomy, and in testing models of hadronic interactions.

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