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Modern status of high-mountain three-level ATHLET complex

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Three-level (3340, 1750 and 850 m a.s.l) ATHLET (Almaty Three Level Experimental Technique) complex is built up for investigations in fields of cosmic ray (CR) physics, astrophysics and gamma-ray astronomy of superhigh energies. The ATHLET's highest part has to include a) 1-km²-area ADRON-M facility with a "dense" location of detectors to detect electromagnetic, hadron, muon, neutron and radio EAS components with a high accuracy (~1 m) of determination of shower axes; b) specific shower array located at angle of ~45 degrees to detect showers in a wide range of zenith angles; c) GROZA complex for studying the nature of lightnings; d) "Muon beam" facility and classic seismic arrangements; e) a large instrumental complex to study low-energy components.

Physical investigation goals are as follows.

1) Astrophysics of cosmic rays (energetic spectrum and mass composition of primary cosmic radiation at $E_0 = 10^{14} - 2 \times 10^{18}$ eV). 2) Gamma-ray astronomy (at $E > 50$ TeV) (by selecting muonless, hadronless and neutronless showers). 3) Study of high-energy hadron interactions with atmosphere nuclei and selection of models which could describe EAS observable features in the best way. 4) Search for new phenomena. 5) Analysis of relations between neutron physics and EAS. 6) Mechanisms of lightning discharge and their connection with EAS and other CR-induced phenomena. 7) Solar radiation and "cosmic weather". 8) Seismology and EAS.

Modern status of detectors of the ATHLET complex is considered.

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