

Geophysical aspect of the cosmic ray studies at the Tien Shan mountain station: monitoring of radiation background, investigation of atmospheric electricity phenomena in thunderclouds and the search for earthquake precursor effects.

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The detector complex of the Tien Shan mountain station provides a mean for studies in the different ranges of experimental geophysics. The particles detectors of the station can be used for monitoring of the various types of radiation background. The system of high- altitude detectors permit to register the flow of particles accelerated by atmospheric electric field in thunderclouds, while combination of diverse radiation receivers can be used for detection of lightning emission simultaneously in different frequency ranges of electromagnetic spectrum. For effectiveness illustration of the Tien Shan experimental complex Thunderstorm a sample of unique data is presented here which were obtained in vicinity to the region of lightning development in thunderclouds, such as the temporal distributions and energy spectra of accelerated up to (1-100) MeV electrons, of the (30-3000) MeV gamma rays, of the optic and radio emission bursts. Another direction of geophysical studies at Tien Shan anticipates using of the neutron, muon, gamma, and electromagnetic detectors for investigation of the various effects of seismic origin, and for search for supposed correlation between such signals and interaction of the cosmic ray particles with the matter of the earth's crust. Perspectives of such investigation are discussed here for the seismological forecast problem and earthquake prediction in the surrounding region of the Tien Shan station.

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