Contribution ID: 3 Type: not specified

Tien Shan extensive air shower array and its radio receiver subsystem

Thursday, March 26, 2020 12:30 PM (30 minutes)

We consider the current status of the Tien Shan complex cosmic ray installation aimed for investigation of the 3-100 PeV extensive air showers (EAS). Together with a spatially distributed detector system of the charged EAS particles this installation includes also the hadron, muon, neutron, and gamma ray detectors which permit to create the complete picture of EAS development in each detected shower event. In recent years the Tien Shan experimental complex was supplemented by a system for registration of the 30-100 MHz radio waves emitted by EAS particles. Presently, this system consists of a set of four receiver stations each of which includes a pair of loop antennas with mutually perpendicular polarization planes. All stations are located in the tops of a cross with 40 m long verges oriented in NS and EW directions. The digitization of the radio signal waveforms is initiated by the EAS trigger from the shower installation and succeeds with a 4 ns time resolution. We present the typical samples of the radio signal records written at the times when some powerful EAS were hitting the Tien Shan shower installation.

Author: SHEPETOV, Alexander (P.N.Lebedev Physical Institute)

Presenter: SHEPETOV, Alexander (P.N.Lebedev Physical Institute)

Session Classification: Air-shower detectors