

Contribution ID: 83 Type: not specified

Multi-TeV Gamma astronomy: The Tunka-HiSCORE project

Thursday 23 May 2013 17:45 (20 minutes)

The new HiSCORE detector concept is based on Cerenkov air-shower detection, using the non-imaging technique. HiSCORE is build for gamma-ray astronomy from 10 TeV to several PeV, and cosmic rays studies from 100 TeV to 1 EeV. It will search for "pevatrons" (ultra-high energy gamma-ray sources), and measure cosmic ray composition and spectrum in the transition range from a supposed Galactic to extragalactic origin of cosmic rays.

The detector is made of wide-angle optical stations (0.6 sr) placed at distances of 150-200m, and will cover an area of 1 km 2 - 100 km 2 , to be deployed in various stages.

We report on plans and status for the Tunka-HiSCORE installation, in the Tunka valley near Lake Baikal, from first prototypes operating now to the 1km2 and 10km2 arrays envisaged for the near future.

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Session Classification: Parallel Session H