

TAIGA experiment

TAIGA stands for “Tunka Advanced Instrument for cosmic ray physics and Gamma Astronomy” and is a complex, hybrid detector system for ground-based gamma-ray astronomy from a few TeV to several PeV, and for cosmic ray studies from 100 TeV to several 100's of PeV. TAIGA will search for “Pevatrons” (ultra-high energy gamma-ray sources) and measure the composition and spectrum of cosmic rays in the transition region from Galactic to Extragalactic origin. TAIGA will include the HiSCORE – an array of wide-angle integrating air Cherenkov stations, an array of Imaging Atmospheric Cherenkov Telescopes, an array of particle detectors, both on the surface and underground and the TUNKA-133 integrating air Cherenkov array.

Main targets

This multi-component detector is aimed for cosmic and gamma rays studies within five orders of magnitude in energy and will become one of the main detectors in the TeV till 100's of PeV energy range.

- search for galactic sources of gamma-quanta with energies higher then 20-30 TeV
- studies of gamma-radiation fluxes from known sources in the energy range of higher than 20-30 TeV at the recorded level of sensitivity
- studies of high energy part of gamma radiation spectrum from the most bright blazars with aim to study gamma-quanta absorption on intergalactic background radiation (infrared and microwave) and search for axion-photon transitions
- search for possible violations of Lorenz-invariance and axion-photon transitions which in new approach to search of dark matter in the Universe
- The key idea for development gamma-observatory TAIGA is joint operation of wide-angle and narrow-angle detectors of the Tunka-HiSCORE and Tunka-IACT.

[Пример](#)

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