Contribution ID : **201** Type : **Poster**

Imaging Atmospheric Cherenkov Telescope for the TAIGA experiment

Monday, 2 October 2017 15:10 (170)

Study of cosmic ray (CR) sources is one of the most important tasks of astrophysics. The charged component of CR does not give such an opportunity because of the trajectory deviation in the interstellar magnetic fields. Therefore, gamma-ray astronomy plays an important role, since gamma-rays occur simultaneously with CR, but do not deflect in magnetic fields and can be relatively easily detected in the ground-based setups. Gamma astronomy made a powerful breakthrough in the GeV and TeV energy ranges over the past decade. However, important questions remain open, such as the observation of PeVatrons – CR sources in the Galaxy, where gamma quanta with energies more than 100 TeV may be generated. This subject is essential for the CR acceleration mechanism explanation.

An experimental setup of a new generation is created in the TAIGA collaboration. This is a complex of detectors of various types designed to measure extensive air showers (EAS), and is located in the Tunka valley, 50 km from the Lake Baikal. In addition to the muon and wide-angle Cherenkov optical detectors HiSCORE, it is proposed to construct up to 16 IACTs (Imaging Atmospheric Cherenkov Telescope). The IACT, which measures EAS together with other detectors, will improve the sensitivity of all complex of detectors.

The first IACT has been operating in the test mode since 2016. Debugging of the telescope control system and the data processing algorithms are continuing. The second telescope is being manufactured at JINR and will begin to work in Tunka at 2018. Also JINR is developing a technology for IACT mirror facets manufacturing, which will make possible to reduce the cost of manufacturing. The poster will present the IACT main technical parameters, examples of events, as well as the second IACT status of production, including the mirror facets production.

Primary author(s) : Mr. BORODIN, Arthur (JINR, Dubna)

Co-author(s) : SAGAN, Yaroslav (DLNP, JINR)

Presenter(s) : Mr. BORODIN, Arthur (JINR, Dubna); SAGAN, Yaroslav (DLNP, JINR)

Session Classification : Poster session and coffee&reception