

# Development of scintillation detectors with light collection on wavelength shifting light guides for TAIGA experiment

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The TAIGA gamma observatory is continuing its deployment at Tunka valley, close to Baikal lake. The new, original detectors, able to work in severe conditions of Siberia were developed to increase the TAIGA power for the study of gamma-quanta at energies about 1 PeV and above. The distinguishing feature of the detectors is the use of the wavelength shifting light guides for scintillation light collection on a photodetector. Several designs of the counters have been successfully tested: equipped with PMT or SiPM photo-detectors, acrylic or polystyrene based scintillators with thickness from 1 to 5 cm and detecting area from 0.75 to 1.0 m<sup>2</sup>. The data on the amplitude of the signal from cosmic muons measured in different points within the counter are presented. The first 48 counters were produced deployed in 2019 at the TAIGA experiment. They form 3 stations each with 8 surface detectors and 8 underground detectors buried at the depth of 1.7 m. After two winters, all counters are working.

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