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Potential sites for deployment of the TAIGA-100 project

The TAIGA-100 astrophysical complex is a project of a large-scale facility designed to solve a wide range of fundamental problems in gamma ray astronomy, cosmic ray physics and particle astrophysics. It will include several types of detectors to record various components of extensive atmospheric showers over an area of 100 square kilometers.
A key aspect of the successful implementation of the TAIGA-100 project is choosing an optimal site for its location. The report examines potential sites and analyzes their astroclimate by satellite data. The importance of in-situ measurements is emphasized. A prototype of the astroclimate station deployed on the area of the Tunka Astrophysical Center for Collective Use, where the operating TAIGA-1 complex is located, is described. The results of the comparison of the predictions of the Era5 model based on satellite data with the measured soil temperature profile at a depth of up to 3 m are presented, which allows assessing the accuracy of climate models and their applicability for planning future studies.

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