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Hybrid complex of TAIGA-1 - current status and development prospects.

Currently, the TAIGA-1 complex includes 4 Imaging Atmospheric Cherenkov Telescopes (IACT) of the TAIGA-IACT facility, 295 wide-angle Cherenkov detectors of the TAIGA-HiSCORE and Tunka-133 arrays, distributed over an area of 3 kmˆ2, and 19 scintillation stations of the Tunka-Grande installation. With their help, a large volume of experimental data has already been obtained on the cosmic rays flux with energies from 200 TeV to several EeV and gamma quanta with energies above 3 TeV, including, for the first time, gamma quanta with energies above 100 TeV were detected by the Cherenkov method, both within the framework of the hybrid and stereo modes. While the TAIGA-1 complex continues to develop methods and technologies that are planned to be used to create the TAIGA-100 complex with an area of about 100 kmˆ2, the potential of the TAIGA-1 complex for solving a wide range of physical problems is far from exhausted. In the coming years, it is planned to commission the fifth IACT to significantly increase the sensitivity for detecting the charged component of EAS by deploying new detectors of the TAIGA-Muon scintillation setup. In addition, it is planned to begin studying atmospheric electricity, including thunderstorm phenomena. The report presents plans for the development of the TAIGA-1 complex and a program of physical research for the next 5 years.

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