

Development of hybrid reconstruction techniques for TAIGA

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The TAIGA-experiment aims to implement a hybrid detection technique of Extensive Air Showers (EAS) at TeV to PeV energies, combining the wide angle Cherenkov timing array HiSCORE with Imaging Air Cherenkov Telescopes (IACTs). The detector currently consists of 89 HiSCORE stations and two IACTs, distributed over an area of about 1 km².

Our goal is to introduce a new reconstruction technique, combining the good angular and shower core resolution of HiSCORE with the gamma-hadron separation power of the imaging telescopes. With the second IACT in operation, three different event types can be explored: IACT stereo, full hybrid (IACT stereo + stations) and mono hybrid (IACT mono + HiSCORE), the latter being the operational goal of TAIGA.

The status of the development of the full hybrid reconstruction and its verification using real data and simulation are presented.

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Collaboration

TAIGA

other Collaboration

Subcategory

Experimental Methods & Instrumentation

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