

# Status of the development of hybrid reconstruction techniques for TAIGA

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## 1 Executive summary

### 1.1 What is this contribution about?

The hybrid approach of a large-area cost-effective combination of Imaging Air Cherenkov Telescopes (IACTs) with the HiSCORE angle-integrating timing air Cherenkov array.

### 1.2 Why is it relevant / interesting?

Because it introduces a new hybrid method which will allow to access the multi-TeV gamma-ray energy regime with good angular and spectral resolution. This work shows that we are getting closer to the goal of a hybrid reconstruction method and the analysis of data for an extension of spectra from known sources to hundreds of TeV, or the discovery of new sources.

### 1.3 What have we done?

We implemented a data processing chain, a simulation chain, and started investigating hybrid events; more specifically, we had a look at the core position reconstruction for data and simulations of events triggering both IACTs and the HiSCORE array.

### 1.4 What is the result?

We confirm a good core reconstruction capability, already at energies as low as 30 TeV and show converging simulations which brings us one step closer to a fully understood hybrid analysis.