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## Commissioning and Testing of IceAct Telescopes at the IceCube Neutrino Observatory

**Abstract:** IceAct is an array of imaging air Cherenkov telescopes located at the ice surface above the IceCube Neutrino Observatory. Each telescope features a silicon photomultiplier-based 61-pixel camera and a Fresnel-lens as imaging optic, resulting in a 12-degree field of view. The design is optimized to be operated in harsh environments, particularly at the South Pole. The setup will consist of a station of seven telescopes in a so-called fly's eye configuration, increasing the field of view to 36°, and an additional telescope 200m apart for stereoscopic observations.

Rigorous testing procedures have been performed before deployment to ensure that operation under these conditions is possible, e.g. night sky observations and cold temperature tests. Furthermore, on-site calibrations are used to verify the accuracy and reliability of the installation:

We derive the geometric alignment of each IceAct telescope by comparing the directional reconstruction of muons measured with IceCube to the corresponding primary particle direction reconstruction from IceAct.

This contribution presents these testing procedures. Additionally, we present the on-site alignment calibration, including a Graph Neural Network reconstruction for the primary particle direction in IceAct, verification on Monte Carlo simulation, and the application to a commissioning dataset.

### Collaboration(s)

IceCube

**Authors:** VAIDYANATHAN, Arun (Marquette Unniversity); Mr HEUERMAN, Lars (RWTH Aachen Univer-sity)

**Presenter:** VAIDYANATHAN, Arun (Marquette Unniversity)

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