

# R&D and production of scintillation detectors for the IceCube Surface Array Enhancement

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The IceCube Neutrino Observatory is a cubic kilometer scale detector deployed in the Antarctic ice. The surface array of IceCube, IceTop, serves as an air-shower detector for primary cosmic rays in the PeV energy range and operates as a veto and calibration detector for the astrophysical neutrino searches for the IceCube in-ice instrumentation. Enhancing IceTop with a hybrid array of scintillation detectors and radio antennas will lower the energy threshold for air-shower measurements, provide more efficient veto capabilities, enable the separation of the electromagnetic and muonic shower components, and significantly improve the detector calibration by compensating for snow accumulation. A prototype station consisting of 3 radio antennas and 8 scintillation detectors was deployed at the South pole in 2020, and has yielded promising results since. The production of the full surface array enhancement is ongoing. In this contribution we will focus on the status of the production and calibration methods for the scintillation panels. A brief introduction to the expected data and proposed analysis from the enhancement is also discussed.

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