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The Camera System for the IceCube Upgrade

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As part of a currently ongoing upgrade to the IceCube Neutrino Observatory, seven new strings will be deployed in the central region of the detector to enhance the capability to detect neutrinos in the GeV range. A main science objective of the IceCube Upgrade is to improve the calibration of the IceCube detector as a means of reducing systematic uncertainties related to the optical properties of the ice. A novel camera and illumination system, consisting of more than 1900 cameras installed in 700 newly developed optical modules of the IceCube Upgrade, has been developed. A combination of transmission and reflection photographic measurements will be used to measure the optical properties of bulk ice between strings and refrozen ice in the drill hole, to determine module positions, and to survey the local ice environments surrounding the sensor module. In this contribution, we present the production, acceptance testing, and the plan for post-deployment calibration measurements with this camera system.

Attendance type

In-person presentation

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