



POCAM for the IceCube Upgrade

Nikhita Khera and Felix Henningsen for the IceCube Collaboration

What is this contribution about?

The development and functional principle of the "Precision Optical Calibration Module" (POCAM) and all related device characteristics as well as its precision calibration procedure, for its application in the IceCube Upgrade

Why is it relevant/interesting?

It is an absolutely-calibrated, self-monitoring, isotropic, nanosecond, high-intensity calibration light source for optical calibration of large volume detectors.

What has been done?

Development of calibration stations for characterization of the light emitters in the POCAM as well as its emission profile. Both these characterizations were performed on a prototype POCAM.

What is the result?

- ⇒ Measurement of intensity yield and time profiles of the emitters in the POCAM for all driver types.
- ⇒ Measurement of the read-out response of both the self-monitoring sensors (i.e. the SiPM and the photodiode)
- ⇒ Temperature dependence of the pulser intensity as a function of bias voltage measured for both driver types.
- ⇒ Measurement of the emission profile of a POCAM hemisphere prototype.