

The multi-PMT optical module for the IceCube-Upgrade

Following the first observation of an astrophysical high-energy neutrino flux with the IceCube Neutrino Observatory in 2013, planning for an upgrade of the detector are progressing, which will expand the capabilities of the detector at low neutrino energies and allow to determine IceCube detector systematics with significantly improved precision. A substantial contribution to the improved performance is anticipated to be achieved by the application of advanced optical module technology. The multi-PMT optical module (mDOM) consists of 24 3-inch PMTs which provide, amongst others, a large photo-effective area, sensitivity to the incident direction of the photon and local coincidences within a module. After an introduction, the contribution presents the current status of the mDOM development with emphasis on the technology challenges and investigated solutions.

Primary author: KAPPES, Alexander (University Muenster)

Presenter: KAPPES, Alexander (University Muenster)