

The multi-PMT Optical Module of KM3NeT

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KM3NeT is a research infrastructure with neutrino telescopes at two sites in the Mediterranean Sea for the detection of high-energy cosmic neutrinos. The two underwater telescopes, ARCA and ORCA, are Cherenkov detectors, using similar technology but with different geometrical layouts. In this way, it is possible to cover a large range of neutrino energy and address various science topics ranging from neutrino astronomy to neutrino oscillation research. The main challenge is to instrument a cubic kilometer of detection volume with optical modules for the detection of Cherenkov radiation. The technology of the KM3NeT optical module follows a multi-PMT approach. It contains 31 three-inch photomultiplier tubes for high resolution, good positioning and timing calibration. Its integration process follows a strict protocol as the production takes place in parallel in different integration sites. In this talk, we will describe the KM3NeT optical module technology and its integration process.

Alternate track

1. Detectors for Future Facilities, R&D, Novel Techniques

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Yes

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