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The multi-PMT optical module of KM3NeT

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Abstract:

For the first time in neutrino telescopes, the optical module of KM3NeT has 31 small photomultipliers instead of the traditional one large-dimension photomultiplier, as in other neutrino telescopes. Also, the size of the photocathode area in the module is unprecedented.

It is about the same as three 10-inch photomultipliers. The multi-PMT approach allows for a high resolution, good positioning and timing calibration. The integration of the optical modules follows a strict protocol and a standardised procedure. It takes place in parallel at eight different integration sites in the labs of the collaboration. In this way, it is possible to reach a significant production rate of more than 100 well-qualified modules per month.

In this talk, we present details of the technology of the KM3NeT optical module and the integration process.

Summary

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