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## Development and performances of a high statistic PMT test facility

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Since almost a century photomultipliers have been the main sensors for photon detection in nuclear and astroparticle physics experiments.

In recent years the search for cosmic neutrinos gave birth to enormous size experiments (Kamiokande, Super-Kamiokande, etc.) and even kilometric scale experiments as ICECUBE, Antares, and the future KM3NeT.

A very large volume neutrino telescope requires several hundreds of thousands photomultipliers. The performance of the telescope strictly depends on the performance of each PMT. For this reason it is mandatory to measure the characteristics of each single sensor.

To characterize a single PMT normally requires more than 8 hours. This means that it is not feasible to measure the parameters of each PMT of a neutrino telescope without a system able to test more than one PMT simultaneously.

For this application we have designed, developed and realized a system able to measure the main characteristics of 62 photomultipliers simultaneously. Two measurement sessions per day are possible. In this work we describe the design constraints and how they have been satisfied. Finally, we show the performance of the system and the first results coming from the test of few thousand tested PMTs.

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