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PMT characterization for the multi-PMT Digital Optical Module

Optical modules are the \"eyes\" of neutrino telescopes, detecting the Cherenkov light from charged particles created in neutrino interactions in the surrounding medium. In the framework of a planned upgrade of the current IceCube Neutrino Observatory as well as a future next-generation neutrino telescope at the South Pole, new optical modules are being developed which are expected to significantly enhance detector sensitivity. One of the concepts is the multi-PMT digital optical module (mDOM). Inside a glass pressure vessel it features 24 PMTs pointing isotropically in all directions.
While the current baseline PMT is the Hamamatsu R12199-02 HA with an entrance window diameter of 80 mm, alternatives, such as the HZC XP 82B20D with an increased window diameter of 88 mm are being investigated The talk will present the latest characterization results for both PMT models.

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