

Mechanical Design of Multi-PMTs for IWCD

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We will be using approximately 500 multi-PMTs (mPMTs) as the photosensors for the Intermediate Water Cherenkov Detector (IWCD), a new near detector for the approved Hyper-Kamiokande experiment that will be built by 2025. The IWCD mPMT design has nineteen 3" PMTs enclosed in a water-tight pressure vessel, along with the associated electronics. The 3" PMTs provide excellent spatial imaging of the neutrino-induced Cherenkov light ring. This talk will focus on the mechanical design of the mPMT. In particular, we will describe the design of the UV transparent acrylic domes and how we use gel to optically couple the dome to the PMTs. We will also summarize results from several mPMT prototypes, as well as the IWCD plans for mass production of mPMTs.

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Yes, this would have been presented at TIPP2020.

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