

The R&D of the Ultra Fast MCP-PMTs for High Energy Physics

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The Micro-Channel Plate (MCP) is a specially crafted microporous plate with millions of independent channels, which have secondary electron emission capability. The MCP could be used as the electronic multiplier amplifier in the PMTs. There are two types of MCP Photomultiplier tube (MCP-PMT), large-area electrostatic focusing PMTs (LPMT) and small size proximity focusing PMTs (FPMT) respectively. The LPMT always used in the large scalar neutrino detector for its large area efficiency photocathode. The small size FPMT is widely used in high energy physics for its fast time response, strong anti-interference ability. The MCP-PMT Collaboration Group in China has successfully research and developed the LPMT for JUNO in 2017, and plan to research a new type of FPMT with multi-anode readout (4X4, 8X8). We will introduce some design of the FPMTs for the time measurement, and the performance of the several different prototypes with different readout channels.

TIPP2020 abstract resubmission?

No, this is an entirely new submission.

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Primary author: QIAN, Sen (Institute of High Energy Physics,CAS)

Presenter: QIAN, Sen (Institute of High Energy Physics,CAS)

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