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P1.014 JUNO PMT system and prototyping test

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on behalf of the JUNO collaboration

The Jiangmen Underground Neutrino Observatory (JUNO) is a multi-purpose underground experiment and the largest liquid scintillator (LS) detector going for neutrino mass hierarchy, precise neutrino oscillation parameter measurement and studies of other rare processes which include but not limited to solar neutrino, geo-neutrino, supernova neutrinos and the diffuse supernova neutrinos background.

The 20" PMT system with ~ 17000 high quantum efficiency tubes, where including Hamamatsu 20" and newly developed MCP 20" tubes, is one of the keys of JUNO experiment for better energy resolution, good detector response etc. We are doing prototypes for PMTs, detectors to study/understand more detailed characters of the future detector.

With this poster, I plan to give you a full view about the JUNO PMT system and its prototyping test results, including PMT system layout, PMT testing system design, PMT water proof potting with electronics, installation idea, basics PMT performance, and the test results with JUNO prototype detectors.