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Hermetic Packaging and Measurements of the Gain, Time Resolution, and Spatial Resolution of a 20x20 cm² MCP-based Picosecond Photo-Detector ANDREY ELAGIN¹, University of Chicago, LAPPD COLLABORATION — The Large-Area Picosecond Photo-Detector Collaboration (LAPPD) is currently developing a large-area, modular photo-detector system composed of thin, planar, glass-body modules, each with two 20×20 cm² ALD-functionalized MCPs in a chevron geometry. We have successfully demonstrated a technique to make an indium vacuum seal between the photo-cathode window and the module body. With a complete detector system approximating the detector design, we have measured a gain of up to 2×10^7 , single-photon time-of-flight resolution of ~ 60 ps, differential time resolution of ~ 5 ps, and spatial resolution better than 1 mm in two dimensions using an anode configuration covering 90 cm by 20 cm.

¹Membership is being renewed.

Prefer Oral Session
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