Contribution ID: **403** Type: **Poster**

Characterization of Large Area Picosecond Photodetectors Using A Pulsed Laser

The Large Area Picosecond Photodetector Collaboration (LAPPD) is developing economical techniques for fabricating large area, glass-body microchannel-plate photomultiplier tubes (MCP-PMTs), scalable for use in a variety of High Energy Physics applications. An important capability of these photosensors is in precision measurements of arrival times and positions of single photons. Prototype LAPPD systems have demonstrated the best combination of time resolution and area coverage of any existing photosensor technology, providing better than 50 picosecond single-photoelectron time resolutions over an 87-88% active area covering 400 cmˆ2. LAPPDs are also imaging phototubes, able to measure the positions of photon hits with sub-centimeter precision within a single tube. In this talk we will discuss work by the University of Chicago and Argonne National Laboratory characterizing the single photo-electron response of LAPPD detector systems using a sub-picosecond pulsed Ti:Sapphire laser. The analog response of our test LAPPD system is characterized via readout by a digital oscilloscopes or by the 60 channel, 1.5 GHz, 10 Gsample/second front-end system developed by the University of Chicago for the project.

Primary author: WETSTEIN, Matthew (University of Chicago)

Co-authors: ELAGIN, Andrey (University of Chicago); ADAMS, Bernhard (Argonne National Laboratory); RAZIB, Obaid (Illinois Institute of Technology); NORTHOP, Richard (University of Chicago); WAGNER, Robert (Argonne National Laboratory); OBERLA, eric (uchicago); FRISCH, henry (u)

Presenter: WETSTEIN, Matthew (University of Chicago)

Track Classification: Sensors: 1d) Photon Detectors