Contribution ID: **522** Type: **Poster**

Timing resolution of an LAPPD prototype measured with CERN test beams

Monday, 27 May 2024 10:06 (1 minute)

Large Area Picosecond PhotoDetectors (LAPPDs) are photosensors based on MicroChannel Plate (MCP) technology with about 400 cm2 sensitive area. The external readout plane of a capacitively coupled LAPPD can be segmented into pads providing a spatial resolution down to 1 mm scale. The LAPPD signals have about 0.5 ns rise time followed by a slightly longer fall time and their amplitude reaches a few dozens of mV per single photoelectron.

I will report on the measurement of the time resolution of an LAPPD prototype in a test beam exercise at CERN PS. Most of the previous measurements of LAPPD time resolution had been performed with laser sources. I report time resolution measurements obtained through the detection of Cherenkov radiation emitted by high energy hadrons. Our approach has been demonstrated to be capable of measuring time resolutions as fine as 25-30 ps. The available prototype had performance limitations, which prevented us from applying the optimal high voltage setting. The measured time resolution for single photoelectrons is about 80 ps r.m.s.

Collaboration

ePIC

Role of Submitter

I am the presenter

Primary author: AGARWALA, Jinky (INFN - Trieste)

Presenter: AGARWALA, Jinky (INFN - Trieste)

Session Classification: Photo Detectors and Particle ID - Poster session

Track Classification: T2 - Photo Detectors and Particle ID