



Contribution ID: 171

Type: Mini Oral and Poster

## How to improve the performance of the fast timing detector

Wednesday 14 October 2020 16:24 (1 minute)

The Fast timing detector is widely used for its picosecond (ps) level time resolution, such as the small MCP-PMTs with about 50ps@SPE, some fast SiPM with about 100ps@SPE. The time characteristics of these types of fast timing photodetector refer to rise time, fall time and electron transition time of the output signal. The transition time is the interval from the generation of photoelectrons to the anode output signal. The transition time spread (TTS) describes the distribution of transition time and characterizes the time resolution of PMT (MCP-PMT, SiPM). In the lab, for the performance of the Fast timing detector test, the light source, the electronic device board, the DAQ system are all affected the results directly. In this manuscript, some comparative test data will be show and discussed for how to improve the performance of the fast timing detector.

### Minioral

Yes

### IEEE Member

No

### Are you a student?

No

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**Session Classification:** Poster session C-01

**Track Classification:** Front End Electronics and Fast Digitizers