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Study on the Timing Performance of the SiPMs

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Silicon Photomultipliers (SiPMs) are new type of high-performance semiconductor detectors, which inherit most of the advantages of semiconductor detectors and have good performance in terms of gain, signal-to-noise ratio and response speed. SiPM also has high photon detection efficiency and excellent time resolution, which is comparable to high-performance PMT. This manuscript tested the timing characteristics of three types of SiPMs (Hamamatsu, SensL and NDL). The rise time of SensL J-30035 fast output port can reach 500 ps, the limit time resolution is 22.2 ps. The rise time of DNL SiPM model 11-3030C-S is 1~2 ns, and the limit time resolution is 21.8 ps. The rise time of Hamamatsu SiPM model S13360-1325CS is 1~2 ns, and the limit time resolution is 193.6 ps. Therefore, SensL J-series SiPMs have the best timing characteristics.

Minioral

Yes

IEEE Member

Yes

Are you a student?

No

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