

Characterization of Irradiated APDs for Timing Applications

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Avalanche Photo Diodes (APDs) produced by Radiation Monitoring Devices are examined as candidate timing detectors for HL-LHC applications.

These APDs are operated at 1.8 kV, resulting in a gain of up to 500.

The timing performance of the detectors is evaluated using a pulsed laser.

The effects of radiation damage on current, signal amplitude, noise, and timing of the APDs are evaluated using detectors irradiated with neutrons up to $\Phi_{eq} = 10^{15} \text{ cm}^{-2}$.

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