

Charge collection and trapping effects in 75 μm , 100 μm and 150 μm thick n-type epitaxial silicon diodes after proton irradiation

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Epitaxial silicon pad diodes of 75 μm , 100 μm and 150 μm thickness and both ST and DO n-type material have been investigated after 24 GeV/c proton irradiation (CERN PS) in an equivalent fluence range between $1\text{e}14$ n/cm² and $1\text{e}16$ n/cm². A new TCT setup with 670 nm laser light enabled the measurement of time-resolved electron current pulse shapes in 150 μm thick diodes. Thus the charge correction method could be used in order to extract the trapping time constant. Moreover CCE measurements with 5.8 MeV alpha-particles will be presented and compared to simulation.

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