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Edge-TCT characterization of 24 Gev/c proton irradiated p-type silicon detectors

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Oxygen-enriched silicon, both DO Float Zone and Magnetic Czochralski has proved to be more radiation tolerant than standard silicon in harsh radiation environments. We are going to summarize the results obtained with the Edge-TCT technique on field development with annealing in FZ and MCz n-on-p detectors from the 2010 Micron production batch. The studied structures were exposed to high fluences (1e16 p/cmˆ2) of 24 GeV/c protons at the CERN PS and subsequently went through several annealing steps at 80℃. Clear evidence of charge multiplication mechanism at long annealing times will be provided as well as the presence of a bistable defect activated by moderate current injection, heavily affecting the observed neff.

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