

Radiation induced point- and cluster-related defects with strong impact to damage properties of silicon detectors

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This work is focusing on the investigation of those radiation induced defects causing degradation effects of Silicon detector performance.

Comparative studies of the defects induced by irradiation with ^{60}Co - γ rays, 23 GeV protons and 1 MeV equivalent reactor neutrons revealed the existence of some point defects and cluster related centers having a strong impact to damage properties of Si diodes. The detailed relation between the “microscopic” reasons as based on defect analysis and their “macroscopic” consequences for detector performance are presented and discussed.

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