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Defect characterization in boron doped silicon sensors after exposure to protons, neutrons and electrons

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The radiation tolerance of 50 µm thin p-type Si epitaxial (EPI) devices differing in resistivity (initial Boron concentration) has been studied for 24 GeV/ c protons, reactor neutrons and 5.5 MeV electrons in the fluence range between 1E+10 cmˆ−2 and 1E+15 cmˆ−2 . The talk will summarize an update on characterisation and identification of the radiation-induced defects with a special focus to Boron-related ones responsible for deterioration of sensor properties. The data have been achieved with the TSC and DLTS techniques in the framework of the RD50 Acceptor Removal Project.

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