

Effect of Thickness on the Performances of P-type Silicon Microstrip Sensors after Hadron Irradiation.

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Asbtract

Silicon microstrip prototype sensors have been produced in two thicknesses (140 and 300 μm) to study the possible advantages of thin devices for high energy physics applications in a high radiation environment. The use of thin devices has been argued would lead to higher electric field at a given applied voltage and, therefore, in heavily irradiated devices, may achieve a better charge collection efficiency than with standard thickness devices. The price to pay would be the reduced signal at lower radiation doses. The effect of the thickness on the charge collection performances at various neutron doses is presented and discussed.