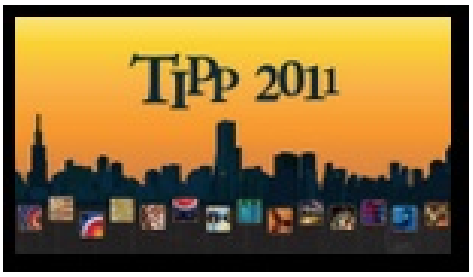


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# Optimization of Strip Isolation for Silicon Sensors

*Saturday 11 June 2011 15:00 (20 minutes)*

Precision machines like electron-positron-colliders and b-factories demand for low material budget and high resolution when it comes to particle tracking. A low material budget can be achieved by using thin double sided silicon detectors (DSSDs) and lightweight construction. Since thin sensors only give low signals, one has to be very careful to achieve high charge collection efficiency, which requires an appropriate sensor design.
In this talk we present a detailed investigation of different p-stop patterns used for strip isolation on the n-side of p-on-n sensors. We developed test sensors featuring the common p-stop, the atoll p-stop and a combined p-stop pattern, whereas for every pattern four different geometric layouts were considered. These sensors were tested at the Super Proton Synchrotron (SPS) at CERN (Geneva, Switzerland) in an 120 GeV hadron beam. Then they were irradiated to 70 MRad with a 60Co source and subsequently tested in the same beam as before.
The conclusions of these tests will be applied to the design of DSSDs for the Belle II experiment at KEK (Tsukuba, Japan).

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