

8th "Trento" Workshop on Advanced Silicon Radiation Detectors (3D and p-type)

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Diamond Sensors for HE Frontier Experiments

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With the first three years of the LHC running well underway, ATLAS and CMS are planning to upgrade their innermost tracking layers with more radiation hard technologies. Chemical Vapor Deposition (CVD) diamond is one such technology. CVD diamond has been used extensively in beam condition monitors as the innermost detectors in the highest radiation areas of BaBar, Belle, CDF and all LHC experiments. This talk will present the issues which arose in the ATLAS Beam Conditions Monitor (BCM) and Diamond Beam Monitor (DBM) projects both of which are based on CVD diamond with the goal of elucidating the issues that should be addressed for future diamond based detector systems. The talk will also present the first beam test results of prototypes of a new diamond detector geometry which should further enhance the radiation tolerance of diamond.

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Session Classification: Introduction