



detector seminar

SPEAKER: Norbert Wermes
TITLE: **Monopix - radiation hard monolithic CMOS pixel detectors**
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ABSTRACT

Since 2013 Bonn University has developed - in collaboration with CERN, CPPM and IRFU - depleted monolithic active pixel sensors (DMAPS) employing CMOS technology. The focus was especially on radiation hard designs suitable for operation in LHC-like environments. Two main lines of development have emerged from an initial study of different technologies: (a) large electrode designs with electronics embedded in the collection well, realised in LFoundry 150 nm technology, and (b) small electrode designs with electronics set aside the charge collection node, realised in Tower Jazz 180 nm. This talk will present the results of these developments with respect to design features and performance with a focus on the column-drain readout type realised in the large chips LF-Monopix1 and 2 as well as TJ-Monopix1 and 2. Also “passive” CMOS sensors, suitable for ATLAS and CMS hybrid pixels, have been developed in this context and will be presented.