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Characterization of Monolithic Active Pixel Sensors for future collider experiments.

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Abstract

In high-energy physics experiments, Monolithic Active Pixel Sensors (MAPS) have become crucial components of vertex and tracking detectors over the past decade due to the integration of readout circuitry with the detection volume in a single chip.

The low material budget requirement to achieve precise tracking and vertexing capabilities for upgrade of HEP experiments such as ALICE at LHC and future experimental facilities like ePIC at EIC, leads a direct attention towards an ultra-thin (a few tens of μm), bent, wafer-scale silicon sensors produced with stitching technology.

Recent ongoing activities performed at the INFN and UniBa Laboratory in Bari will be described. The characterization of analogue silicon pixel sensors of 65 nm CMOS technology using electrical test pulsing and ^{55}Fe as a soft X-ray source will be discussed. Furthermore, a study on timing performance will be presented.

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Session Classification: Poster session with snacks and coffee