FRONTIER DETECTORS FOR FRONTIER PHYSICS



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3D silicon detectors

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3D silicon detectors were successfully fabricated in different facilities in Europe and USA in 2010-2011 by a collaboration of ~90 scientists and processing laboratories. Sensors with full compatibility with large pixel readout electronic chips have currenly an yield of ~60%. In 3D, electrodes are micromachined inside the silicon wafer bulk rather than being implanted on its surfaces. This novel dimension in silicon imaging opens new possibilities for the future. This presentation will explore the status of 3D silicon technology, its strengths, technological challenges and perspectives for future applications is high energy physics and other areas.

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