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[P08] Performance of the 2S Modules of the CMS Phase 2 Tracker in a Test Beam environment

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The present CMS tracker will be replaced by a new improved tracking detector for operation at the High Luminosity LHC (HL-LHC). The outer part of the new tracker will comprise modules with two closely spaced parallel silicon sensors with front-end ASICs capable of transmitting information about high p_T tracks to the CMS Level-1 (L1) trigger system at the 40 MHz beam bunch crossing rate. The inclusion of tracking information in the L1 trigger decision will be crucial to select events of interest with high efficiency at the HL-LHC. The three outermost layers of the tracker will be made of strip-strip (2S) sensors and read out by the CMS Binary Chip (CBC) designed to correlate hits on the pair of sensors, forming the so-called track stubs. Three full-sized 2S modules, equipped with the final version of the CBC have been tested in a beam test setup at DESY, Germany. The performance of these prototype 2S modules will be discussed in detail.

Presenter: Mr SAHA, Gourab (Saha Institute of Nuclear Physics (IN))

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