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# Test-beam performance evaluation of CLICpix2 fine-pitch hybrid silicon pixel detector prototypes

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The experimental conditions at future colliders pose new challenges for silicon pixel technologies. In particular, the next generation of inner detector sub-systems will require simultaneously high efficiency, high resolution, low material budget, and low power consumption pixel detectors. One example is the vertex detector of the proposed Compact Linear Collider (CLIC), an electron-positron collider achieving centre-of-mass energies between 380GeV and 3TeV. To fulfil these ambitious targets for the inner detectors, the CLICpix2 fine-pitch hybrid readout ASIC has been designed using a 65 nanometre CMOS process. The ASIC has 25x25 micrometre pitch pixels and is capable of simultaneous per-pixel charge and time measurements. CLICpix2 samples have been bump-bonded to 130 micrometre planar active-edge silicon sensors and their performance assessed through detailed test-beam data analysis. This contribution will present the performance evaluation of two CLICpix2 planar sensor assemblies, focusing on spatial resolution, timing resolution, and efficiency measurements.

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