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Latest developments and characterisation results of the MALTA sensors in TowerJazz 180nm for High Luminosity LHC

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MALTA is a novel monolithic active pixel CMOS sensor chip designed in TowerJazz 180nm imaging technology which targets radiation hard applications for the HL-LHC and beyond. Several process modifications and front-end improvements have been investigated and have resulted in radiation hardness up to 2e15 n/cm2 with time resolution below 2 ns. Further improvements to detector efficiency have been explored by changing the starting material for these sensors and using Czochralski instead of epitaxial silicon. This contribution will present the results from latest submission from the extensive lab testing and the characterization in particle beam tests with special focus on the new MALTA2 sensor.

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