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Radial strip detectors in Allpix-Squared

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The Allpix-Squared simulation toolkit has long been used by the ATLAS ITk Collaboration to perform simulations of pixel and strip silicon detectors.

In this contribution, a new functionality added into the toolkit is presented, enabling simulations of ATLAS ITk strip end-cap detectors featuring a trapezoidal sensor shape with detection strips fanning out radially from a common focal point.

The implementation has been tested by comparing obtained simulation outputs with available test beam measurement data obtained at the DESY-II test beam facility in 2018. Further simulation studies based on this implementation, such as the ATLAS ITk Strips End-Cap System Test, are already ongoing.

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