2nd Allpix Squared User Workshop



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Simulating hexagonal pixel cells in Allpix Squared

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Silicon sensors featuring a hexagonal pixel pattern benefit from an accelerated charge collection in the pixel corners and reduced charge sharing due to fewer neighbouring pixel cells, which has the potential to improve time resolution and efficiency. The detector models commonly used in Allpix Squared assume rectangular pixel cells and cannot be used for devices with a hexagonal grid. To investigate the hexagonal pixel arrangement with Monte Carlo simulation, the HexagonalPixelDetectorModel is implemented, a new detector model class that is specifically designed for hexagonal pixel cells. In this contribution, the new detector model is introduced and the design concepts are outlined.

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