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Hexagonal silicon pixel simulations

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Hexagonal pixels can be beneficial compared to rectangular geometries. By using a hexagonal pixel grid, the amount of shared charge in pixel corners is reduced, allowing for efficient operation over a larger threshold range for small signals. The pixel corners also have a larger opening angle compared to rectangular pixels, significantly impacting the electric field in this regions. A hexagonal grid also has a smaller distance between the pixel borders and the collection electrodes which allows for smaller low-field regions and faster charge collection.
This contribution will describe simulation of hexagonal pixels in Allpix Squared. Examples will be given using both simple field approximations in the framework, and simulation and inclusion of TCAD fields in the context of the Tangerine project. The simulations will be described in detail, and comparisons between rectangular and hexagonal pixel simulation results shown.

Will the talk be given in person or remotely?

In person

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