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Simulation of Radial Strips for Comic Ray Studies

Monday 22 May 2023 16:35 (25 minutes)

The ATLAS Inner Detector (ID) will be replaced with a new all-silicon tracker (ITk) for LHCs high luminosity phase. ITk will consist of a pixel and a strip subdetector, both of which subdivide into barrel and endcap sections. The endcap strip modules use a radial strip geometry that resembles a polar coordinate system. Groups of these modules are then placed on a common support structure (petals) which are arranged in discs to form two endcaps of the detector. Additionally, an 1/8 slice of one endcap (called "System Test") is being commissioned at DESY. Among many characterisation measurements, it is also planned to take cosmic ray data with this setup to verify tracking and overall detector performance.

A new implementation of both the radial strips geometry and cosmic rays was developed for the simulation framework Allpix2. Additionally, an effort to implement this geometry also in the Corryvreckan framework to allow for tracking is currently ongoing. This talk will cover the simulation of the radial strips geometry used in the ALTAS ITk Strips Endcap modules R0 - R5 in the context of Cosmic Ray studies to be performed with the Endcap System Test.

Will the talk be given in person or remotely?

In person

Author: CASPAR, Maximilian (DESY)

Co-author: PRIVARA, Radek (Palacky University (CZ))

Presenter: CASPAR, Maximilian (DESY)

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