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# Simulating a cosmic ray detector for physics outreach projects

*Wednesday 22 May 2024 15:20 (25 minutes)*

Encouraging young students to study STEM subjects is an important responsibility of the scientific community. Small-scale detectors in particle physics outreach serve as an excellent gateway for discussing physics concepts. To determine the feasibility of the ITk-pix sensor for use in an outreach cosmic ray detector, a simulation has been developed with Allpix-Squared. Using the DepositionCosmics module to accurately simulate the cosmic muon environment at sea level, eight RD53A sensors were tested with up to 5,000,000 events. Simulation showed that this number of sensors will have a high enough area to produce a detection rate of 36.37 muons per minute, providing enough data for an engaging display. This indicates that the detector will be successful in facilitating the introduction of particle physics to high school students.

## Will the talk be given in person or remotely?

In person

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