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[B02] Pixelated 3D sensors for tracking in radiation harsh environments

Tuesday 6 October 2020 21:00 (30 minutes)

The High Luminosity upgrade of the CERN Large Hadron Collider (HL-LHC) will be able to reach a peak instantaneous luminosity of $5 \times 10^{34} \text{ cm}^{-2}\text{s}^{-1}$. The innermost detectors of CMS and ATLAS experiments will have to cope with unprecedented requirements on radiation hardness. At the end of the operation period, radiation levels are expected to reach values above $2.6 \times 10^{16} \text{ n}_{\text{eq}}/\text{cm}^2$. Sensors based on 3D pixel technology, with intrinsic radiation tolerance, are being considered for the innermost layers of the vertex detectors of several HL-LHC experiments. This presentation gives an overview of the ongoing characterization of the pixelated 3D sensor technology, their performance and their current development status for tracking on radiation harsh environments.

Presenter: Dr DUARTE CAMPDERROS, Jordi (Universidad de Cantabria and CSIC (ES))

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