

## Recent Progress on 3D Silicon Detectors

3D silicon detectors, in which the electrodes penetrate the sensor bulk perpendicular to the surface, have recently undergone a rapid development from R&D over industrialisation to their first installation in a real HEP experiment. Right now the ATLAS Insertable B-Layer (IBL) is taking first collision data with 3D pixel detectors. At the same time, preparations are advancing to install 3D pixel detectors in forward trackers such as the ATLAS Forward Proton (AFP) detector, which might be installed as early as the end of this year, or the CMS-TOTEM PPS. For those experiments, the main requirements are a slim edge and the ability to cope with non-uniform irradiation. Both has been shown to be fulfilled by 3D pixel detectors. For the HL-LHC pixel upgrades of the major experiments (ATLAS, CMS, LHCb), 3D detectors are a promising candidate for the innermost pixel layers to cope with harsh radiation environments up to fluences of  $2 \times 10^{16} n_{eq}/cm^2$  thanks to their excellent radiation hardness at low operational voltages and power dissipation and moderate temperatures. This presentation will give an overview on the recent developments of 3D detectors related to these projects and the future plans.

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