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3D sensors

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3D sensors have a been successfully installed in the innermost pixel layer of the ATLAS Detector at the CERN-LHC in 2014, after 20 years of the proposal of the original idea, and are currently being considered for all the major LHC detector upgrades. In the 3D design electrodes are processed inside the silicon bulk rather than being implanted on the wafer's surface. This results in an improved speed and signal efficiency after irradiation due to the strong and homogeneous electric field throughout the full sensor thickness and allows for the presence of active edges with sensitivity up to the device physical edge. This presentation will highlight the technology state of the art, the future trends and applications of 3D sensors in high energy physics and other fields.

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