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## Towards the production of the 3D pixel detectors for the upgrade of the ATLAS Inner Detector

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The ATLAS Inner Detector will be completely replaced with an all-silicon Inner Tracker (ITk) to withstand the harsh operational conditions of the High Luminosity LHC at CERN. The ITk pixel detector will be located in the innermost part of the tracker. It will be instrumented with different sensor technologies, 3D and planars, according to the expected total fluence, which reaches up to  $1.9 \cdot 10^{16}$  neq/cm<sup>2</sup> (safety factor of 1.5 included), and the required performance.

Pixel sensors with 3D technology will instrument the innermost layer (L0), with pixel size of  $50 \times 50 \mu\text{m}^2$  in the endcap and  $25 \times 100 \mu\text{m}^2$  in the barrel. A large effort to study the variety of pre-production pixel detectors, designed and produced by FBK and Sintef is ongoing. An overview of the results is presented, with particular focus on test beams campaigns.

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**Classifica Sessioni:** 3D