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## Quality control for ATLAS ITk strip sensor production

With the upgrade of the LHC to the High-Luminosity LHC (HL-LHC), scheduled to commence in 2024, the Inner Detector will be replaced with the new all-silicon ATLAS Inner Tracker (ITk) to maintain tracking performance in this high-occupancy environment and to cope with the increase of approximately a factor of ten in the integrated radiation dose. The outer four layers in the barrel and six disks in the endcap region will consist of strip modules, built with single-sided strip sensors and glued-on hybrids carrying the front-end electronics necessary for readout.

The strip sensors are manufactured as n-in-p strip sensors from high-resistivity silicon, which would allow operation even after fluences expected towards the end of the proposed lifetime of the HL-LHC. Prototypes of different sensor designs have been extensively tested electrically as well as in testbeam setups, yielding mixed results especially in terms of long-term stability. Since pre-production is scheduled to start at the end of 2019, it has become increasingly necessary to have a quality control (QC) procedure for strip sensors which can identify emerging problems with manufacturing results for single sensors or whole batches, ranging from generic electric properties to reliability of long-term operation, as well as understanding the underlying processes. An overview over the QC procedure and its results will be given as well as details about the ongoing challenges.

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