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SCT ATLAS Upgrade

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The LHC is currently on its first upgrade phase (PHASE-0) and anticipating 2 further upgrades with the last phase (PHASE-II) foreseen for 2022-2023. PHASE-II will aim to increase the integrated luminosity of the LHC to ten times fold the original LHC design luminosity. The so called HL-LHC will introduce harsher conditions in terms of particle count and radiation dosage. An international R&D collaboration is currently working on designing a new structure for part of the inner detector of the ATLAS experiment, the Semi-Conductor Tracker (SCT). The new SCT has planar sensors fabricated from p-type wafers that are suitable for the HL-LHC. The sensors and their readout electronics have special support structures called "staves"for the barrel region of the detector and "petals"for the end-caps region. Several prototypes have been produced with different readout electronics, powering schemes and other system aspects.

This talk will present the progress done so far on the design of the SCT and in particularly focus on the electrical design and testing of a multi-module prototype "stavelet"that serves as a proof of design for the stave.

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