

Module assembly and metrology for the Phase-2 Upgrade of the Strip tracking detector of the ATLAS experiment

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For the phase-2 upgrade of the LHC in about ten years from now, several detector components of the ATLAS experiment will be replaced. The planned ten times higher LHC design luminosity will result in severe radiation dose and high particle rates. The current inner detector of the ATLAS experiment will be replaced by an all silicon tracking detector.

The layout of the upgrade silicon tracking detector envisages low mass and modular double-sided structures for the barrel and forward region. Modules, consisting of a silicon sensor and readout electronics, are foreseen to be assembled double-sided on larger carbon-core structures. Detailed plans are layout and prototyping of many components is ongoing. The talk will show the status of prototyping, assembly procedures and mechanical results of the prototypes. Both requirements and results on modules and larger structures, called stavelets and petalets, will be presented.

In addition, the experience of the prototyping and metrology results will be discussed.

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