Contribution ID: **158** Type: **oral**

Staves and Petals: Multi-module local support structures of the ATLAS ITk Strips Upgrade

Tuesday, May 23, 2017 11:54 AM (18 minutes)

The ATLAS Inner Tracker (ITk) is an all-silicon tracker that will replace the existing inner detector at the Phase-II Upgrade of ATLAS. The outermost part of the tracker consists of the strips tracker, in which the sensors elements consist of silicon micro-strip sensors with strip lengths varying from 1.7 to up to 10 cm. The current design, at the moment under internal review in the Strips part of the Technical Design Report (TDR), envisions a four-layer barrel and two six-disk endcap regions. The sensor and readout units ("modules") are directly glued onto multi-module, low-mass, high thermal performance carbon fiber structures, called "staves" for the barrel and "petals" for the endcap. They provide cooling, power, data and control lines to the modules with a minimal amount of external services. An extensive prototyping program was put in place over the last years to fully characterize these structures mechanically, thermally, and electrically. Thermo-mechanical stave and petal prototypes have recently been built and are currently under intensive study. This contribution will focus on describing the stave and petal structures and the prototyping work carried out so far. In addition, some details of the work carried out on the global supports which will hold the staves and petals in place will also be presented.

Primary author: GARCIA-ARGOS, Carlos (University of Freiburg)

Presenter: GARCIA-ARGOS, Carlos (University of Freiburg)

Session Classification: R4-Semiconductor detectors(2)

Track Classification: Semiconductor detectors