

The SLIM proposal for the ATLAS ITK pixel barrel

Monday 15 June 2015 17:00 (30 minutes)

The Pixel ITK mechanics after having defined the engineering requirements is now considering new options for module and service local support for the barrel region. While targeting for a material budget as low as possible and a layout that ensures the perfect hermeticity, the module have to be able to safely operate with respect to the thermal run away effect in the silicon sensor whatever technology is considered. The SLIM (Stiff Longerons for ITK Modules) concept is a novel approach that tries to combine interesting features that was proposed so far. The SLIM concept is based on a layout that allows a silicon surface optimization using barrel sensor orientation combined with tilted modules with respect to eta. It is also proposed to combine a modular approach on a self-supported structures designed for thermo-mechanical performances. It will be showed that the material budget which is one of the key parameters can be optimized and scaled according to the thermal requirements while not degrading the tracking performances and the mechanical stability. This talk will presents and describes the engineering solutions chosen and the performances achieved.

Presenter: MICHAL, Sebastien (Universite de Geneve (CH))