

Comparative investigation of irradiated small-pitch 3D strip detectors

Tuesday 5 June 2018 14:30 (20 minutes)

The HL-LHC is expected to reach luminosities of up to 3000 fb^{-1} ; the upgrade of innermost tracking detectors of the ATLAS experiment foresees a decrease in pixel size in order to enhance the positional resolution. In this talk, the collected charge characterisation of different pixel size geometry will be presented. Following irradiation, sensors with $50\mu\text{m} \times 50\mu\text{m}$ pixel size show higher charge collection efficiency than $100 \mu\text{m} \times 25 \mu\text{m}$ (1E), due to the smaller distance between the electrodes. The latter implies a shorter drift distance and a lower trapping probability of the generated electron-hole pairs.

Presenter: MANNA, Maria (Centro Nacional de Microelectronica - CNM-IMB-CSIC)

Session Classification: Pixel and Strip Sensors