Contribution ID: **17** Type: **Talk (invited speaker only)**

[C07] The novel ALICE Inner Tracking System based on truly cylindrical, wafer-scale Monolithic Active Pixel Sensors

Wednesday 7 October 2020 23:00 (30 minutes)

ALICE is planning to replace its innermost tracking layers during the LHC Long Shutdown 3 with a novel detector that will be as close as 18 mm to the interaction point and will have a target thickness of below 0.05 %X0 per layer. To achieve these figures, a wafer-scale Monolithic Active Pixel Sensor in 65 nm technology is being developed. The sensors, fabricated on 300 mm wafers, will reach dimensions of up to 280 mm × 94 mm. They will subsequently be thinned down to values between 20-40 µm, where they become flexible and are bent into truly cylindrical half-barrels.

This contribution will review the detector concept and will lay out the R&D path. Most importantly, first results from laboratory and beam tests with bent sensors will be presented.

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Session Classification: Monolithic II