Contribution ID: **832** Type: **Parallel session talk**

The silicon tracking system of the future ALICE 3 experiment at the LHC

Thursday 18 July 2024 15:39 (18 minutes)

ALICE 3 is the next generation heavy-ion experiment proposed for the LHC Runs 5-6. Its tracking system includes a vertex detector, on a retractable structure inside the beam pipe to achieve a pointing resolution of better than 10 microns for p_{T}>200 MeV/c, and a large-area tracker covering 8 units of pseudorapidity ($|\eta|$<4). The tracking system will be based on Monolithic Active Pixel Sensor (MAPS) technology.
An intensive R&D program has started, to meet the challenging detector requirements: the innermost vertex detector layer, placed at 5 mm from the interaction point, must withstand an integrated radiation load of 9x10^{15} 1 MeV neq/cm^2 NIEL; the tracker will cover 50 m^2, extending to a radius of 0.8 m and a total longitudinal length of 8 m.
This contribution will discuss the detector requirements and target sensor specifications, the ideas for mechanics and integration, and the R&D challenges expected for the implementation of the ALICE 3 tracking system.

Alternate track

I read the instructions above

Yes

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