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The new Inner Tracking System of the ALICE experiment

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The ALICE experiment will undergo a major upgrade during the next LHC Long Shutdown (LS2) scheduled in 2019-20 that will allow to study in detail the QGP properties exploiting the increased Pb-Pb luminosity expected during Run 3 and Run 4.

The replacement of the existing Inner Tracking System (ITS) with a completely new ultra-light high-resolution detector is one of the cornerstones within this upgrade program. The main motivation of the ITS upgrade is to provide ALICE with an improved tracking capability and impact parameter resolution at very low transverse momentum, as well as to enable a substantial increase of the interaction rate readout.

The new ITS will consist of seven layers of an innovative Monolithic Active Pixel Sensors with the innermost layers sitting at only 22 mm from the interaction point. This talk will focus on the design and the physics performance of the new ITS, as well as the technology choices adopted. The status of the project and the results from the prototypes characterization will also be presented

Preferred Track

Future Experimental Facilities, Upgrades, and Instrumentation

Collaboration

ALICE

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