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The ALICE Inner Tracking System

The ALICE Inner Tracking System 2 (ITS2) is the largest Monolithic Active Pixel Sensor (MAPS) tracking detector ever built, comprising 12.5 billion pixels covering a sensitive area of $10\,\mathrm{m}^2$. Installed in 2021, it has been fully operational throughout LHC Run 3, recording pp, Pb–Pb, and light-ion collisions.

This contribution provides an overview of the ITS2 detector concept, from its design principles to its in-situ performance during data taking. Particular attention is given to operational experience, including insights gained during the Pb–Pb run and the challenges posed by beam-related backgrounds.

The lessons learned from ITS2 operation -especially regarding background mitigation and detector stability- offer valuable guidance for the development of next-generation systems such as ITS3 and the tracking detectors envisioned for ALICE 3.

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