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Pixel detectors for experiments at the NICA collider

Improving the tracking accuracy and efficiency close to the interaction point in modern experiments aiming study of heavy-ion collisions, require the development of new detector systems. One of the most promising technology is based on monolithic active pixel sensors using CMOS (complementary metal-oxide-semiconductor). This technology, adopted by the ALICE experiment to develop a completely new Inner Tracking System, will be installed in 2020.

This report presents a new generation of the MAPS developed by the ALICE collaboration. It covers the detector layout, the main components and their development and characterisation and possible use of this detector to future collider experiments. Obtained information about characteristics of these detectors allows us to consider MAPS as one of the best options to build the internal tracking systems for the MPD and SPD experiments at the NICA collider.

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