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Mechanic and cooling systems for the new pixel detectors in High energy physics experiments

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Nowadays the silicon detectors are playing a significant role in the experimental studies of the nuclear matter properties. Using ultra-thin silicon pixel detectors for high-precision identification of charged particles it should be possible to investigate the new properties of nuclear matter arising in relativistic nuclear collisions. To provide stable operational conditions of such detectors, the efficient mechanic and cooling systems at minimum material budget are used. In present work, the ideas and developments for mechanic and cooling systems for the new vertex detectors based on silicon pixel sensors have been presented. The reported study was supported by RFBR, research project No. 18-02-40075.

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