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[C02] Latest depleted CMOS sensor developments in the CERN RD50 collaboration

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Depleted Monolithic Active Pixel Sensors (DMAPS) using commercial CMOS and High-Voltage CMOS (HV-CMOS) processes are one of the main candidate technologies for future tracking detectors in high luminosity colliders. Its capability of integrating the sensing diode into the CMOS wafer hosting the front-end electronics allows for reduced noise and higher signal sensitivity. They are suitable for high radiation environments due to the possibility of applying high depletion voltage and the availability of relatively high resistivity substrates. The use of a CMOS commercial fabrication process leads to their cost reduction and allows faster construction of large area detectors. Despite the advantages and good performance demonstrated by DMAPS, these sensors still require further research to improve their time resolution and radiation tolerance to cope with the challenging environment of future particle physics experiments. In this context, the study and development of DMAPS is one of the priorities of the CERN-RD50 collaboration.

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