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Recent results from the R&D on the MIMOSIS CMOS MAPS

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The CMOS Sensor MIMOSIS is being developed to equip the Micro Vertex Detector (MVD) of the CBM experiment at FAIR in Darmstadt, Germany. It will feature 1024×504 pixels and combine a time resolution of $5 \mu\text{s}$ with a spatial resolution of $\sim 5 \mu\text{m}$. Moreover, it will have to handle a peak rate of 80 MHz/cm^2 and radiation doses of 5 MRad and up to $1e14 \text{ neq/cm}^2$ per year. It is being developed within a joined R&D program of IPHC Strasbourg, Goethe University Frankfurt and GSI.

Prototypes of MIMOSIS have been tested in an intense test program among others on their response to minimum ionizing particles, their radiation tolerance and their tolerance to direct heavy ion impacts. We discuss about the sensor requirements and report about the status of the R&D program. Moreover, we report the results of multiple beam tests obtained with close to final full-feature full-size prototypes.

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