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News from the Micro Vertex Detector of CBM

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The Compressed Baryonic Matter Experiment (CBM) is one of the core experiments of the future FAIR facility. It will explore the phase diagram of strongly interacting matter in the region of high net-baryon densities with numerous probes including open charm. The Micro Vertex Detector (MVD) will enable secondary vertex reconstruction with a resolution along the beam axis of 10 – 20 μm , enhance background rejection in dielectron spectroscopy and extend the capability in the reconstruction of weak decays to channels with a neutral particle in the final state. The detector comprises up to four stations placed next to the target in vacuum. The stations are populated with 50 μm thin, highly-granular customized Monolithic Active Pixel Sensors. A new version called MIMOSIS, featuring a spatial resolution of $<5 \mu\text{m}$, a readout speed in the order of 5 μs as well as radiation tolerance of $>10^{13} \text{ neq/cm}^2$ and 3 Mrad is currently developed at IPHC in Strasbourg.

This contribution will include an update of the MVD project status and present first physics performance studies using the new MIMOSIS sensors geometry and performance parameters.

Collaboration

CBM

Content type

Experiment

Centralised submission by Collaboration

Presenter name already specified

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