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**Beam and Background Monitoring System for**

**the CBM Experiment at FAIR/GSI.**

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In this report, we present a proposal of the design for Beam and Background Monitoring System for the CBM Experiment at FAIR/GSI.

The proposed design and expected functional characteristics of the monitoring system for the future CBM experiment (GSI/FAIR) [1] are presented. This MS-CBM-R1 system will be created at the Institute of Nuclear Research of the National Academy of Sciences of Ukraine based on the physical and technical principles of metal foil detectors (MFD). The main tasks of the system are to monitor the stability and reproducibility of the experimental conditions, including the reflection of the interaction area using the response asymmetry method of its sensors, which are arranged around the beam axis in a plane perpendicular to the beam axis and symmetrically in pairs in the vertical and horizontal directions. A similar system successfully operates in the LHCb experiment (CERN) [2], demonstrating the reliable capability of such monitoring.

1. N. Ahmad, ….V. Kyva, V. Militsija, I. Momot, M. Pugach, V. Pugatch, D. Storozhyk, (The CBM Collaboration). Technical Design Report for The Micro-Vertex Detector of the CBM Experiment at FAIR. May 20, 2021. GSI, Darmstadt, Germany
2. S.B. Chernyshenko et al. Nucl. Phys. At. Energy 24(2) (2023) 148.

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