Beitrag ID: **67** Typ: **nicht angegeben**

Performance of hit, track, and vertex reconstruction of the Silicon Tracking System of the CBM experiment

Mittwoch, 25. September 2024 16:50 (20 Minuten)

The Compressed Baryonic Matter (CBM) experiment is one of the experimental pillars at the Facility for Antiproton and Ion Research (FAIR).
The Silicon Tracking System (STS) is the central detector for track reconstruction and momentum measurement. It is designed to measure heavy ion collisions at interaction rates up to 10 MHz. It comprises approximately 900 double-sided silicon strip sensors with 1024 strips per side, arranged in 8 tracking stations in a magnetic field of 1 Tm.
In the context of the FAIR Phase-0 program, the mCBM setup at SIS18/GSI is a small-scale precursor of the full CBM experiment, consisting of pre-series productions of all major CBM detector subsystems aiming to verify CBM's concepts of free-streaming readout electronics, data transport, and online reconstruction. The mini-STS (mSTS) setup consists of 11 sensors arranged in 2 stations and no magnetic field.

Heavy ion collisions in the 1-2 GeV/c range were measured with an average collision rate of 500 kHz. The primary and secondary vertexes are reconstructed using the two layers of the mSTS detector by tracks reconstructed as straight lines. Hit reconstruction efficiency was estimated using correlations with downstream detectors. This contribution will present the performance of hit, track, and vertex reconstruction from measurements of heavy ion collisions.

Hauptautor: Herr RAMIREZ, Dario

Co-Autor: CBM COLLABORATION

Vortragende(r): Herr RAMIREZ, Dario

Sitzung Einordnung: Session