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CBM performance for anisotropic flow measurements

Compressed Baryonic Matter experiment (CBM) at FAIR has a potential of discoveries in the area of QCD phase diagram with high net baryon densities and moderate temperatures. Anisotropic transverse flow is one of the key observables to study the properties of matter created in a heavy-ion collisions.

CBM performance for anisotropic flow measurements is studied with Monte-Carlo simulations of gold ions at SIS-100 energies using heavy-ion event generators. Different combinations of the CBM detector subsystems are used to investigate the possible systematic biases in flow measurement and to study effects of detector azimuthal non-uniformity. Resulting performance of the CBM for flow measurements is demonstrated for directed flow as a function of pseudorapidity and transverse momentum in different centrality classes.

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