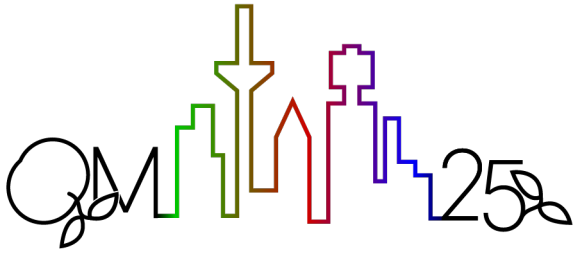

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Dielectron Performance of the CBM Experiment

The Compressed Baryonic Matter (CBM) experiment is a fixed-target experiment currently under construction at FAIR in Darmstadt which will explore the QCD phase diagram at high net-baryon densities using heavy-ion beams in the kinetic energy range of 2-11 AGeV provided by the SIS100 accelerator complex. Dielectrons serve as versatile probes for properties of the hot and dense medium created in the collisions, since once produced, they do not interact strongly and escape the fireball undisturbed. Dielectron physics relies on the efficient reduction of combinatorial background, dominated by misidentified hadrons as well as electrons from photon conversions in the target or detector material. On this poster, simulation results concerning the dielectron performance of CBM with a focus on central Au-Au collisions at $\sqrt{s_{NN}} = 4.9$ GeV will be presented, with a discussion of background rejection using conventional cut-based selections and machine learning methods, as well as the determination the resulting invariant mass spectra and signal-to-background ratios.

Category

Experiment

Collaboration (if applicable)

CBM

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