

Exploring dense QCD matter with the CBM experiment

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The properties of strongly interacting matter at high net-baryon densities are a largely unknown territory, both theoretically and experimentally. The CBM experiment at the accelerator facility FAIR, presently under construction in Darmstadt, Germany, will explore this part of the QCD phase diagram with heavy-ion collisions from 2A to 45A GeV beam energy. Its focus is the characterization of the produced medium with extremely rare probes, not accessible by experiment up to now. This requires very high interaction rates and efficient online data reduction. We will discuss the physics prospects of the experiment and some of the technological challenges for both detectors and data processing.

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