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Magnetic and vortical impacts on the effective QCD phase diagram

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In this talk, we present a comprehensive analysis of chiral symmetry restoration using the Linear Sigma model coupled with quarks to illustrate the effective QCD phase diagrams. Specifically, we explore the temperature-baryon chemical potential plane, incorporating magnetic field effects and investigating the impact of high vorticity on the QCD phase transition. Our study aims to pinpoint the Critical End Point within these phase diagrams. Additionally, we discuss the potential implications of our findings for relativistic heavy-ion collisions, offering insights into the critical behavior and phase structure of QCD under extreme conditions.

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