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Mapping the critical equation of state by resummations

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Determining the existence and the location of the QCD critical point remains a major goal in the heavy-ion collision experiments. A crucial theoretical input for achieving this goal is mapping the QCD equation of state in the presence of baryon chemical potential (mu) which at the moment is limited to small values of mu, away from the critical point. I present a new framework for reconstructing the equation of state from a truncated Taylor series expansion for small mu by using novel resummation techniques. I show how this resummation method can be used to (i) determine the location of the critical point and (ii) constrain the form of the critical contribution to the QCD equation of state which has a direct impact on the shape of the experimental signatures of the critical point.

Category

Theory

Collaboration (if applicable)

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