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Volume effect on the QCD phase diagram and the first order line

As various ongoing and upcoming experiments explore the QCD critical point, it is important to theoretically study various factors that become significant in such searches. In particular, the size of the system created in such experiments is not too large compared to the strong interaction scale. It is important to explore the effect of the finite system size on the phase diagram.

Using an effective model of QCD we will explore the effect of the finite system size on the phase diagram, in particular on the critical point and the associated first order line, and the baryon number susceptibilities. Our study uses the MIT boundary condition: the importance of an appropriate boundary condition in finite volume studies will be discussed. The kinetics at the first order line will also be briefly discussed.

Field of contribution

Theory

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