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Effects of finite volume on the QCD phase diagram

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At high temperatures and densities, strongly interacting matter exists in a phase different from the hadronic phase. The phase diagram in the temperature and baryon number chemical potential plane is a topic of extensive theoretical and experimental investigations at present. In particular, the search for a critical point in the phase diagram involves the study of baryon number cumulants.

One issue with the experimental investigation of the phase diagram is the fact that the system created in relativistic heavy ion collision experiments is small, of dimension a few fm. We investigate the effect of the finite size on the phase diagram. In particular, we look at how the phase diagram shifts, and how the growth of the cumulants get affected, due to the small volume of the system.

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