

Susceptibilities of strongly interacting matter in a finite volume

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We investigate possible finite-volume effects on baryon number susceptibilities of strongly interacting matter. Assuming that a hadronic and a deconfined phase both contribute to the thermodynamic state of a finite system due to fluctuations, it is found that the resulting shapes of the net-baryon number distributions deviate significantly from the infinite volume limit for a given temperature T and baryochemical potential μ_B . In particular, the constraint on color-singletness for the finite quark-gluon phase contribution leads to a change of the temperature dependence of the susceptibilities in finite volumes. According to the model, the finite-volume effect depends qualitatively on the value of μ_B .

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