

QCD Phase Diagram based on Strong Coupling Lattice QCD

In RHIC and FAIR experiments, it is important to search the position of the critical point and first-order phase boundary in QCD phase diagram.

Strong Coupling Lattice QCD has been applied to investigate the chiral phase transition at finite temperature and chemical potential. We take account of the

chiral and deconfinement

phase transitions in the strong coupling lattice QCD, and investigate

the QCD phase diagram. In this study, the calculated critical

temperature at zero chemical potential almost reproduces the results

of Monte Carlo simulations in the strong coupling region. By

comparison, in the finite chemical potential region, Polyakov loop

effects

reduce

the critical point temperature and the first order chiral phase

transition line shrinks.

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Track Classification: QCD phase diagram