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Entropic force and real-time dynamics of holographic quarkonium in a magnetic field

Tuesday 13 December 2022 14:00 (1 hour)

We continue the study of a recently constructed holographic QCD model supplemented with magnetic field. We consider the holographic dual of a quark, anti-quark pair and investigate its entropy beyond the deconfinement phase transition in terms of interquark distance, temperature and magnetic field. We obtain a clear magnetic field dependence in the strongly decreasing entropy near deconfinement and in the entropy variation for growing interquark separation. We uncover various supporting evidences for inverse magnetic catalysis. The emergent entropic force is found to become stronger with magnetic field, promoting the quarkonium dissociation. We also probe the dynamical dissociation of the quarkonium state, finding a faster dissociation with magnetic field. At least the static predictions should become amenable to a qualitative comparison with future lattice data.

Session

Heavy Ions and QCD

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