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Inverse magnetic catalysis in holographic models of QCD

Monday, August 29, 2016 7:00 PM (30 minutes)

We study the effect of magnetic field B on the critical temperature T_c of the confinement-deconfinement phase transition in hard-wall AdS/QCD, and holographic duals of flavored and unflavored $\mathcal{N} = 4$ super-Yang Mills theories on $\mathbb{R}^3 \times S^1$. For all of the holographic models, we find that $T_c(B)$ decreases with increasing magnetic field $B \ll T^2$, consistent with the *inverse magnetic catalysis* recently observed in lattice QCD for $B \lesssim 1 \text{ GeV}^2$. We also predict that, for large magnetic field $B \gg T^2$, the critical temperature $T_c(B)$, eventually, starts to increase with increasing magnetic field $B \gg T^2$ and asymptotes to a constant value.

Summary

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