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Large N_c behaviour of an effective lattice theory for heavy dense QCD

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Combining strong coupling and hopping expansion one can derive a dimensionally reduced effective theory of lattice QCD.
This theory has a reduced sign problem, is amenable to analytic evaluation and was successfully used to study the cold and dense regime of QCD for sufficiently heavy quarks.
We show the derivation and evaluation of the effective theory for arbitrary N_c up to κ^4.
The inclusion of gauge corrections is also investigated.
We find that before the onset, the baryon number density is exponentially suppressed for growing N_c even for $T \neq 0$. This suggests that in the large N_c limit the onset transition is first order up to the deconfinement transition.
After the onset, the pressure is shown to scale as $p \sim N_c$ at all available orders. Possible implications on quarkyonic matter are discussed.

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