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Resummed lattice QCD equation of state at finite baryon density: strangeness neutrality and beyond

Thursday, 11 August 2022 10:40 (20 minutes)

We calculate a resummed equation of state with lattice QCD simulations at imaginary chemical potentials. This talk presents a generalization of the scheme introduced in our previous work to the case of non-zero μ_S, focusing on the line of strangeness neutrality.

We present results up to $\mu_B/T \leq 3.5$ on the strangeness neutral line $\langle S \rangle = 0$ in the temperature range 130 MeV $\leq T \leq$ 280~MeV. We also extrapolate the finite baryon density equation of state to small non-zero values of the strangeness-to-baryon ratio $R = \langle S \rangle / \langle B \rangle$.

We perform a continuum extrapolation using lattice simulations of the 4stout-improved staggered action with 8, 10, 12 and 16 timeslices.

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