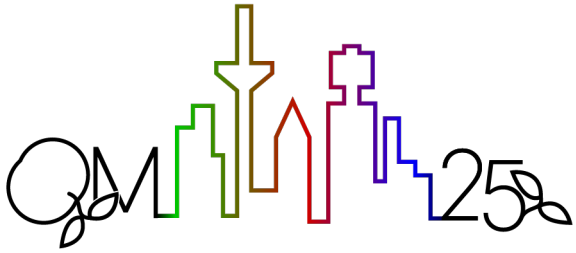

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Next to leading order estimate for the critical endpoint from contours of constant observables with lattice QCD

A recent suggestion for finding the QCD critical endpoint [arXiv:2410.16206] is to investigate entropy contours on the QCD phase diagram. We generalize this idea to other lines of constant observables, like that of strangeness susceptibility. Such quantities can not be directly calculated in lattice QCD because of the infamous sign problem. We present an analytical continuation of various contours from vanishing and imaginary chemical potentials. This way we can constrain possible locations of the QCD critical endpoint. We use 4stout lattices with a large volume which are tuned for strangeness neutrality.

Category

Theory

Collaboration (if applicable)

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