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Meson screening mass at finite chemical potential

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Knowledge of the screening masses at finite chemical potential can provide insight into the nature of the QCD phase diagram. However, lattice studies at finite chemical potential suffer from the well-known issue of the sign problem, which has made the calculation of observables such as screening correlators and screening masses at finite chemical potential quite challenging. One way to proceed is by expanding the observable in a Taylor series in the chemical potential and hence calculating the finite-density corrections to the observable. In this talk, we will use this approach to calculate the screening mass of the pseudoscalar meson at finite temperatures and chemical potential by expanding the screening correlator in a Taylor series in the chemical potential. We will present our results for the second derivative of the screening mass w.r.t. the chemical potential. Our calculation was done on $64^3 \times 8$ lattices generated using the (2+1) HISQ action.

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