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# A new way to calculate equation of state at finite chemical potential

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We present a new way of calculating the QCD equation of state(EoS) at finite chemical potential. Our method derives from the previously published method of exponential resummation. While exponential resummation does resum Taylor coefficients to all orders in $\mu$; on expansion of the series itself, it becomes evident that in addition to genuine higher order contributions, the contribution of a stochastic bias is also present.
In this talk, we consider only isospin chemical potential (density) and perform a cumulant expansion of the exponential resummation formula, in which each of the terms is carefully evaluated using the unbiased powers of the operators. We compare our results with both exponential resummation as well as Taylor series expansion, and find that our formalism has the potential to manifest the actual fluctuations of the different-ordered operators

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