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Higher order fluctuations form imaginary chemical potential

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When comparing lattice calculation to experimental data from heavy ion collision experiments, the higher order fluctuations of conserved charges are important observables. An efficient way to study these fluctuations is to derive them from simulations at a set of imaginary chemical potentials. In this talk we present results for higher order derivatives with respect to μ_B, μ_S and μ_Q determined at the physical point from simulations with staggered fermions using different imaginary values of μ_B. We then can determine several combinations that allow for a comparison to heavy ion collision experiments, and extrapolate theses observables to real baryon chemical potential.

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