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Continuum extrapolated high order baryon fluctuations

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Fluctuations play a key role in the study of QCD phases. Lattice QCD is a valuable tool to calculate them, but going to high orders is challenging. Up to the fourth order, continuum results are available since 2015. We present the first continuum results for sixth order baryon fluctuations for temperatures between $T = 130\text{--}200$ MeV, and eighth order at $T = 145$ MeV in a fixed volume. We show that for $T \gtrsim 145$ MeV, relevant for criticality search, finite volume effects are under control. Our results are in sharp contrast with well known results in the literature obtained at finite lattice spacing.

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