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The continuum limit of hadronic correlation functions in the deconfined phase of an SU(3) gauge theory

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We explore properties of hadronic excitations at high temperature in the chiral limit by investigating hadron correlation functions in the deconfined phase of quenched QCD. This is achieved by performing a systematic analysis of the influence of cut-off effects on light quark meson correlators at $T=1.5T_c$ using clover improved Wilson fermions on quenched gauge field configurations.

The correlation functions are calculated at four values of the lattice cut-off, i.e. on lattices of size $128^3 \times N_{\tau}$ with $N_{\tau} = 16,\ 24,\ 32$ and 48. Whereby we check that finite volume effects are small compared to the significant cut-off dependence observed in the correlation functions. The continuum extrapolation of these correlators are seen to be well under control for distances $0.2 \leq \tau T \leq 0.5. \backslash$ We discuss consequences for the determination of hadronic spectral functions and the analysis of their low energy structure.

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poster

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