

Temporal Correlators in the Continuous Time Formulation of Strong Coupling Lattice QCD

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We present results for lattice QCD in the limit of infinite gauge coupling on a discrete spatial but continuous Euclidean time lattice. A worm type Monte Carlo algorithm is applied in order to sample two-point functions which gives access to the measurement of mesonic temporal correlators. The continuous time limit, based on sending $N\tau \rightarrow \infty$ and the bare anisotropy to infinity while fixing the temperature in a non-perturbative setup, has various advantages: the algorithm is sign problem free, fast, and accumulates high statistics for correlation functions. Even though the measurement of temporal correlators requires the introduction of a binning in time direction, this discretization can be chosen to be by orders finer compared to discrete computations. For different spatial volumes and binnings, temporal correlators are measured at zero spatial momentum for a variety of mesonic operators. They are fitted to extract the pole masses and corresponding particles as a function of the temperature. We conclude discussing the possibility to extract transport coefficients from these correlators.

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