

Continuous Time Monte Carlo for QCD in the Strong Coupling Limit

We present results for QCD in the strong coupling limit, obtained from a worm-type algorithm on a discrete spatial lattice but with continuous Euclidean time. This is obtained by sending both the anisotropy parameter $\gamma^2 = a/a_t$ and N_τ to infinity at fixed temperature $T = \gamma^2/N_\tau$. The gain is that no continuum extrapolation for $N_\tau \rightarrow \infty$ has to be carried out. We contrast these computations with those obtained on discrete lattices for large N_τ . We discuss the determination of the critical temperature for U(3) (purely mesonic) in the chiral limit, and the extension to SU(3) (baryons included) with a baryon chemical potential.

We finally discuss the possibility of a continuous time worm algorithm at finite quark mass.

Primary author: Dr UNGER, Wolfgang (ETH Zürich)

Co-author: Dr DE FORCRAND, Philippe (ETH Zürich, CERN)

Presenter: Dr UNGER, Wolfgang (ETH Zürich)

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