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E7: Efficiency Study of Overrelaxation and Stochastic Overrelaxation Algorithms for SU(3) Landau Gauge-Fixing

Wednesday, 28 July 2021 15:45 (15 minutes)

As part of our study of two-point functions in SU(3) lattice gauge theory, we have carried out a comparative analysis of Landau Gauge Fixing algorithms, which complements similar existing studies for the SU(2) case. We present the results of our optimization analysis for the Landau Gauge Fixing overrelaxation and stochastic overrelaxation algorithms. By studying the distribution of necessary sweeps for gauge-fixing of a sample of configurations, we obtain the optimal choice of parameters for these algorithms, as well as their dynamical critical exponent. Finally, we also compare the overall time performance and gauge-fixing quality between the considered algorithms.

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