

Field Selection Algorithm for Correlation Functions

Tuesday, 4 August 2020 17:00 (20 minutes)

The most computational cost in typical lattice QCD simulation is doing the inversion to obtain the propagator. While it is a huge waste to free the propagators in RAM after the contraction. This work explores a field selection algorithm for the correlation functions. The field selection algorithm constructs the correlation function by selecting point on the lattice. It is found that almost the same precision can be obtained at three point function and two point function with about 1/100 point of full lattice. The field selection algorithm has a huge advantage to save the propagators on disk and also to accelerate the complex contraction.

Primary author: SHICHENG (*), Xia (Peking University)

Co-authors: LI, Yuan; FENG, Xu

Presenter: SHICHENG (*), Xia (Peking University)

Session Classification: Algorithms, machines, and code development

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