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Domain decomposition for the propagator factorization in distillation

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Multilevel integration schemes are easy to couple with distillation, our current approach for computing highly optimized interpolating fields for hadrons. The locality of the distillation basis in the time direction can be exploited in accelerating the propagator computations with domain decomposition. Currently, we are exploring the use of asymmetric domain decomposition schemas in which the domains have only direct connections to a non-local domain. However, computing the contributions from the non-local domain may dominate the global performance of the calculation. We will show the impact on the accuracy and performance of preconditioning techniques for the resolution of linear systems with the non-local domain.

Topical area

Algorithms and Artificial Intelligence

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