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Stabilised Wilson fermions – from large-scale to master-field simulations

Tuesday, October 29, 2024 11:30 AM (1 hour)

Simulating QCD in the traditional way on very large lattices leads to conceptual and technical issues with impact on performance and reliability. In view of the new master-field framework, simulations with dynamical fermions are particularly challenging. The proposed stabilising measures comprise algorithmic changes as well as a new $O(a)$ -improved Wilson action with exponential clover term.

In this talk, the motivation for stabilising measures and its effects are reviewed as both, standard-sized and master-field simulations, profit from its implementation. Furthermore, the current status and prospects of such simulations are presented.

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