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Toward Quantum SImulations using Discrete Subgroup Approximations

Monday, 26 July 2021 14:00 (15 minutes)

The possibility for near-term quantum simulations in lattice field theory depends upon efficiently using the limited resources available. In this talk, we will discuss how approximating lattice gauge theories like SU(3) with discrete subgroups can be theoretically analyzed as a lattice effective field theory. Further, methods for implementation upon quantum hardware will be covered. Numerical results for Euclidean calculations for U(1) and SU(3) subgroups will be presented with modified and improved actions that relate to Hamiltonians other than Kogut-Susskind's.

Primary author: LAMM, Hank (Fermi National Accelerator Laboratory)

Presenter: LAMM, Hank (Fermi National Accelerator Laboratory)

Session Classification: Algorithms (including Machine Learning, Quantum Computing, Tensor Networks)

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