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Improved Fermion Hamiltonians for quantum simulations

Thursday, 3 August 2023 16:20 (20 minutes)

Constructing improved Hamiltonians for gauge theories coupled to fermionic matter will be important for improving continuum limit extrapolations of quantum computations. In this talk we will present a formulation for simulating ASQTAD fermions for lattice computation and provide fault tolerant resource costs in terms of primitive operations. We additionally show tha tthe scaling of energies with respect to the lattice spacing are better than for the unimproved Hamiltonian in toy models

Topical area

Quantum Computing and Quantum Information

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