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【523】Quantum Variational Learning of the Entanglement Hamiltonian

Wednesday, 1 September 2021 17:45 (15 minutes)

In this talk I will describe a quantum-classical variational protocol for learning the structure of the Entanglement Hamiltonian (EH) in Quantum Simulation experiments. In this approach, spatial deformations of the many-body Hamiltonian, physically realized on the quantum device, serve as an efficient variational ansatz for a local EH. On-device spectroscopy of the learned Hamiltonian provides a tool to characterize complex quantum phases. I will discuss advantages over classical learning protocols and will provide prospects that Hamiltonian learning can serve as a tool for verifying quantum simulators in a regime inaccessible to classical simulations.

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