Solving the (time-dependent) Schrödinger equation

Tuesday 19 November 2024 14:00 (45 minutes)

Simulating the time evolution of interacting quantum systems is in general a very hard problem. Quantum simulation experiments, such as cold atoms in optical lattices, are naturally well suited to study closed system dynamics. A bottleneck for these setups are slow data taking rates, which enable experimentalists typically only to get a limited number of projective measurements at a limited number of time steps. In this talk, I will (i) demonstrate how limited, noisy, experimental data can be useful in a hybrid approach for ground state searches using neural quantum states (NQS); and (ii) introduce a new NQS based method to simulate the time evolution of interacting quantum many-body systems.

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