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Tensor network for quantum simulations

Tuesday 6 May 2025 09:15 (1 hour)

We review some recent results on developing efficient tree tensor network algorithms and their application to quantum simulation benchmarking and theoretical interpretations. In particular, we present results on two- and three-dimensional systems in and out of equilibrium and on the computation of entanglement of formation in critical quantum many-body systems at finite temperature. Finally, we present the application of tensor-network methods for the solution of hard classical combinatorial problems via mapping to many-body quantum Hamiltonians.

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