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Tensor renormalization group and application to elementary particle physics

Wednesday, 11 December 2024 09:30 (1 hour)

Tensor network is a powerful numerical tool to compute the wave function of quantum many-body systems and to directly evaluate the path integrals in quantum field theory. In this talk, I mainly explain the latter case in detail. After introducing the basics of the tensor network. I give an overview of its recent progress especially in elementary particle physics. As specific examples, I explain how to compute the entanglement entropy, spectroscopy using tensor network, and recent developments of the tensor network coarse-graining algorithms. Finally I mention future perspective towards lattice QCD.

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