

Parton Distributions in the Schwinger Model with Matrix Product States

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Parton Distribution Functions (PDFs) describe universal properties of bound states in high energy physics and allow to predict scattering amplitudes in processes with large momentum transfer. The numerical calculation of PDFs involves the evaluation of a Wilson line along a lightcone. In contrast to Monte Carlo simulations in euclidean spacetime, the evolution on a lightcone can be directly computed in the Hamiltonian formalism. The necessary spatial- and time-evolution can be efficiently applied using established tensor network methods. We study PDFs in the Schwinger model using matrix product states.

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