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Parton Distribution Functions in the Schwinger Model with Tensor Networks

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Parton Distribution Functions (PDFs) describe universal properties of bound states and allow to calculate scattering amplitudes in processes with large momentum transfer. Calculating PDFs involves the evaluation of correlators with a Wilson line in lightcone-direction. In contrast to Monte Carlo methods in euclidean spacetime, these correlation functions can be directly calculated 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.

Primary authors: LIN, C.-J David (National Yang Ming Chiao Tung University); CICHY, Krzysztof (Adam Mickiewicz University of Poznan); SCHNEIDER, Manuel (National Yang Ming Chiao Tung University (NYCU), Taiwan); BAÑULS, Mari Carmen (Max Planck institute of Quantum Optics)

Presenter: SCHNEIDER, Manuel (National Yang Ming Chiao Tung University (NYCU), Taiwan)

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