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Phase structure and real-time dynamics of the massive Thirring model in 1+1 dimensions using the tensor-network method

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In this talk, we present concluding results from our study of phase structure of the lattice version of the massive Thirring model in 1+1 dimensions. Employing the method of matrix product state (MPS), several quantities have been investigated, leading to firm numerical evidence of a Kosterlitz-Thouless phase transition. In particular, we examine two correlators and determine the relevant exponents. Exploratory results for real-time dynamics pertaining to this phase transition, obtained using the approaches of variational uniform MPS and time-dependent variational principle, will also be discussed.

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