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# Universal front propagation in the quantum Ising chain

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## Abstract

I will present recent results on the melting of domain walls in the ferromagnetic phase of the transverse Ising chain. The domain walls are created by flipping the order-parameter spins along one-half of the chain. If the flip is realized by a local operator in terms of Jordan-Wigner fermions, the resulting longitudinal magnetization profiles have a universal character. Namely, after proper rescalings, the profiles in the noncritical Ising chain become identical to those obtained for a critical free-fermion chain starting from a step-like initial state. The relation holds exactly in the entire ferromagnetic phase of the Ising chain. For the evolution of the entanglement entropy, we observe a saturation at the ground-state value for large times, suggesting a simple form of the steady state.

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