Quantum dynamics of a domain wall in the presence of dephasing

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We compare quantum dynamics in the presence of Markovian dephasing for a particle hopping on a chain and for an Ising domain wall whose motion leaves behind a string of flipped spins. Exact solutions show that on an infinite chain,the transport responses of the models are nearly identical. However, on finite-length chains, the broadening of discrete spectral lines is much more noticeable in the case of a domain wall.

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