Chapter 5.8: Domain walls in the Ising model

$$H_{\text{Ising}} = -J \sum_{j=1}^{N-1} S_j S_{j+1}$$

Analysis of excitations in 1D

Ground state
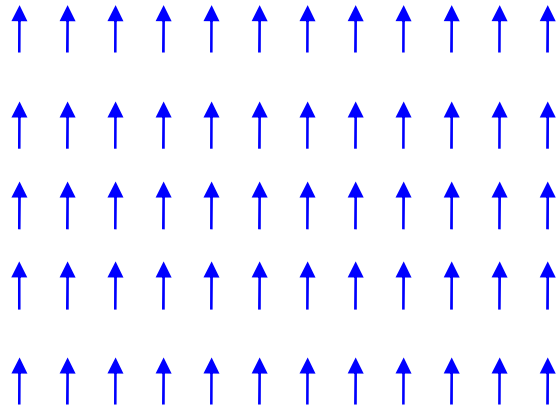
↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑

Excited state

↑ ↑ ↑ ↑ ↑ ↑ ↓ ↓ ↓ ↓

Analysis of excitations in 2D

Ground state

↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑

↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑

↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑

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Excited state