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Wall and Boundary Free Energies

I. Ferromagnetic Scalar Spin Systems

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Abstract. The existence of wall or boundary free energies is discussed generally and analyzed explicitly for general lattice systems with scalar (real-valued) spin variables. For systems with ferromagnetic (positive) spin interaction potentials, K, in the bulk and W, for the walls, correlation inequalities and appropriate stability and tempering conditions are used to establish the existence and uniqueness of the limiting free energy per unit area, $f_\times(K, W)$, of an infinite planar wall.

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