

Regularity of surface tension for the stochastic interface model

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Abstract

The $\nabla\phi$ -interface model is a model for random interfaces that has been a topic of mathematical research since the 1970s (introduced by Brascamp, Lieb and Lebowitz). They also arise as effective models for many statistical mechanics models. When the potential is uniformly convex, a breakthrough was made by Naddaf and Spencer more than 20 years ago, by observing the connection between the scaling limit of the field and elliptic homogenization. I will discuss some new results, in joint work with Scott Armstrong, that resolves a conjecture of Funaki and Spohn regarding the surface tensions.