

Discrete Random Polymer Models and Related Stochastic Heat Equations

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Abstract

Three polymer models will be discussed: directed polymers, parabolic Anderson models and Wiener sausages in disordered systems. They correspond to three types of white noise in stochastic heat equations: space-time noise, space noise and space noise (Skorokhod). We will discuss the weak coupling limit for Wiener sausages in disordered systems, then compare the results to the other two. We also review some recent progress for stochastic heat equations.