

BEHAVIOR OF THE SOLUTION OF A RANDOM SEMILINEAR HEAT EQUATION

ABSTRACT. We consider a semilinear heat equation in one space dimension, with a random source at the origin. We study the solution, which describes the equilibrium of this system, and prove that, as the space variable tends to infinity, the solution becomes a.s. asymptotic to a steady state. We also study the fluctuations of the solution around the steady state.