

Low regularity solutions to a stochastic
nonlinear wave equation in nonequilibrium
statistical mechanics

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Abstract

We consider a system of stochastic partial differential equations modeling heat conduction in a non-linear medium. We show global existence of solutions for the system in Sobolev spaces of low regularity, including spaces with norm beneath the energy norm. For the special case of thermal equilibrium, we show the existence of an invariant measure (Gibbs state). This talk is based on joint work with Luc Rey-Bellet.