

**Meeting:** 998, Houston, Texas, SS 16A, Special Session on Mathematical Physics

998-82-248

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A stochastic non-linear wave equation modeling heat conduction between thermal baths is considered. We show global existence of solutions for the equation in Sobolev spaces of low regularity, including spaces below the energy norm. For the special case of the the baths having equal temperatures, we show the existence of an invariant measure (Gibbs state). (Received February 29, 2004)