

1057-82-313

Lawrence E. Thomas*, Mathematics Department, Kerchof Hall, University of Virginia, Charlottesville, VA 22904, and **Yao Wang**. *On a nonlinear stochastic wave equation modeling heat flow*. Preliminary report.

We consider a one-dimensional non-linear stochastic wave equation modeling heat flow between thermal reservoirs at different temperatures. We show that the equation with ultraviolet cutoffs has, for each cutoff, a unique invariant measure exhibiting steady-state non-equilibrium heat flow, and we provide estimates on the field covariances with respect to the invariant measures which are uniform in the cutoffs. The analysis requires detailed estimates on the spectrum and eigenfunctions for a Schrödinger operator associated with the wave equation. (Received January 25, 2010)