

Random String: An Explicitly Solvable Model

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Abstract

We calculate exactly the Lyapunov exponent and the integrated density of states for the random string operator whose density and elastic compliance are binary random functions of a Markov chain. For all values of interest short and long wave asymptotic expansions are obtained. Finally we discuss conditions of propagation and localization of waves in a binary random medium.

Joint work with S. Molchanov.