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Lower bounds on the eigenfunctions of random Schroedinger operators in a strip

Abstract:

It is known that the eigenfunctions of a random Schroedinger operator in a strip (the direct product of the integer line and a finite set) decay exponentially. In some regimes, the same is true in higher dimensions. It is however not clear whether the eigenfunctions have an exact rate of exponential decay. In the strip, it is natural to expect that the rate should be given by the slowest Lyapunov exponent, however, only the upper bound has been previously established. We shall discuss some recent progress on this problem, and its connection to a question, perhaps interesting in its own right, from the theory of random matrix products. Based on joint work with Ilya Goldsheid.