



THE WEIZMANN INSTITUTE OF SCIENCE  
FACULTY OF MATHEMATICS AND COMPUTER SCIENCE  
Geometric Functional Analysis and Probability Seminar

Room 261 ,Ziskind Building  
on Thursday, May 21, 2015  
at 11:05

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The weakly random Schroedinger equation: a consumer report

Abstract:

Consider a Schroedinger equation with a weakly random time-independent potential. When the correlation function of the potential is, roughly speaking, of the Schwartz class, it has been shown by Spohn (1977), and Erdos and Yau (2001) that the kinetic limit holds -- the expectation of the phase space energy density of the solution converges weakly (after integration against a test function, not in the probabilistic sense) to the solution of a kinetic equation. We "extend" this result to potentials whose correlation functions satisfy (in some sense) "sharp" conditions, and also prove a parallel homogenization result for slowly varying initial conditions. I will explain the quotation marks above and make some speculations on the genuinely sharp conditions on the random potential that separate various regimes. This talk is a joint work with T. Chen and T. Komorowski