Convergence of a random Schrödinger equation to a linear Boltzmann equation in p-th mean

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Abstract

We prove that the quantum dynamics in the Anderson model at weak coupling in 3 dimensions converges, in p-th mean with respect to the randomness, to a linear Boltzmann equation in a macroscopic limit, for any finite value of p larger or equal 2. This work extends previous results in which convergence in expectation was established, and includes joint results with Laszlo Erdos.