

The SPDE limit for the random Schrödinger equation: The average wave function

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Abstract

For the Schrödinger equation with a white noise potential in $d = 1, 2$, we prove a probabilistic representation for the average wave function, which uses the renormalized self-intersection local time of Brownian motion. This is a joint work with Yu Gu and Lenya Ryzhik (Stanford University).

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