Atelier
« Méthodes probabilistes en géométrie spectrale et EDP »
22—26 août 2016

Workshop
"Probabilistic Methods in Spectral Geometry and PDE"
August 22—26, 2016

Interacting electrons in a random background

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In this talk, we consider the d dimensional Schrödinger operator with a repulsive Poisson random potential. We consider n interacting electrons located in this random background and restricted to a cube of sidelength L. We study the limit of the ground state and of the ground state energy (per particle) of this quantum system when n and L go to infinity in such a way that n/L^d converges to a fixed positive density, say, ρ. The density of particles ρ is our main parameter to control the thermodynamic limit; it will be assumed to be small. The results are preliminary.

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