



北京理工大学

数学与统计学院学术报告

Commutator Estimates and Quantitative Local Weyl's Law for Schrödinger Operators with Non-Smooth Potentials

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摘要: In this talk, I will consider spectral projections on the negative eigenvalues of Schrödinger operators with non-smooth potentials, and present commutator estimates in Schatten norms uniform in the Planck constant. The singularity of the potential allows to treat in particular the case of the Hartree minimizers with Coulomb interaction. These estimates are taken as an hypothesis for the initial data in several works about the derivation of the Vlasov equation from quantum mechanics in the semiclassical limit. They can be seen as the quantum analog of a regularity estimate for a characteristic function of the phase space. These estimates also allows us to get quantitative versions of the local and phase space Weyl laws in strong topologies.

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