Abstract

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"Lifshitz tail for Schrödinger operators with random Aharonov-Bohm magnetic fields"

We shall consider the Schrödinger operators with random δ-measure valued magnetic fields (random Aharonov-Bohm magnetic fields) on $\mathbb{R}^2$. Under some conditions on positions and the fluxes of the δ magnetic fields, we prove the spectrum coincides with $[0, \infty)$ and the integrated density of states (IDS) decays exponentially at the bottom of the spectrum (Lifshitz tail), by using the Hardy-type inequality proved by Laptev and Weidl (1999). We also give a lower bound for IDS at the bottom of the spectrum.