Semiclassical reduction for magnetic Schroedinger operator with periodic zero-range potentials

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joint work with B. Helffer

The two-dimensional Schroedinger operator with a uniform magnetic field and a periodic zero-range potential is considered. For weak magnetic fields we reduce the spectral problem to the semiclassical analysis of one-dimensional Harper-like operators. This shows the existence of parts of Cantor structure in the spectrum for special values of the magnetic flux.