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## PARITY PROBLEMS IN INVERSE SPECTRAL THEORY

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**Abstract:** We'll discuss the role of quantum Birkhoff canonical forms in inverse spectral theory, focussing for the most part on the semi-classical Schroedinger operator. It has been known for a long time that modulo "non-resonance" and "parity" assumptions, the spectrum of the Schroedinger operator determines the operator itself. We don't know how to get rid of the non-resonance assumptions, but we'll show how, using Birkhoff canonical form techniques, one can eliminate some of the parity assumptions.