Abstract

Spectral Theory

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Commutator method for the Stark Hamiltonian

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We discuss spectral theory for a perturbed Stark Hamiltonian. The main results are Rellich's theorem, the limiting absorption principle, the radiation condition bounds and Sommerfeld's uniqueness result. For their proofs we adopt a commutator scheme from Ito-Skibsted (2016), in which choice of an escape function plays a key role. Our escape function conforms well with classical mechanics of the Stark Hamiltonian, and generates the conjugate operator and the Besov-type spaces that appear in the statements of the main results.