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Perturbation Theory and Atomic Resonances Since Schrödinger's Time

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Abstract. Quantum theory makes a sharp distinction between bound states and scattering states, the former associated with point spectrum and the latter with continuous spectrum. Resonances associated with quasi-stationary states bridge this distinction, and have posed mathematical challenges since the beginning of the Schrödinger theory. Here the development of mathematical aspects of resonances in atomic physics is reviewed, with particular reference to the role of the Stark effect, and perturbations of bound states.