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Stability and bifurcations of large bound states in nonlinear Schroedinger equation

I will present recent necessary and sufficient conditions for the existence of bifurcation points along ground state and excited state branches in nonlinear Schroedinger equations. The possible types of bifurcations and their effect on the dynamical stability of the bound states will also be discussed.

This is joint work with D. Pelinovsky (McMaster), P. Kevrekidis (U. Mass.) and V. Natarajan (U. of Illinois).