Soliton dynamics and scattering

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A survey of results and problems of soliton dynamics in dispersive and hyperbolic nonlinear PDE's and the related spectral and scattering theory. I focus on the problem of large time behavior of the nonlinear Schrödinger equation, with both solitary and radiative waves appearing in the solution. The equations are nonintegrable in general and in arbitrary dimension. I will formulate the main conjectures relevant to soliton dynamics.