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Nonlinear waves in the integrable systems

Wave phenomena occur everywhere in our surroundings, as for instance in water, acoustic, electromagnetic, and quantum waves, and so on, which have been modeled by nonlinear partial differential equations. Among a plethora of solutions in such equations, a localized and smooth wave retaining its shape, speed, and amplitude is often referred as a soliton. We will present orbital stability of a soliton in the integrable system on a class of nonlinear Dirac equations. This is a joint work with Dmitry Pelinovsky and Andres Contreras.