

Stability and instability of bound states for a regularized NLS equation

John Albert

University of Oklahoma, USA

We study the stability and instability of bound-state solutions of a regularized NLS equation which has been derived as a model for the propagation of laser beams by Dumas, Lannes, and Szeftel. The regularization has the effect of increasing the range of nonlinearities for which bound states are orbitally stable. An interesting feature of the equation is that the existence of travelling bound states remains an open question. This is joint work with Jack Arbunich.

In Special Session 24 on Nonlinear Dispersive Equations at the Mathematical Congress of the Americas 2025.