

On the spectral (in)stability of nonlinear Dirac equations

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Abstract.

In this joint work with Andrew Comech (Texas A&M, College Station), we consider the spectrum of nonlinear Dirac equations linearized at a solitary wave. While the essential spectrum is always located on the imaginary axis, there could be point eigenvalues with positive real part, which indicate the linear instability of a particular solitary wave. We present several results on where such eigenvalues can or can not come from.