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On homoclinic bifurcation in advance-delay equations via Lin's method

The study of travelling waves in a 1D lattice with $\mathbb{Z} \ltimes \mathbb{Z}_2$ symmetry reduces to the study of solutions of a "reversible" advanced-delay equation (ADE). We present an extension of Lin's method for ODEs by which we prove that any $\mathbb{Z}_2$-invariant localized travelling wave (bi-asymptotic to the trivial state) is accumulated by a one-parameter family of periodic travelling waves.

This is joint work with Marc Georgi (Free University Berlin), Alice Jukes and Kevin Webster (Imperial College London).