

A. Fonseca

Title:

Reversibility and Numerical Approach for the Fifth Order KDV Equation

Abstract:

Using reversibility properties of the fifth order KDV equation, related to water wave problem, we developed a search algorithm for soliton solution parameters, reformulating the standard procedure of tracking intersections of unstable manifolds with some invariant set, in the hamiltonian context.

We obtained interesting pictures in parameters space for the solitons chaotic structural distribution representing the phase and amplitude shifts phenomena.

The hypothesis are non restrictive and the results can be extended to a much wider variety of reversible systems, establishing in a geometrical point of view, some kind of symmetry which in a classical way is unknown or non existent.