

A Lipschitz metric for the Camassa–Holm equation

20th, October

Abstract: The Camassa–Holm equation

$$u_t + uu_x + p_x = 0, \quad p - p_{xx} = u^2 + \frac{1}{2}u_x^2$$

has received considerable attention since it was first studied by Camassa and Holm in 1993. Part of the interest stems from the fact that the solution develops singularities in finite time while keeping the H^1 norm finite. At wave breaking uniqueness is lost as there are infinitely many ways to extend the solution beyond wave breaking. We study the so-called conservative solutions and show how to construct a Lipschitz metric comparing two conservative solutions.

This is joint work with J. A. Carrillo (Imperial) and K. Grunert (NTNU).