

University of Notre Dame Department of Mathematics

PDE, COMPLEX ANALYSIS AND DIFFERENTIAL GEOMETRY SEMINAR

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Will give a lecture entitled:

The Camassa-Holm equation and some of its relatives I

On

Monday, March 28, 2011

At

4:00 PM

In

258 Hurley Hall

Abstract

In these two lectures, I begin by surveying the Camassa-Holm equation and the properties that make it special, including bi-Hamiltonian structure and conservation laws, its Lax pair and the structures associated with integrability, as well as the special weak multi-soliton solutions with peaks ("peakons"), which distinguish it from previously known integrable partial differential equations (PDEs). I continue by considering other PDEs with similar properties, including the integrable Degasperis-Procesi equation, as well as a family non-integrable equations that also admit peakon solutions. These different examples suggest that features of integrability can be displayed by non-integrable equations.