PDE, Complex Analysis and Differential Geometry Seminar

UNIVERSITY OF NOTRE DAME
Department of Mathematics

Speaker: Alex Himonas
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Tuesday, September 5, 2017
11:00 AM
258 Hurley Hall

Title: Norm inflation and non-uniqueness for the Novikov equation

Abstract:

Novikov's equation is an integrable equation that can be thought of as a cubic analogue to the well-known Camassa-Holm equation. Using appropriate 2-peakon solutions, we prove that when one takes initial data in Sobolev spaces with exponents less than 3/2 the data-to-solution map becomes discontinuous in the sense of norm-inflation. Additionally, if the Sobolev exponent is less than 5/4, it is possible to construct non-unique solutions. This is a joint work with Curtis Holliman and Carlos Kenig.