

PDE, COMPLEX ANALYSIS AND DIFFERENTIAL GEOMETRY SEMINAR

Guest Speaker: Priscila Leal da Silva
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Date: Tuesday, April 19, 2022

Time: 11:00 AM

Location: Zoom

Zoom URL: notredame.zoom.us/j/91511760554

Lecture Title:

Existence and uniqueness of solutions for the rotation-Camassa-Holm equation

Abstract

Since the discovery of the Camassa-Holm equation as an integrable peakon-equation, intense research has been dedicated to its generalisations of it and to the study of their solutions. Of particular interest in this talk is the rotation-Camassa-Holm equation (rCH), a nonlocally evolutive equation that takes into consideration the Coriolis force, which is typically a manifestation of rotation when Newton's laws are applied to model physical phenomena on Earth's surface. In this talk we discuss conditions for the existence of traveling wave solutions and show that, given an initial data in Sobolev spaces, uniqueness of local solutions is achieved. Moreover, assuming a strong condition on the McKean quantity, the solutions can be extended globally. Extensions of these results are presented, as well as further conjectures.