

Seminários de Equações Diferenciais Parciais

Data: 3 de outubro, de 2018

Local: Sala B-IM Novo.

Horário: 8:40

Programação

Palestrante: Gerardo Huaroto-UFAL

Título: Initial-boundary value problem for a fractional type degenerate heat equation

Horário:8:40-9:20

Abstract

In this talk we will present a fractional type degenerate heat equation posed in bounded domains. We show the existence of solutions for measurable and bounded non-negative initial data, and homogeneous Dirichlet boundary condition. The nonlocal diffusion effect relies on an inverse of the s -fractional Laplacian operator, and the solvability is proved for any $s \in (0, 1)$.

Palestrante: Márcio Cavalcante-UFAL

Título: The KdV equation in unbounded domains

Horário:9:30-10:10

Abstract

In this talk we discuss about some recent results obtained for the Korteweg-de Vries equation on the half-line and on the metric star graph. For the problem on the half-line we obtain a result of stability of solitons by assuming homogeneous boundary conditions. For the KdV on star graphs we obtain local-well posedness for the Cauchy problem for two classes of boundary conditions. In both problems we discuss the reasons for the choices of the boundary conditions considered.

Palestrante: Isnaldo Isaac Barbosa-UFAL

Título: On the Cauchy problem for Schrödinger-Debye system in Besov spaces

Horário:10:20-11:00

Abstract

We study the Cauchy problem associated to the Schrödinger-Debye system for data in the Sobolev spaces with low regularity, which appears modeling problems in nonlinear optics. In this work we develop a local theory for the system, where the regularity (κ, s) , using the ideas of Bejenau and Tao in Besov space. Moreover, we obtain ill-posedness results based in the Holmer's work.

Palestrante: Chulkwang Kwak- Pontificia Universidad Católica de Chile.
Título: Well-posedness issues of some dispersive equations under periodic boundary conditions
Horário:11:10-11:50

Abstract

In this talk, we are going to discuss about the well-posedness theory of dispersive equations (KdV- and NLS-type equations) posed on \mathbb{T} , via analytic methods. I am going to briefly explain some notions and methodologies required to study the (low regularity) well-posedness problems. And then, I will show the main difference of analysis on between non-periodic and periodic boundary conditions, and will explain how to deal some typical, but significant, phenomena arising in the periodic problems. We are, precisely, going to consider fifth-order (modified) KdV, higher-order Kawahara, fourth-order NLS and modified Kawahara equations, and mainly show the Global well-posedness of the modified Kawahara in $L^2(\mathbb{T})$.