Mini-Curso

Nonlinear wave propagation

Departamento de Matemática, IMECC-UNICAMP

Prof. Jerry Bona da University of Illinois at Chicago está visitando o Departamento de Matemática do IMECC-UNICAMP, de 11 de Julho a 12 de Agosto de 2022, com apoio da FAPESP. O Prof. Jerry vai dar um mini-curso sobre propagação de ondas não-lineares composto de 3 (três) aulas nos seguintes datas, horários e local. Todos interessados estão bem-vindos!

Datas – 18, 19 e 20 de Julho de 2022
Horários – 16h00 às 17h00 (presencial)
Local – **Sala 221** (IMECC)

Aula 1. **The Korteweg-de Vries equation over the complex numbers.**
Abstract: Discussed here will be the Korteweg-de Vries equation posed with complex-valued initial data. This arises in the study of systems of nonlinear, dispersive wave equations. Unlike the real-valued situation, there are many surprises in this case. This includes blow-up results, ill-posedness results and perhaps surprisingly, results of non-existence of even local distributional solutions in certain cases.

Aula 2. **Suppressing blowup in the supercritical Korteweg-de Vries equation.**
Abstract: It is widely believed that the supercritical Korteweg-de Vries equation has smooth solutions that blow up in finite time. We tackle the question of how this blowup can be prevented. Various methods will be discussed, including one that builds on recent work of Panthee and Scialom.

Aula 3. **Solitary-wave solutions of Benjamin-Ono and other coupled systems modeling internal wave propagation**.
Abstract: A one-parameter family of coupled systems that model the two-way propagation of long-crested internal waves will be the focus of this lecture. The discussion will include theoretical results as well as an interesting range of numerical experiments.

Organização: Mahendra Panthee e Márcia Scialom