Mathematics, Statistics, and Computer Science **@ UIC**

Analysis and Applied Mathematics Seminar

Propagation of Long-Crested Water Waves, the Bore Case

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Abstract: This is joint work with Jerry Bona (UIC) and Thierry Colin (Université de Bordeaux).

This talk is concerned with long-crested waves such as those arising in bore propagation. Such motions take place on rivers when a surge of water invades an otherwise quiescent stretch and in the run-up of waves in the near-shore zone of large bodies of water.

In an earlier work, we developed an idealized model for such waves based on a Boussinesq system of equations. The local well-posedness theory developed in this earlier work applies to the sort of initial data arising in modeling bore propagation.

In this talk we shall deal more specifically with well posedness on the longer, Boussinesq time scale. Without a well-posedness theory at least on the Boussinesq time scale, the model may not be of any practical use. The issue of well-posedness is complicated by the fact that the total energy of the idealized initial data is infinite.

Monday, October 31 at 4:00 PM in SEO 636