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

Analysis and Applied Mathematics Seminar

Well-posedness results for the generalized Hartree and KdV equations

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Abstract: The study of the competition between dispersive and nonlinearity effects has developed a wide range of questions and applications. In general, the dispersion is fixed, and a variable nonlinearity is considered. An inherent problem in this approach is the study of nonlinearities that involve low regularity, where usually the classical methods of existence cannot be applied directly. In this talk, we will discuss some applications of the approach proposed by Cazenave and Naumkin for the Schrödinger equation, in which the existence of solutions for nonlinearities with low regularity is proved by considering a class of initial data with a certain polynomial behavior. We will focus on the generalized Hartree equation with nonlinearities $p < 2$, and a generalized version of the Korteweg–de Vries (KdV) equation.

Monday, November 15 at 4:00 PM in Zoom