Hideo Takaoka Wellposedness and illposedness for the modified Benjamin-Ono equation.

PDE/Applied Math/Analysis Seminar Monday January 9, 3:10-4pm 1230 Bahen Centre

Abstract We study the Cauchy problem for the Benjamin-Ono equation with cubic nonlinearity and show the global wellposedness in the energy space $H^{1/2}$. Since this Sobolev space $H^{1/2}$ is at critical, the standard application of Strichartz and dispersive estimates approach does not work well; for instance, the $H^{1/2}$ norm fails to control the maximal function estimate. We prove some bilinear estimates for solutions to the modified Benjamin-Ono equation that it is able to recover the failure of the maximal function estimate. We also consider the illposedness issue. This is joint work with Carlos Kenig (University of Chicago).

University of Toronto PDE/Applied Math/Analysis Seminar
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(Please note the unusual time and place: this semester, the seminar will normally meet on Fridays from 3:10-4pm in the Math Department Seminar Room)