CCSU
DEPARTMENT OF MATHEMATICAL SCIENCES

COLLOQUIUM

Friday, March 10
3:00 – 4:00 PM
Maria Sanford, Room 101

DISPERSIVE BLOW-UP, UNEXPECTANT EXPLOSIONS VIA SMOOTHING OPERATORS

SEUNGLY OH
WESTERN NEW ENGLAND UNIVERSITY

Abstract: Dispersion in physics or mathematics is known to cause smoothing or decay of functions over time. However, exceptions always exist (unless it is a mathematical theorem). In this talk, we will examine when these unexpected "blow-ups" can occur by examining a mathematical model of water waves.

The talk is mainly motivated by recent works of Jerry L Bona and Jean Claude Saut. These authors offer this mathematical anomaly to observed phenomenon widely known as "freak waves." Freak wave (or rogue wave) is a tall (up to 12 meters) abrupt wave which comes unpredictably out of a calm ocean.

We will begin by examining the definition and a few basic properties of Fourier transform, which is an essential ingredient to Dispersive Blow-up. The talk is appropriate for any students who have completed a multi-variable calculus course. Background in differential equations would be helpful, but not required.

For further information:
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