Spring 2018
Mathematical Sciences/
RTG Colloquium

Seeking An Effective Dispersion Relation in Solutions to the Nls and Measuring Effective Nonlinearity

The linear part of the Nonlinear Schr\"odinger Equation (NLS) (iq_t=q_{xx}) has dispersion relation \omega=k^2. We don't expect solutions to the fully nonlinear equation to behave nicely or have any kind of effective dispersion relation like this. However, I have seen that solutions to the NLS are actually weakly coupled and are often nearly sinusoidal in time with a dominant frequency, often behaving similarly to modulated plane waves. In fact, these highly nonlinear solutions eventually end up behaving more and more linearly.

Speaker: Katelyn Leisman

(University of Illinois at Urbana Champaign)

Thursday, March 1, 2018

Time: 4:00 – 5:00 PM

Location: Lally 02

Host: Joe Klobusicky