

UCCS Mathematics Colloquium

Thursday, March 18th
12:30 pm – 1:30 pm
(Refreshments at 12:15)
UC Room 307

Dr. Boaz Ilan, University of California, Merced

Soliton Dynamics in Inhomogeneous Media

Abstract: Nonlinear Schrodinger (NLS) equations model physical phenomena ranging from water waves to optics to ultra-cold matter waves. The underlying medium can be inhomogeneous. For example, Photonic Crystal Fibers have lattice-like structures that enable much better confinement and control of light. Mathematically, these systems can be modeled by NLS equations with suitable potentials, which admit special localized solutions typically called solitary waves or solitons. Solitons play an important role in applications and have drawn much interest in applied science. This talk will describe some recent result on the dynamics and instabilities of solitons in multi-dimensional inhomogeneous media.