

The initial and boundary value problem for the cubic nonlinear Schrödinger equation

Nikos Tzirakis
University of Illinois at Urbana-Champaign

Abstract

In this talk I will discuss the well-posedness theory and the regularity properties of the cubic NLS. I will first review the theory for the case of the NLS equation on the real line and on the torus (periodic boundary conditions). I will then consider the NLS equation on the half line. In all cases we can prove that the nonlinear part of the cubic NLS is smoother than the initial data. This work is joint with B. Erdogan.