FIM Nachdiplomvorlesung

Wilhelm Schlag (University of Chicago)

On Long-term Behavior of Solutions to Nonlinear Evolution Equations

September 29 - December 22, 2010
Wednesdays 10.15 - 12.00h
HG G 43

ETH Zürich, Rämistrasse 101

Abstract

After a review of the basics of the existence/uniqueness theory of solutions to subcritical evolution equations of the wave/Schroedinger/Klein-Gordon type, we will then study special soliton solutions, and discuss their stability. We will review some of the classical work on stability versus blow-up. The distinction between focusing and defocusing will be emphasized, and we will concentrate more on the former. We will introduce the notion of a center-stable manifold near soliton type solutions, and prove results on the blow-up/scattering dichotomy. Some ideas of the Kenig-Merle method will be presented.

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Department of Mathematics D-MATH

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Eidgenössische Technische Hochschule Zürich
Swiss Federal Institute of Technology Zurich