

Title: Soliton Management in Periodic Systems

Speaker:

Professor Boris A. Malomed
Department of Physical Electronics
School of Electrical Engineering
Faculty of Engineering
Tel Aviv University

Date: Thursday, 20 October 2011

Time: 4:00 pm

Venue: Room 603, Chow Yei Ching Building

Abstract:

The past fifteen years have witnessed intensive development in theoretical and experimental studies of dynamics of solitons in periodic heterogeneous media, which are built as periodic concatenations of very different elements. Well-known examples are dispersion management in fiber optics, and (more recently) soliton transmission in photonic crystals. The talk aims to give a brief overview of basic results in the field, with an attempt to propose a concept of a general class of such systems. New systems belonging to the class have been identified in nonlinear optics (such as "split-step" and "tandem" models). The transmission of solitary pulses in these systems was investigated too. Similar soliton dynamics occurs in two-dimensional versions of such settings, an important example being the stabilization of two-dimensional solitons by means of the nonlinearity management.

A part of the talk is based on a book,

"Soliton Management in Periodic Systems", by B. A. Malomed, Springer

(New York, 2006), ISBN: 0-387-25635-0, see also:

<http://www.springer.com/sgw/cda/frontpage/0,11855,4-40109-22-86707035-0,00.html>

Biography of the speaker:

Boris A. Malomed got his Ph.D. in theoretical physics, Institute for Chemical Physics,

USSR Academy of Sciences (Chernogolovka, Moscow district) and Moscow Physico-Technical Institute, and the D.Sc. degree in theoretical physics from the Institute of Theoretical Physics of the Ukrainian Academy of Sciences (Kiev) in 1989. He is currently a Full Professor of the Department of Physical Electronics in the Tel Aviv University. He is also a Divisional Associate Editor of Physical Review Letters since May 2010. Prof. Malomed is an Outstanding Referee of the American Physical Society and a Distinguished Referee of EPL (Europhysics Letters). He published over 700 papers in peer-reviewed journals, 46 chapters in books, and 2 patents.

Organizer: Dr. K.K.Y. Wong