



Solid State Institute
המכון למצב מוצק

TECHNION
Israel Institute
of Technology



הטכניון
מכון טכנולוגי
לישראל

SPECIAL SEMINAR

סמינר מיוחד

Spatiotemporal Dynamics of Optical Pulse Propagation in Multimode Fibers

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Abstract

Optical fibers designed to support multiple transverse modes offer opportunities to study wave propagation in a setting that is intermediate between single-mode fiber and free-space propagation. A variety of qualitatively-new phenomena have been observed recently in multimode fibers. Self-cleaning of a multimode beam is observed at a fraction of the critical power for self-focusing, and without loss. New instabilities, which are spatiotemporal in nature, occur. By varying the launched spatial modes, it is possible to generate dispersive waves over an octave in frequency, megawatt pulses in the near infrared, or continua that span multiple octaves. After a tutorial introduction to nonlinear wave propagation, one or two of these phenomena will be presented along with their connection to multimode soliton dynamics. Recent progress in spatiotemporal mode-locking in fiber lasers will then be summarized. The variety of 3-dimensional lasing states appears to open many opportunities for future study .

ההרצאה תתקיים ביום חמישי, ה-4.4.19 בשעה 12:30
באודיטוריום המכון למצב מוצק, קומת כניסה

**The lecture will take place on Thursday, 4.4.19 at 12:30
at the Solid State Institute auditorium, entrance floor**

Host: Associate Professor Oren Cohen