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SPECIAL SEMINAR

סמינר מיוחד

Prospects of ultrafast fiber lasers

Dr. Pavel Sidorenko

School of Applied and Engineering Physics,
Cornell University, Ithaca , New York
U.S.A

Abstract

Ultrafast fiber lasers offer an attractive alternative to bulk solid-state lasers due to their efficiency, compactness, and alignment-free design. However, the output pulse energy is typically limited by the nonlinear phase accumulation in the long waveguide, which causes some spectral/temporal pulse shape distortions. Thus the existing market for ultrafast lasers dominated by solid-state lasers, primarily Ti:sapphire. In the last few years, a new type of environmentally stable fiber sources, based on the Mamyshev regenerator, have been demonstrated. These ultrafast fiber sources can provide capabilities comparable or better to solid state counterparts within compact, versatile, low-cost devices. In this talk, I will discuss the new trends in ultrafast fiber lasers that embrace nonlinearity instead of avoiding it. I will focus primarily on two promising directions: modelocked oscillators that can generate multi-megawatt pulses and systems that use nonlinear pulse propagation to achieve ultrashort pulses without a modelocked oscillator.

ההרצאה תתקיים ביום שני, ה-4.6.18 בשעה 12:30
באודיטוריום המכון למצב מוצק, קומת כניסה

The lecture will take place on Monday, 4.6.18 at 12:30
at the Solid State Institute auditorium, entrance floor

Host: Associate Professor Oren Cohen