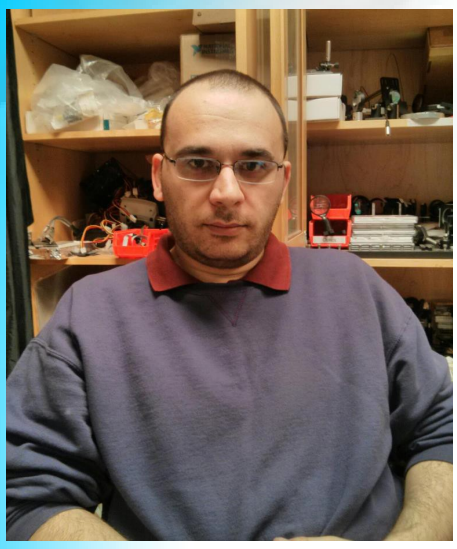
Physics Colloquium

Michigan Technological University

Thursday, October 17, 2013
at 4:00 pm
Room 139 Fisher Hall



Accelerating optical Airy beams

Georgios A. Siviloglou
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Abstract: I will be discussing the experimental observation of an intriguing class of non-spreading optical wavepackets that tend to self-bend even in free space. Their evolution and self-healing properties has been studied in the linear and nonlinear regime and in various environments such as photorefractive crystals, particulate media and in the form of curved plasma channels. I will be discussing our recent studies on the dynamics of ultracold atoms in optical lattices in the superfluid and Mott insulating regime. Our work on Bragg scattering from ultracold atoms as a probe of quantum phase transitions and the work towards the observation - in the context of matter waves - of the Hofstadter butterfly in a Harper lattice.

Bio: Georgios Siviloglou is currently a Research Scientist with the Alkali Quantum Gases group at MIT where his research is focused on exploring the dynamics of ultracold atoms in optical lattices. Dr. Siviloglou received his PhD in Optics from CREOL of University of Central Florida in 2010. His research interests include physical optics, coherent optical and matter wave dynamics, nonlinear optics at the nanoscale, quantum emulation of condensed matter systems, and lattice physics.

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