Photonics Forum

September 26, 2018

11:45 a.m. -
1:15 p.m.

9th Floor

Room 901

Photonics Center

8 Saint Mary's Street

Lunch will be served!

Professor Hui Cao, Yale University

Complex Lasers with Controlled Coherence

Host: BU OSA/SPIE Student Chapter

The invention of lasers 60 years ago is one of the greatest breakthroughs in modern optics. Throughout the years, lasers have enabled major scientific and technological advancements, and have been exploited in numerous applications due to their advantages such as high brightness and high coherence. However, the high spatial coherence of laser illumination is not always desirable, as it can cause adverse artifacts such as speckle noise in imaging applications. To reduce the spatial coherence of a laser, Dr. Cao has developed novel cavity geometries and alternative feedback mechanisms. By tailoring the spatial and spectral properties of cavity resonances, Dr. Cao is able to tune the degree of first-order coherence. This talk presents an overview of these unconventional, complex lasers, with a focus on their spatial coherence properties. Such lasers have been applied to speckle-free full-field imaging, bimodal microscopy, and parallel optical coherence tomography.

Dr. Hui Cao is the Frederick W. Beinecke Professor of Applied Physics and Professor of Physics at Yale University. She received her Ph.D. in Applied Physics from Stanford University in 1997. Prior to joining the Yale faculty in 2008, she was on the faculty of Northwestern University from 1997 to 2007. Her technical interests and activities are in the areas of mesoscopic optics, complex photonic materials and devices, nanophotonics, and biophotonics. She co-authored one book and 10 book-chapters, and published six review articles and 240 journal papers. She is a Fellow of the AAAS, APS and OSA.

BU Photonics Center
www.bu.edu/photonics

Boston University OSA/SPIE