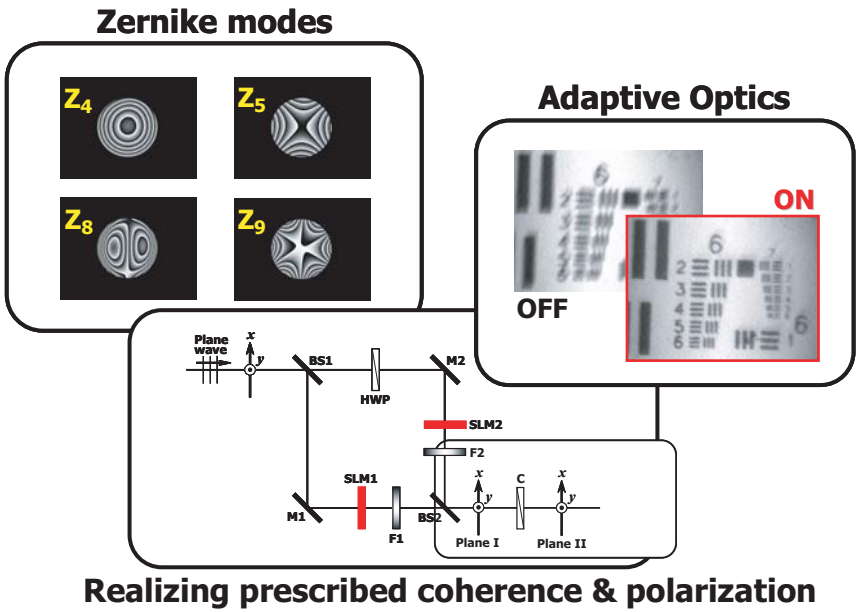
The Institute of OPTICS **Research Seminar** UNIVERSITY of ROCHESTER

Wavefront Control with Liquid-Crystal Devices and Some of Its Applications



Realizing prescribed coherence & polarization

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AIST, 2001-

We will describe the development of two types of adaptive optics systems with LC SLMs and application of them to various configurations of imaging, including retinal imaging.

3:00 pm, Monday, September 29, 2008
Sloan Auditorium, Goergen Building
Refreshments provided

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Abstract:
The control of the wavefront of light plays a key role in various fields of optics, especially in imaging. To do this a good deal of attention has recently been given to the use of liquid-crystal (LC) spatial light modulators (SLMs). As one of the most important applications, we have constructed two types of adaptive optics systems with LC SLMs and applied them to various configurations of imaging, including retinal imaging. In this talk, we will review some of these results obtained in our group and show that high-resolution (retinal) imaging is successfully achieved with our LC adaptive optics systems. A method of realizing prescribed coherence and polarization properties of light with LC SLMs will also be discussed in brief as a different, but promising application of the LC-based wavefront control.

Biography:
Tomohiro Shirai received his doctorate from Hokkaido University, Sapporo, Japan in 1994. He joined Mechanical Engineering Laboratory in 1994, and subsequently National Institute of Advanced Industrial Science and Technology (AIST) in 2001, where he is currently a Leader of Advanced Optical Imaging Group, Photonics Research Institute. He had a visiting appointment at the Department of Physics and Astronomy, University of Rochester in 1995, 2001, 2004, and 2006, and at CREOL, University of Central Florida in 2002. He was also a Visiting Research Fellow at University of Auckland and Industrial Research Limited, New Zealand in 1997-8. His current research focuses on optical coherence theory, adaptive optics for industry and medicine, and biomedical imaging. Dr. Shirai was awarded 1996 Optics Prize for Excellent Papers by the Japan Society of Applied Physics.