

Date : 24 November, 2006 (Friday)
Time : 10:00am-11:30am
Location : **Conference Room (Rm 214), East Building # 5,
Centre for Optical & Electromagnetic
Research/JORCEP, Zijingang campus,
Zhejiang University**

Partial Polarization and Coherence in Random Electromagnetic Fields

Professor Ari T. Friberg
President of the International Commission for Optics (ICO)

Abstract

In many applications of modern optical science and technology, such as near-field optics and spectroscopy, micro- and nano-physics, and nano-photonics, the electromagnetic description of light with its inherent vector features has gained increased importance. In practice optical radiation also suffers from fluctuations, and this leads to the concepts of partial polarization and partial coherence. A considerable amount of debate and controversy is associated with these notions. Some recent approaches and results towards properly formulating the degree of polarization, degree of coherence, and entropy in arbitrary, non-paraxial random electromagnetic fields are discussed. All these concepts are related to optical information. Light waves may transmit information in spatial channels, known as communication modes. The communication-modes approach related to optical near fields is briefly reviewed and applied to the resolution of typical SNOMs.

About the Speaker

Prof. Ari T. Friberg (PhD: Rochester 1980; D.Sc.: Helsinki) is the President of the International Commission for Optics (ICO) since 2005. He worked 1983-1996 at Helsinki University of Technology, from 1990 on with the Academy of Finland. In 1987-88 he was a Royal Society guest research fellow at Imperial College in London, and in 1996 a visiting scientist at the Technical University in Berlin. After a period as professor of physics in Joensuu, he was appointed in 1997 to his current position as professor of Optics at the Royal Institute of Technology (KTH) in Stockholm. During 2004-2005 he was on sabbatical at the Institute of Optics in Rochester (US) and the Institute of Microtechnology in Neuchatel, Switzerland.

Dr. Friberg's main research interests are in optical physics and electromagnetic optics. He has published over 150 peer-reviewed journal papers. He is a fellow of OSA. He is on editorial boards of Progress in Optics, Optics Communications, Optik, JEOS Rapid Publications, and OME Information (China), earlier also JEOS A: Pure and Applied Optics and Optical Revue (Japan). In 1998-2003 he was a topical editor of JOSA A. He has served on OSA's David Richardson Medal committee (2002-2003). Dr. Friberg was a founding member and first President of the Finnish Optical Society. He served on the board of the Swedish (1998-2004) and European Optical Societies (1998-2006). He is chair of the ICO Finnish territorial committee. During 2001-2005 he chaired the ETOP (Education and Training in Optics and Photonics) long-range planning committee. In 2005 he was elected President of the International Commission for Optics (ICO).

ALL ARE WELCOME !

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