

Announcement and Call for Papers for the Special Issue on "Electromagnetic Coherence and Polarization" in Optics Communications

Background and scope

With the rapid progress in topics such as near-field optics, micro-/nano-photonics and laser spectroscopy, it has become increasingly important to treat the electromagnetic field and its fluctuations in full vector description. This has led to a re-assessment of the concepts of coherence and polarization in random electromagnetic field. In particular, the degree of polarization in electric field that contains all three components, such as near field or focused electromagnetic wave, and the degree of coherence electromagnetic field has been in focus. Closely related topics are, for instance, entropy in random electromagnetic field, measurement of electromagnetic coherence and polarization, and the generation and applications of field with controlled states of polarization or coherence (both in free space and photonic devices). The fluctuation of electromagnetic wave naturally plays a role in nonlinear optical interactions. Many quantum-optical notions and phenomena, such as coherence, purity, and entanglement, have various analogues and associations in electromagnetic coherence and polarization.

A workshop on partial electromagnetic coherence and 3D polarization is held in Koli in Finland on 24-27 May 2009; see <http://www.joensuu.fi/fysiikka/koli09>. This workshop serves as a basis for the Special Issue, but contributions on these topics are invited from all scientists within the optics community.

Submission and deadlines

Authors should submit their contributions in the format of Optics Communications to the special section set up for the Special Issue on the journal website (<http://ees.elsevier.com/optics/>). All manuscripts will be peer-reviewed. The deadline for the submission of manuscripts is **30 June 2009**, and the expected publication is in early 2010.

Further information can be obtained from the co-editors of the Special Issue, Ari T. Friberg (Helsinki University of Technology, ari.friberg@tkk.fi) and Jari Turunen (University of Joensuu, jari.turunen@joensuu.fi).