

Selected Abstracts from Other Physical Review Journals

Abstracts of papers that are published in other Physical Review journals and may be of interest to Physical Review E readers are printed below.

Propagation of transverse optical coherence in random multiple-scattering media Chung-Chieh Cheng and M. G. Raymer
Oregon Center for Optics and Department of Physics, University of Oregon, Eugene, Oregon 97403 (Received 6 March 2000; published 19 July 2000)

We experimentally investigate the evolution of the transverse spatial coherence of light as it traverses a random, multiple-scattering medium. For near-forward scattering, it has been proposed that the wave-transport process can be well described by a transport equation for the spatial-angular Wigner function of the

light, or equivalently for the two-point spatial coherence function (mutual intensity). We find good agreement between the wave-transport theory and our experimental results for media of different thickness. In a dense medium (for example, optical distance, or density, greater than 5), the nature of the scattered light field can be qualitatively described by a complex Gaussian-Schell model, which raises an interesting interpretation about the process of long-path optical transport. [Phys. Rev. A **62**, 023811 (2000)]