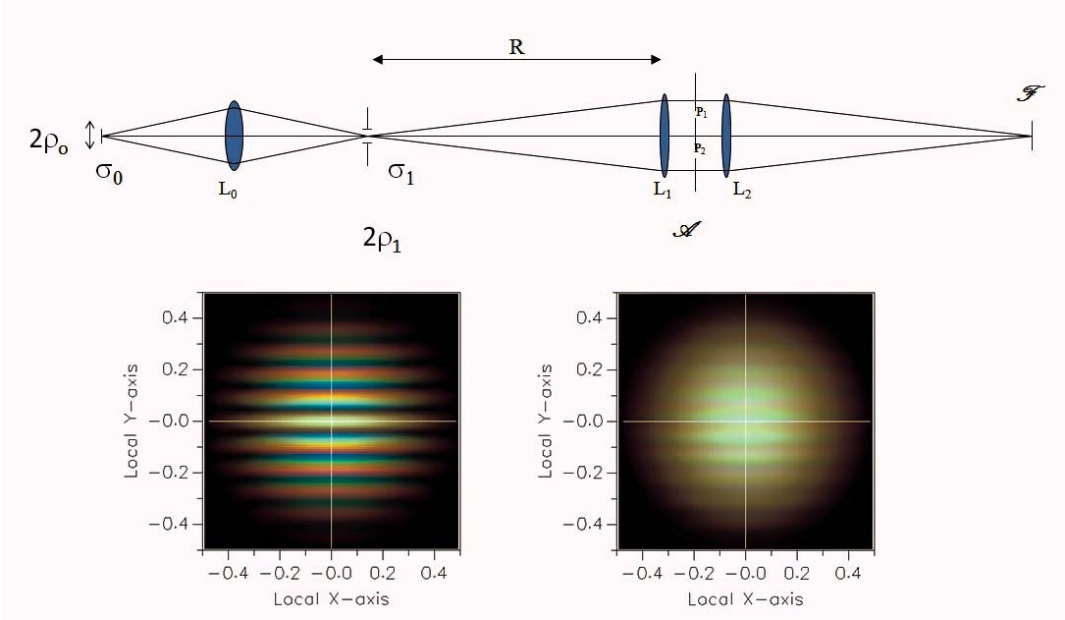
The Institute of OPTICS

Colloquium

UNIVERSITY of ROCHESTER

Teaching Old Rays To Do New Tricks:

Expanding the capabilities of geometrical optics raytracing into physical optics modeling



Richard N. Pfisterer
President, Photon Engineering, LLC

BS (1979) and MS (1980) in Optics, U. of Rochester
Head Optical Design at TRW 1980's
Co-Founder and CEO of Photon Engineering

This talk we will decribe how going from a representation in terms of rays into beamlets blurs the distinction between geometrical and physical optics, and opens up new possibilities for coherent beam propagation, partial spatial coherence modeling, multiple beam interferometry, zone plate simulation, and other applications.

3:00 pm, Monday, Sept 27, 2010
Sloan Auditorium, Goergen 101
Refreshments provided.

HAJIM
SCHOOL OF ENGINEERING
& APPLIED SCIENCES

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Expanding the capabilities of geometrical optics raytracing into physical optics modeling

Richard N. Pfisterer
President, Photon Engineering, LLC

Abstract: Traditionally geometrical rays have been discounted by many optical scientists as being "simple" delta functions incapable of modeling many physical optics effects. However the conversion of rays into beamlets blurs the distinction between geometrical and physical optics, and opens up new possibilities for coherent beam propagation, partial spatial coherence modeling, multiple beam interferometry, zone plate simulation, and other applications that a lowly ray isn't supposed to be able to do.

Biography: Richard Pfisterer received his BS (1979) and MS (1980) at the University of Rochester. Former head of optical design at TRW during the mid-1980's, he is the president and co-founder of Photon Engineering, and co-author of the FRED optical engineering software. His optical research interests include lens design, optical algorithm development, and stray light analysis/scattered light phenomenology.