Applied Physics & OSA

Optics Seminar

Fundamentals and Application of Slow and Fast Light

Prof. Robert W. Boyd

Professor of Optics and Physics, University of Rochester

Abstract:

Research performed over the past several years has demonstrated new methods for controlling the velocity of propagation of pulses of light through material systems. Ultra slow velocities (tens of meters per second) and ultra fast velocities (including negative velocities) have been demonstrated. This talk will commence with an overview of this field and will include a discussion of some new ideas for applications of fast and slow light based on the use of room temperature solids.

Brief Biography:

Robert Boyd was born in Buffalo, New York, March 8, 1948. He received the B.S. degree in physics from the Massachusetts Institute of Technology and the Ph.D. degree in physics in 1977 from the University of California at Berkeley. His Ph.D. thesis was supervised by Professor Charles H. Townes and involves the use of nonlinear optical techniques in infrared detection for astronomy. Professor Boyd joined the faculty of the Institute of Optics of the University of Rochester in 1977. His research interests include studies of "slow" and "fast" light propagation, quantum imaging techniques, nonlinear optical interactions, studies of the nonlinear optical properties of materials, the development of photonic devices including photonic biosensors, and studies of the quantum statistical properties of nonlinear optical interactions. Professor Boyd has written two books, co-edited two anthologies, published over 230 research papers, and been awarded five patents.

Wednesday, March 14, 2007.
4:00pm-5:00pm.
Watson 104

Refreshments will be available in the Watson Lobby at 3:45pm