

PHOTONICS SEMINAR

Professor Govind Agrawal

Dynamic Optical Resonators

May 22, 2013

2:00-3:00 p.m.

Room 901

Photonics Center

8 Saint Mary's Street

*Refreshments will
be served!*



Refractive index of the intracavity medium can change with time in the case of dynamic optical resonators. Recently a novel phenomenon known as “adiabatic wavelength conversion” has been discovered in such resonators. Dr. Agrawal has developed a general theory of light propagation inside dynamic optical resonators using time-dependent perturbation theory of quantum mechanics. In this talk, Dr. Agrawal presents this theory and discusses how it can be used to understand the observed behavior in several recent experiments. Dynamic wavelength shifts can also occur in the absence of optical feedback. This situation will be discussed using a novel time-transformation approach.

Professor Govind Agrawal received a B.S. from the University of Lucknow in 1969, and an M.S. and Ph.D. from the Indian Institute of Technology, New Delhi in 1971 and 1974, respectively. After holding positions at Ecole Polytechnique, France, City University of New York, and AT&T Bell Laboratories, Dr. Agrawal joined the faculty of the Institute of Optics at the University of Rochester, in 1989 where he holds the positions of Professor of Optics, Professor of Physics, and LLE Senior Scientist. His research interests span from optical communications and semiconductor lasers to nonlinear fiber optics and silicon photonics. He is the author or coauthor of more than 400 research papers and eight books including *Fiber-Optic Communication Systems* (4th ed., Wiley 2010) and *Nonlinear Fiber Optics* (5th ed., Academic Press 2013).