Joint APh-OSA and
RF & Microwave Seminar

Microwave Photonics

Dr. Willie Ng

HRL Laboratories, Malibu, CA

This seminar will describe the utilization of photonics (at the wavelengths of 1310/1550 nm) in microwave antenna systems. After a brief introduction to RF-photonic link technologies, we will describe their applications in antenna remoting, optical beamforming, and signal processing. We will illustrate how the broadband capabilities of photonics and wavelength division multiplexed (WDM) technologies can be exploited to construct optical beamforming networks that cover multiple microwave bands. In addition, this seminar will describe HRL's recent work in photonic-assisted analog-to-digital conversion where picosecond optical pulse trains with low-jitter are used to accomplish photonic sampling at 10 Gsamples/sec.

Brief Biography:

Willie W. Ng received his B. S. degree in electrical engineering from Case Western Reserve University, Cleveland, OH and the M.S. and Ph.D. degrees, both in electrical engineering, from the California Institute of Technology, Pasadena, CA. For his Ph.D. thesis under Prof. A. Yariv, he demonstrated highly collimated, grating-coupled emission from GaAlAs/GaAs distributed Bragg reflector lasers.

He joined HRL Labs, Malibu, Calif. in 1985 where he is, at present, a Principal Research Scientist and Manager of the Photonics Department. Under DARPA and Air Force sponsorships, he has led HRL teams that demonstrated a variety of photonic devices/subsytems designed for microwave antenna systems. He is the author and co-author of over 90 journal articles and conference papers, and holds 11 U.S. patents in the area of photonics technology. Cited for pioneering contributions to RF-photonics technologies, he was one of six individuals selected to receive the Excellence in Technology Award in 2005 from the Raytheon Company.

Friday, May 12, 2006.
4:00pm-5:00pm.
Watson 104

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