HAWAII CENTER FOR ADVANCED COMMUNICATIONS

Presents:

RF Propagation Modeling and the Advanced Refractive Effects Prediction System (AREPS) Overview at SSC Pacific

by: Amalia E. Barrios

Atmospheric Propagation Branch
SPAWAR Space and Naval Warfare Systems Center, Pacific

Tuesday, February 10, 2009
10:00 a.m. – 11:00 a.m.
University of Hawaii at Manoa, Holmes Hall Room 389

Abstract:

The development of the Advanced Propagation Model (APM) has provided the U.S. Navy a means by which to obtain near-real time predictions of field strength for EM performance assessment in a wide range of environmental conditions. The APM is just one of the RF propagation models integrated within the Advanced Refractive Effects Prediction System (AREPS) software application. The AREPS program computes and displays a number of electromagnetic (EM) system performance assessment tactical decision aids. These tactical decision aids are radar probability of detection, electronic surveillance measure vulnerability, High Frequency (HF) to Extremely High Frequency (EHF) communications, simultaneous radar detection and electronic support measure (ESM) vulnerability, and surface-search detection ranges. The AREPS program is used by not only all three U.S. military services, but by many research and government facilities around the world. The presentation will give a general a general overview of the AREPS capabilities and will briefly describe the various propagation models within the application.

Bio:

Amalia E. Barrios received the B.S. degree in Physics from the California State University at Fresno, California in 1983 and the M.S.E.E. degree in Communication Theory and Systems from the University of California, San Diego in 1989. In 1983 she joined the Atmospheric Propagation group in what is now the Space and Naval Warfare Systems Center, Pacific. Since 1983 she has developed and co-developed radiowave propagation models and algorithms for use in the VHF to Q-band frequencies, accounting for anomalous propagation conditions and variable terrain. This has culminated in the Advanced Propagation Model (APM), which is now the standard radiowave propagation model for U.S. Navy operational use. She is also on the AREPS software development team.