Seminar

GPS Reflections

Typical position, navigation, and timing (PNT) applications of the Global Positioning System (GPS) depend on clear reception of the GPS satellite signals without interference from other transmitters or multipath reflections from surfaces near the antenna. For these applications, multipath is a source of error that limits performance for both instantaneous stand-alone positioning and high precision solutions for ground stations or satellite attitude or orbit estimation. Researchers have also been developing techniques to use GPS reflections from the Earth surface to observe surface properties and receiving platform height. My talk will provide an overview of my recent GPS-related research topics,
focusing primarily on techniques for modeling multipath as an error source in spaceborne environments and, conversely, using surface reflected observations for altimetry and small-scale feature detection.

Friday, February 1 3, 2015 2:00 – 3:00 pm
DLC Bechtel Collaboratory

Biography:
Penina Axelradhas been a faculty member in the Department of Aerospace E ngineering Sciences (AES)
and the Colorado Center for Astrodynamics Research (CCAR) at the University of Colorado Boulder since 1992. She has served as Department Chair since 2012. Her research interests include technology and algorithms for GPS-based orbit and attitude determination for spacecraft in LEO and HEO, multipath characterization and correction for spacecraft, aircraft, and ground reference stations, and remote sensing using GPS reflection and occultation measurements. She is a Fellow of the I ON and the
American Institute of Aeronautics and Astronautics (AIAA), a senior member of IEEE, and a member of Sigma Xi. Dr. Axelrad has been honored with several awards for her contributions to the GPS field, including the 1996 Lawrence Sperry Award from the AIAA and the 2009 Johannes Kepler Award from
the ION.

Penina Axelrad

Chair, Aerospace Engineering Sciences

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