Time & Location: March 25, 2015 at 1:00 PM in HEC 438
Title: Microwave Radiometer (MWR) Evaluation of Multi-Beam Satellite Antenna Boresight Pointing Using Land-Water Crossings for The Aquarius/SAC-D Mission

This research concerns the CONAE Microwave Radiometer (MWR), on board the Aquarius/SAC-D platform. MWR's main purpose is to provide measurements that are simultaneous and spatially collocated with those of NASA’s Aquarius radiometer/scatterometer. For this reason, knowledge of the MWR antenna beam footprint geolocation is crucial to mission success. In particular, this thesis addresses an on-orbit validation of the MWR antenna beam pointing, using calculated MWR instantaneous field of view (IFOV) centers. This procedure compares CONAE-calculated IFOV centers at land/water crossings against high-resolution coastline maps. MWR IFOV locations versus time are computed from knowledge of the satellite's instantaneous location relative to an earth-centric coordinate system (provided by on-board GPM receivers), and a priori measurements of antenna gain patterns and mounting geometry.

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Approved for distribution by W. Linwood Jones, Committee Chair, on March 12, 2015.

The public is welcome to attend.