Willy
Bertiger
JPL
Oral
For the 2013 OSTST meeting we focused on assessing the changes in GPS determined orbit of JASON2 due to time variable gravity and changes in the GPS transmit antenna calibrations by the IGS effecting low earth orbiters.

For time variable gravity, we will evaluate the orbit quality based on two fields, EIGEN6S (includes GRACE data to 2009), and a fit to the JPL determined GRACE field over the time frame of the full JASON2 mission. For the high frequency effects of the ocean and atmosphere, we use either the current GRACE product release of Atmosphere and Ocean De-aliasing product (AOD1B) , a time series of spherical harmonics every 6-hours or 3-hour time series for ITRF2013 covering through 2010. We will evaluate the effects of these new models in terms of altimeter cross-overs and differences with other POD center determined orbits as well as the GDR.

The International GNSS Service (IGS) has recently changed the antenna calibrations (phase center as a function of azimuth and elevation) in a region only seen by low Earth orbiters. For JASON2 (and other low Earth orbiters including JASON and Topex), we have empirically determined antenna calibrations for the receiving antenna, based on a linear extrapolation of the previous IGS antenna calibrations to the JASON2 field of view. The recent IGS changes are inconsistent with a linear extrapolation. We have re-estimated the JASON2 antenna in a consistent manner. The new calibrations result in a small improvement in altimeter cross-over tests.
OSTS session
Precision Orbit Determination
Meeting name
Ocean Surface Topography Science Team (OSTST) Meeting
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