

Space-based calibration of GPS antenna phase centre offsets and its impact on precise geophysical applications

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We will describe the approach developed at JPL for the calibrations of the GPS transmit antennas, using the GRACE GPS antennas as reference. We will present the estimated values for the carrier phase offsets and the pseudo range offsets of the GPS transit antenna as 2-D maps and as vector offsets, and contrast them with the ground-based calibrated values. We will discuss our recent test and validation experiments in precision applications of GPS, such as orbit determination, geodesy, troposphere recovery, and the terrestrial reference frame. Finally, we will discuss the prospects for standardization in the international GPS user community.