



Phase Center Corrections for new GNSS-Signals

Johannes Kröger, Yannick Breva, Tobias Kersten, and Steffen Schön
Institut für Erdmessung, Leibniz Universität, Hannover, Germany

Phase center corrections (including corrections for phase center offset and phase center variations) are nowadays mandatory for high accuracy GNSS applications. Currently, only L1- and L2 frequencies for GPS and GLONASS are provided and published in the Antenna Exchange Format (ANTEX) maintained by the antenna working group of the International GNSS Service IGS. Field calibrations values for new signals like Galileo or GPS L5 are still missing.

The Institut für Erdmessung (IfE) is one of the IGS accepted absolute antenna field calibration institutions and provides PCC using the so-called Hannover-Concept, i.e. using a robot to precisely rotate and tilt the antenna under test. This concept has been extended into an experimental approach where PCC of new signals are estimated in post-processing using spherical harmonics.

In this contribution, we describe the extended concept and show first patterns for the GPS L5 as well as the Galileo E1 and E5 signals. After a short introduction into the method of absolute antenna field calibration, the roboter model as well as the adjustment concept will be presented. We will show that an estimation of PCC is feasible with the method developed at the IfE. The patterns will be presented and discussed for antennas typical to IGS stations.