

ON THE DETERMINATION OF ANTENNA PHASE CENTER CORRECTIONS IN A MULTI-GNSS MULTI- FREQUENCY APPROACH

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Abstract

The accuracy of user positions estimated by Precise Point Positioning (PPP) techniques depends - among others - on a consistent Phase Center Correction (PCC) model. Different investigations and modernizations of the space segment and the correction models can be noticed. Parallel to the introduction of the new International Terrestrial Reference Frame ITRF2008, by the IERS in May 2010, the model for the widely used antenna correction igs05.atx in the well known ANTEX format is updated starting with GPS Week 1632 by a new one, called igs08.atx. This new file satisfies the need of Multi-GNSS constellation antenna corrections, which are demanded by a broader community.

The GNSS modernization process includes the successful launch of a GPS II-F satellite (PRN25) with the first operational L5 signal, a second one will be launched in June this year. In the near future new GLONASS-K satellites will be launched, supporting the transmission of the new L3 signal as well as interoperable acquisition methods (CDMA additional to FDMA) on this signal. Consequently, for high-end applications based on carrier phase measurements, like PPP, a set of consistent absolute phase center corrections (PCC) is necessary.

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