
 UKRAINIAN LOCAL ANALYSIS CENTRE

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Software Used : GAMIT v. 10.20, GLOBK v. 5.19, developed at MIT/SIO

Stat. Included in Analysis : see attachments (Annex A, C, D)

LPI solutions generated : globkwww.org Site position in GLOBK format, based on
 weekly combined solution
 for GPS Day 'D' and LPIwww7.snz Site position in SINEX format, based on
 weekly combined solution
 GPS week 'www' LPIwwwD.tro Daily files of 1-h troposphere delay
 estimates in SINEX format (based on 1-day solutions).

 MEASUREMENT MODELS

Preprocessing : Cycles slips detected and fixed.
 : Unresolved cycle slips estimated in solution.
 : Postfit editing using 4 times RMS deletion.

Basic Observable : Doubly differenced, ionosphere-free combination of L1
 : and L2 carrier phases. Pseudoranges are used only to
 : obtain receiver clock offsets and in ambiguity resolution.
 : Sigma on doubly difference LC phase: Site and elevation
 : dependent based on iterated analysis.
 : Cleaning at 30-second rate.
 : Elevation angle cutoff: 10 degrees.
 : Data sampling rate: 2 minutes

Modelled : Undifferenced LC and PC combinations
 Observable : CA-P1 biases from CODE applied
 Ground antenna : Absolute PCV from igs08_www.atx are applied
 Marker -> antenna: dN, dE, dU eccentricities from IGS sinex file applied
 ARP eccentricity : to compute station marker coordinates

Troposphere : A priori zenith delay: nominal constant; 2-hour piece wise linear function estimated, 1 NS and EW gradient per day. Mapping function: Niell. Met data input: none

Ionosphere : Not modeled (ionosphere eliminated by forming the ionosphere-free linear combination of L1 and L2).

Plate motions : Station velocity model applied for a priori positions.

Tidal displacements : Solid earth tidal displacement: constant Love number tides frequency dependent radial tide (K1). Pole tide: Applied to Mean IERS pole position. Ocean loading: Applied (Scherneck Model FES2004).

Non-tidal loading : Not applied.

Earth Orientation Parameter (EOP) Model : IERS Bulletin A plus diurnal and semidiurnal variations in x, y, and UT1 models (EOP).

Satellite center of mass correction: Phase centers offsets from igs08_www.atx applied.

Satellite antenna phase variations : Not applied.

ESTIMATED PARAMETERS (APRIORI VALUES & SIGMAS)

Adjustment : Weighted least squares plus Kalman filter

Station coordinates : Three Networks of 50 stations per network. 3-4 common stations between networks. Weak constraints applied to site coordinates.

Troposphere : Piece-wise linear function in zenith delay estimated once per 2-hr for each station constrained by a random-walk process to 20mm/sqrt(hr).

Ionospheric : Not estimated (first-order effect eliminated by linear combination of L1 and L2 phase).

Ambiguity : Resolution attempted for all baselines but resolving Melbourne-Webena Widelines for L2-L1 using pseudo-ranges, and then L1 from geodetic solution using ionospheric free observable.

REFERENCE FRAMES

Inertial (J2000.0) : Geocentric; mean equator and equinox of 2000 Jan 1 at 12:00

Terrestrial : Frame IGB08 realized by rotation and translation on to as many of 19 IGB08 reference sites analyzed.