

UKRAINIAN LOCAL ANALYSIS CENTRE

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Software Used : GIPSY-OASIS Software v. 6. 4, developed at JPL

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

LPI solutions generated : LPIwwwD.SNX sinex file for 1 day
for GPS week 'www' LPIwww7. ITR processing summary file for 1 week in
IGb08/IGS14
LPIwww7. ETR processing summary file for 1 week in ETRF2000
LPIwww7. ITR processing summary file for 1 week in UCS-2000

MEASUREMENT MODELS

Preprocessing : Delete outliers and detect cycle slips, by processing undifferenced phase and pseudorange data. Cycle slips are detected by using linear combinations of L1, L2, P1 and P2 data, the wide-lane combination, and the ionospheric, or narrow-lane, combination. Data is decimated to 5 minutes.
Reference frame sites chosen from preferred list.

Basic Observable : Undifferenced ionosphere-free carrier phase, LC
Undifferenced ionosphere-free pseudorange, PC
Elevation angle cutoff: 7 degrees.
Data sampling rate: 5 minutes
Data weight, LC: 1 cm
Data weight, PC: 1 m

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 model : Wet and Dry from GPT2 model (Boehm et al, 2007)
Mapping function: GPT2 model
Estimation : zenith path delays and horizontal gradients
every 5 minutes for each station

Ionosphere : 1st order effect: Removed by LC and PC combinations
2nd order effect: Modeled.

Plate motions : Station velocity model applied for a priori positions

Tidal : Ocean loading: FES2004 applied
coefficients provided by H.G. Scherneck.
Solid Earth tides : IERS 2010 Conventions
Pole tide: IERS 2010 Conventions
Surface deformations computed at JPL with respect to
instantaneous center of mass

Non-tidal loading : Not applied.

Earth Orientation
Parameter (EOP)

Model : IERS 2010 Conventions for diurnal, semidiurnal, and
long period tidal effects on polar motion and UT1.

Satellite center

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

Satellite antenna

phase variations : PCV model w.r.t. phase center from igs08_www.atx applied.

ESTIMATED PARAMETERS (APRIORI VALUES & SIGMAS)

Adjustment : Stochastic Kalman filter/smoothing implemented as
square root information filter with smoother

Station : Daily free-network estimates for all sites.
coordinates : Combine free-network estimates to get daily solution.
Apply three rotations to daily solution.

Troposphere : Zenith delays and horizontal gradients estimated as stochastics
at each data interval (5 min) for each station.

Ionospheric : Not estimated.

REFERENCE FRAMES

Inertial : Geocentric; mean equator and equinox of 2000 Jan 1 at 12:00 (J2000.0).
Terrestrial : IGS08 station coordinates and velocities