Splinter Meeting of the IGS Antenna Working Group

15:30 – 17:00
Splinter Room 2

Ralf Schmid

Deutsches Geodätisches Forschungsinstitut

1. Satellite antenna issues

1.1 PCV values for nadir angles > 14°

- cf. oral presentation by Jäggi, Dilssner, Dach et al.

- initiated by O. Montenbruck in Newcastle

- joint effort of CODE and ESOC

- good agreement for block-specific estimates (PCV values for nadir angles ≤ 14° fixed to igs08.atx)

- adopt final CODE-only solution?
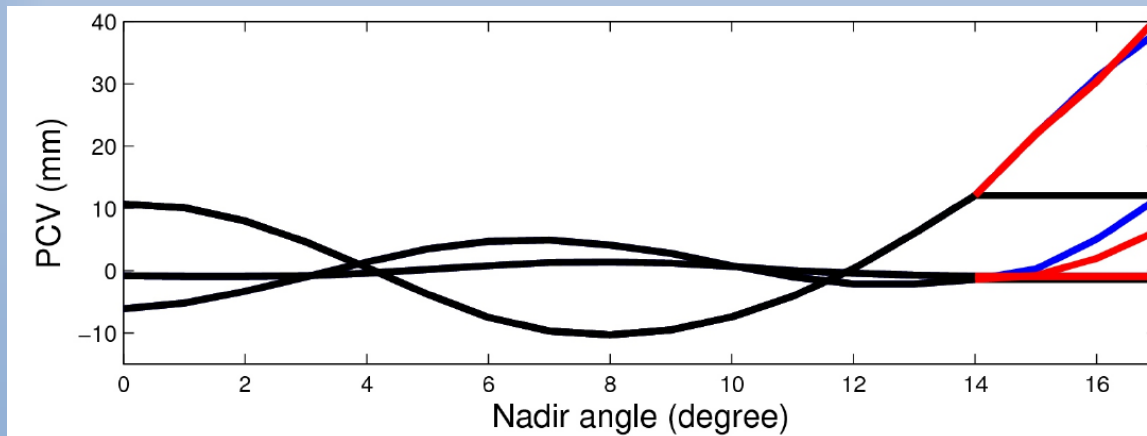
Jäggi et al. 2012

1. Satellite antenna issues

1.2 Azimuth-dependent PCVs

- cf. oral presentation by Dilssner, Springer et al.

- when to introduce such values? (too late for repro2, redo PCV extension, etc.)

- independent estimates available? accept smaller redundancy for igs08.atx PCVs?

- difficult to get PCV parameters consistent with z-offsets derived from SINEX files

- (consistency with nadir-dependent model could be kept, if the mean value over all azimuth angles was consistent with the purely nadir-dependent value)
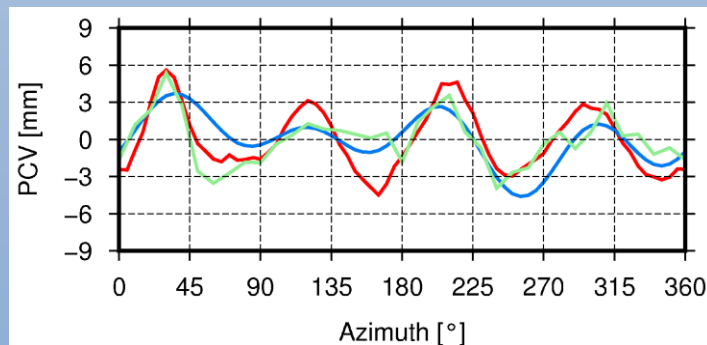
1. Satellite antenna issues
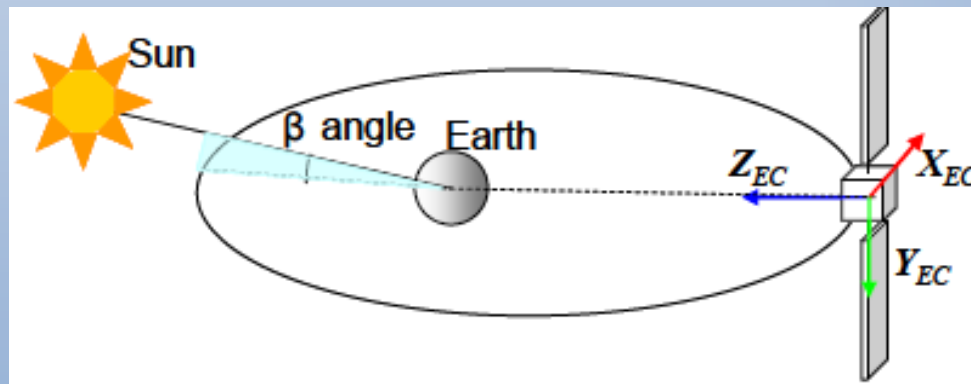
1.3 Phase center corrections for new GNSS

- GPS L5
- GIOVE/Galileo
- QZSS
- Compass
- cf. presentation by O. Montenbruck
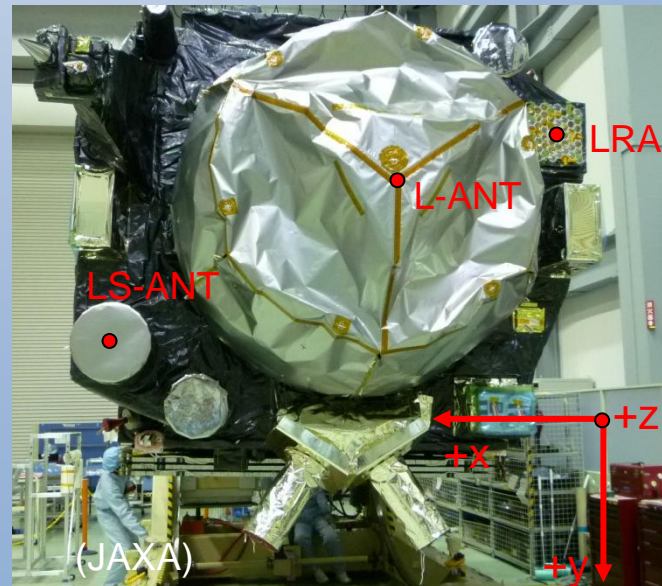
1. Satellite antenna issues

1.4 IGS attitude model

- defined in ANTEX format description
- inapplicable for certain attitude modes of QZSS, Compass and SBAS
- adopt manufacturer-defined spacecraft body frames?
- cf. presentation by O. Montenbruck

2. Receiver antenna issues

## 2.1 Approval of NGS to be an IGS calibration institution

- cf. oral/poster presentation by Bilich et al.

- significant progress since Newcastle

- campaign together with the University of Bonn (chamber) and Geo++ GmbH (robot): calibration of several identical antennas

- systematic differences between NGS and Geo++, especially on L2; agreement between Geo++ and Bonn not significantly better

- systematic PCV differences between calibration institutions are amplified in the position domain; should be further investigated

- NGS calibrations urgently needed for the reintroduction of NGA stations into the IGS network

2. Receiver antenna issues

2.2 Impact of calibration differences

- cf. poster presentation by Baire et al.

- individual vs. type mean calibrations

- calibration differences between institutions (robot vs. chamber)

- amplification in the position domain:

  – factor of 3 (ionosphere-free linear combination)

  – further amplification depending on troposphere modeling, etc.
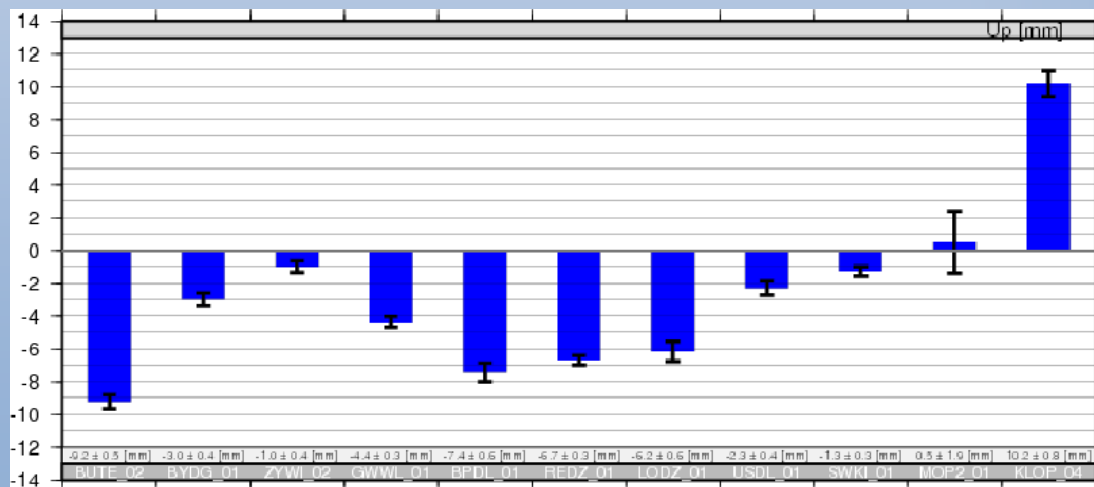
2. Receiver antenna issues

2.3 Chamber calibration results from Bonn for M-GEX

- could the University of Bonn provide a set of calibrations for the new GNSS (GPS L5, Galileo, etc.) to the IGS?

- should those calibrations be added to the official IGS phase center model or only provided to potential M-GEX ACs?
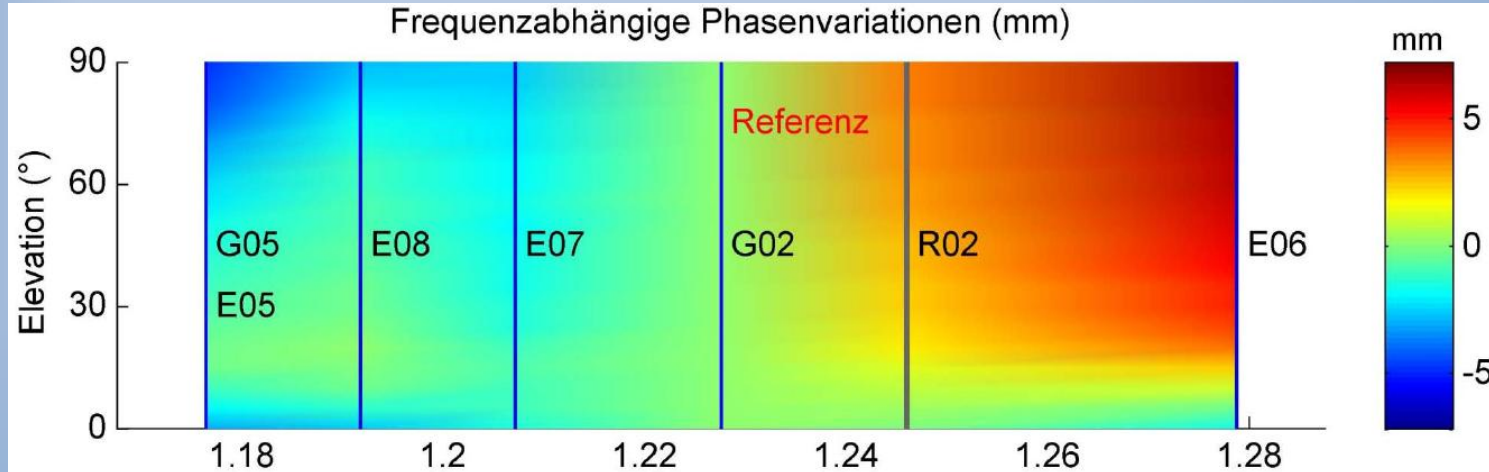

Becker et al. 2010

2. Receiver antenna issues

2.4 JPSREGANT subtypes

- setup of JPSREGANT_DD_E and JPSREGANT_SD_E was modified without changing the name of the antenna somewhen in 2000

- subtypes identified for most IGS stations via serial number, coordinate jumps in time series, local ties, etc.

- site logs updated ("pending"), IGb08 coordinate corrections available

- update of RINEX headers, etc. missing

- how could the CB be supported? changes possible in time before the start of repro2?
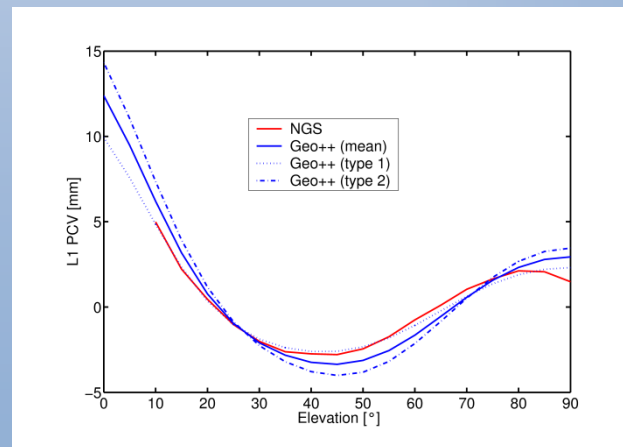
3. CB antenna file issues

3.1 rcvr_ant.tab

- how to improve cooperation between calibration institutions and the CB?
- add satellite (antenna) names for new GNSS: GALILEO-2, Compass

3.2 antenna.gra

- inconsistent use of TOP (top of pole)

3.3 igs08.atx

- future updates (when? how?)
- RMS values

4. Newcastle wrap-up (still tbd.)

4.1 Collect radome properties for rcvr_ant.tab

4.2 ANTEX update

- carrier-to-noise patterns, near- and far-field effects, code patterns, frequency-specific GLONASS calibrations

4.3 Antenna northing for antenna.gra

- north(ing) reference point (north mark NOM, cable connector CAC, display panel DIS, PC card slot PCC, etc.)