

IGN Analysis Center Update

*IDS AWG Meeting,
DGFI/TUM, Munich, April 4, 2019*

P Willis (IGN), W.I. Bertiger (NASA/JPL)

Summary of AC Status (1)

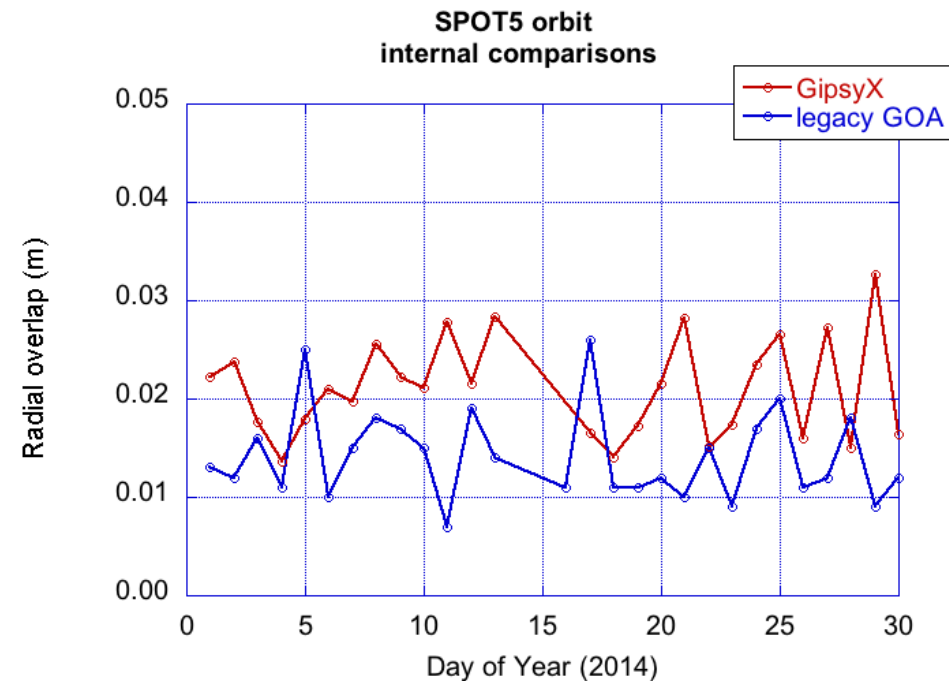
Legacy Gipsy/Oasis (GOA).

- AC will continue to submit SINEX Solutions every three months until a complete solution is provided by GipysX.
- No new code development or updates for Legacy software: the only updates to be applied will be addition of stations, and updates of satellite ancillary information (e.g. mass, maneuvers, attitude)

Summary of AC Status (2)

GipsyX (New software)

- Full year processed with SPOT-5 (2014). Results appear to be correct, but the orbit overlaps are worse for GipsyX than for the legacy Gipsy. This may be due to different models or processing strategies (e.g. gravity field, atmospheric drag).



Summary of AC Status (3)

GipsyX (New Software)

- We processed a full year of Jason-2 RINEX data, processing it as a Doppler measurement. The external independent test (comparison with GPS orbit) shows excellent consistency.

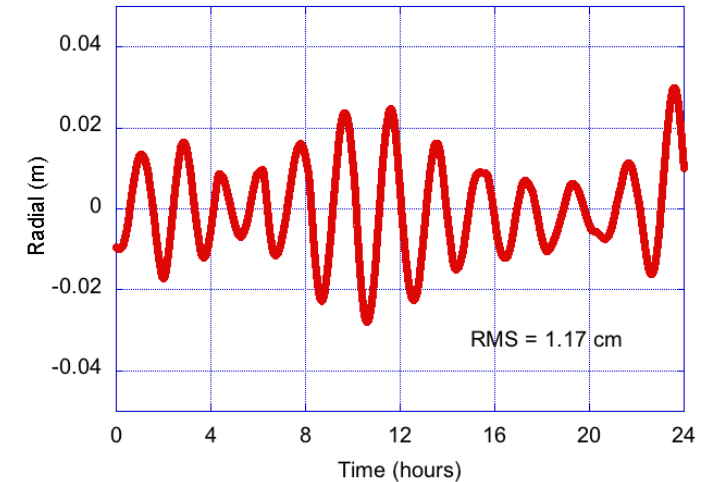
(We resolved an error in the definition of the partial derivative for defining the Doppler model in the software)

- For the present the GipsyX uses the clock model provided by CNES in the data file. The next step would be to estimate it using the DORIS pseudorange.

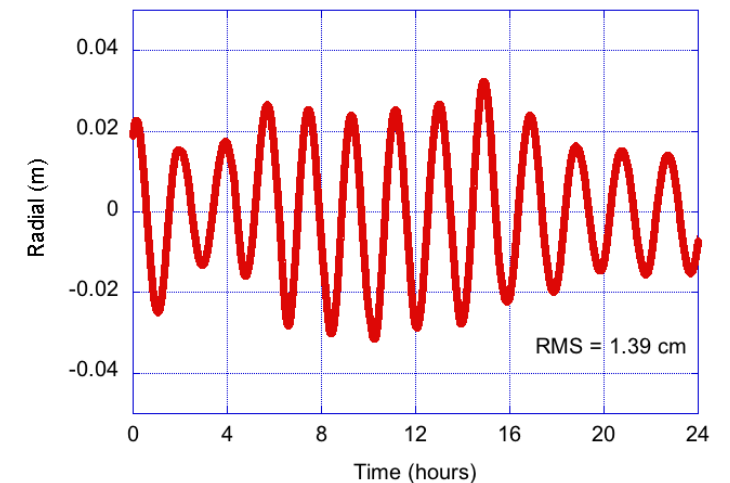
- One day of data as been processed using DORIS phase only. The current limitation is that we estimate the ground station clock per pass as a constant parameter and not as a clock parameter. The required modification will probably be done in June.

Residuals are good and comparisons with Doppler orbits are within the expected error bars. As presented by Flavien, DORIS phase processing is the same as GPS processing.

Jason2 orbit (19-Feb-2014)
GipsyX results
DORIS Doppler vs. GPS data



Jason2 orbit (19-Feb-2014)
GipsyX results
DORIS phase vs. GPS data



Summary of AC Status (4)

Other work.

- We implemented satellite models for all DORIS satellites (old and new) but only SPOT5 and Jason2 were tested

Publications.

- A new article is in preparation (Bertiger et al.), presenting all models and capabilities of GipsyX (mostly for GNSS).