

The ASI/CGS operational production

(in response to the “Positioning & Earth Orientation” cfp)

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The ASI/CGS production service for ILRS

Service operational requirements

Frequency: weekly

Issue: within 12:00 PM UT, each Tuesday (CD)

Analysed arc: previous week (Sunday-Saturday)

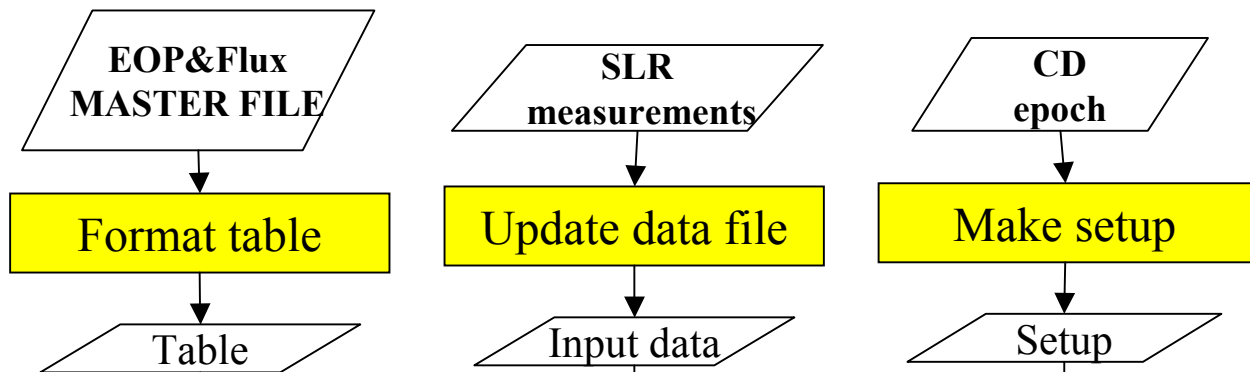
Submitted parameters: station coordinates, X-pole, Y-pole, LOD

Procedure strategy

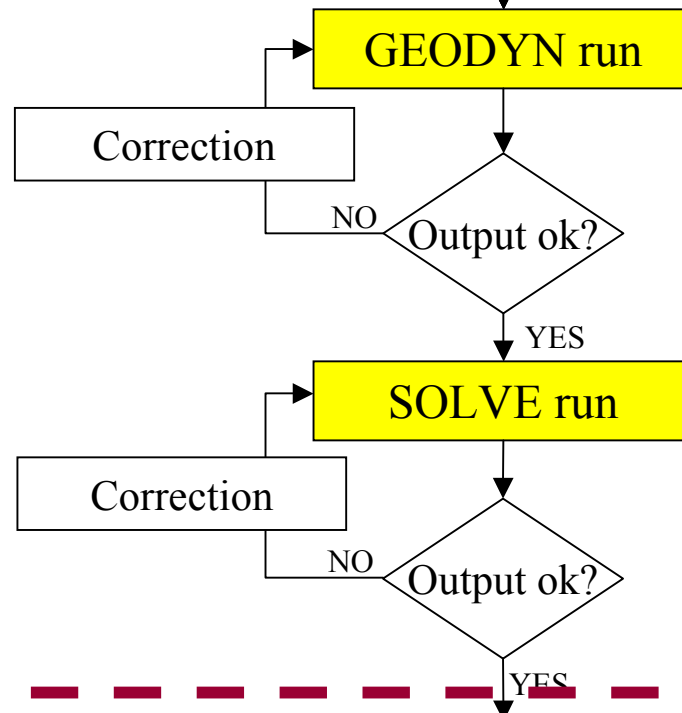
- Input preparation
- Data reduction & quality control (Geodyn/Solve 'core' SW)
- Output formatting

The whole processing chain is fully automated

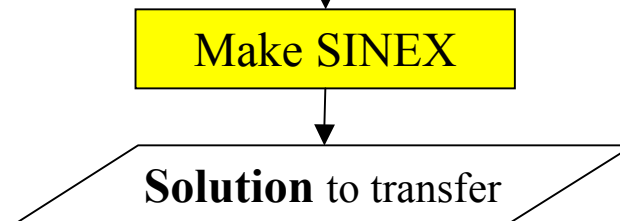
Input preparation



Data Reduction & Control



Output formatting



Submitted solutions: parameters

- **SINEX files submitted starting from June 3rd, 2003 (weekly arcs from Nov. 15th)**
- **Etalon satellites added since 040228 solution on**
- **'Associate' stations not included in the solutions**

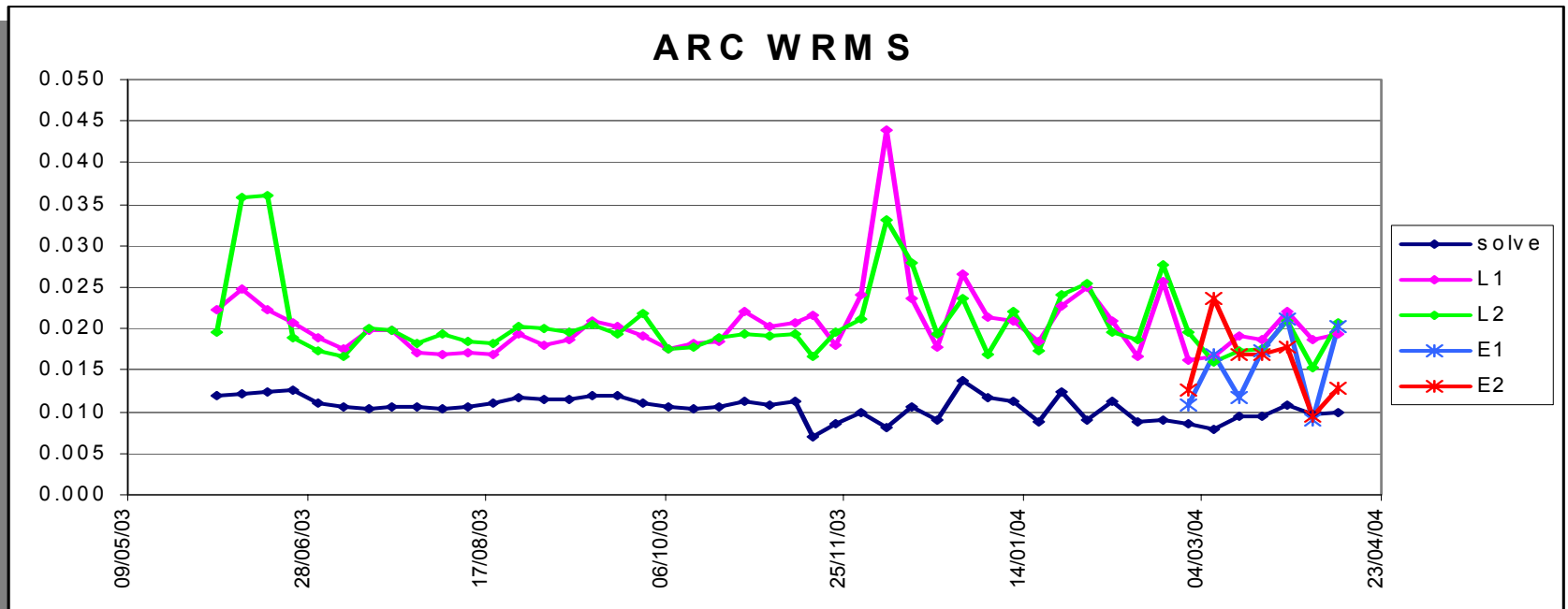
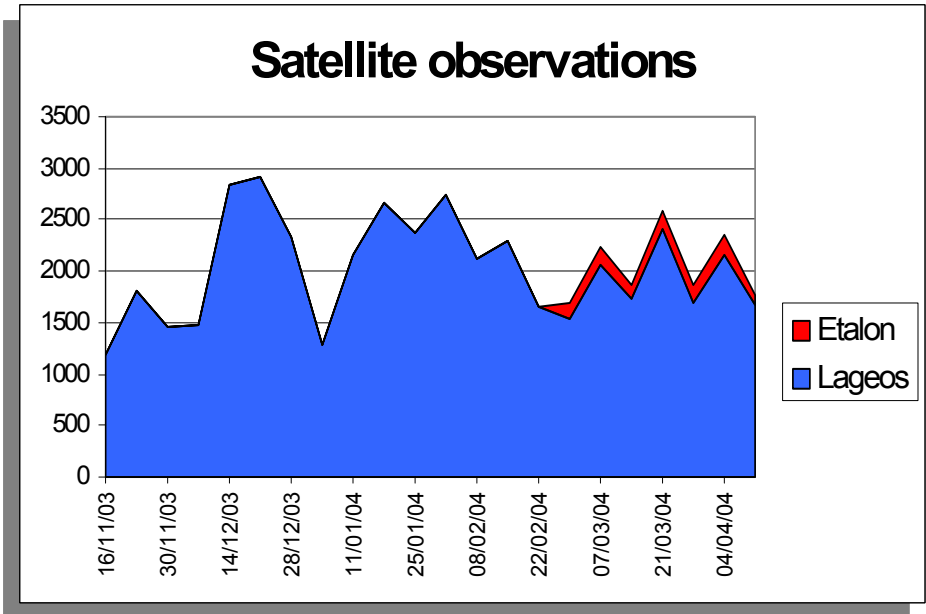
Estimated Parameters

- **weekly station coordinates**
- **daily EOP X,Y, UT1 and LOD**
- **weekly range biases for:** 1181 Potsdam
7836 Potsdam
7824 San Fern.
1884 Riga
7811 Borowiec
7837 Shanghai
7210 Haleakala
7328 Koganei
7403 Arequipa
7805 Metsahovi
7806 Metsahovi
- **state vectors**
- **constant along-track accel.**
- **once-per-rev along-track accel.**
- **once-per-rev cross-track accel.**

A priori values

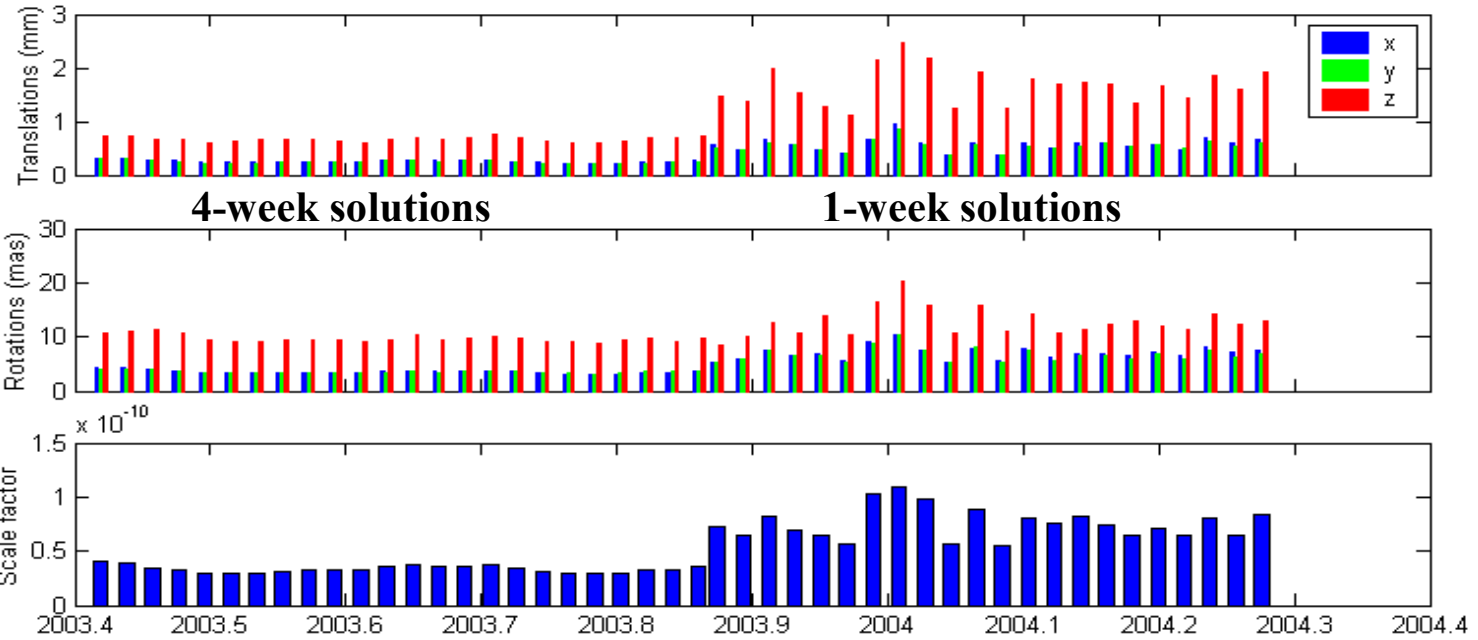
- **ITRF2000 for coordinates propagated at the midpoint of the arc time span**
- **EOPC04 and bulletin A**
- **biases: 0**
- **const. along-track acc: L1 -0.3060 10⁻¹¹
L2 -0.2569 10⁻¹¹
E1-E2 0**
- **once-per-rev cross-track acc: 0**
- **once-per-rev radial-track acc: 0**

Submitted solutions: arc overview

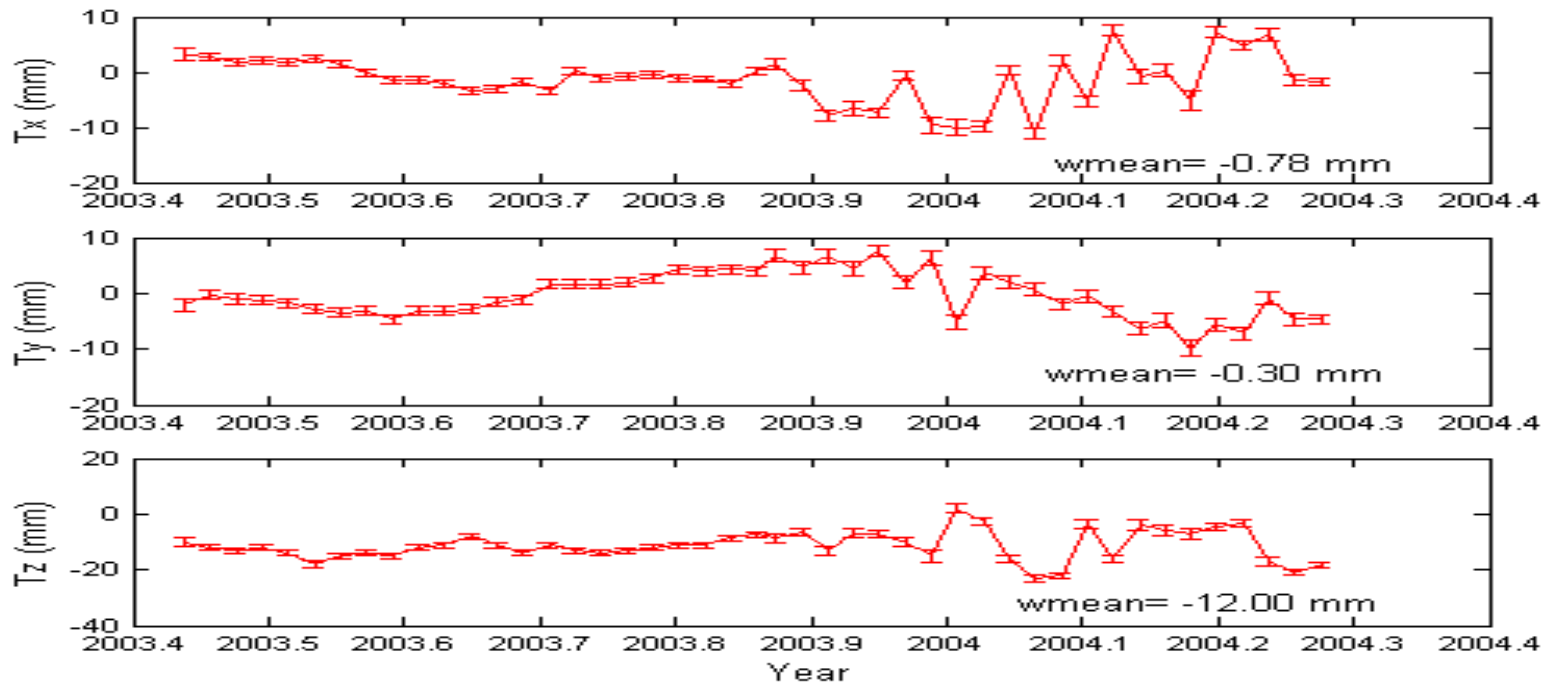


Submitted solutions: Helmert parameters w.r.t. ITRF2000

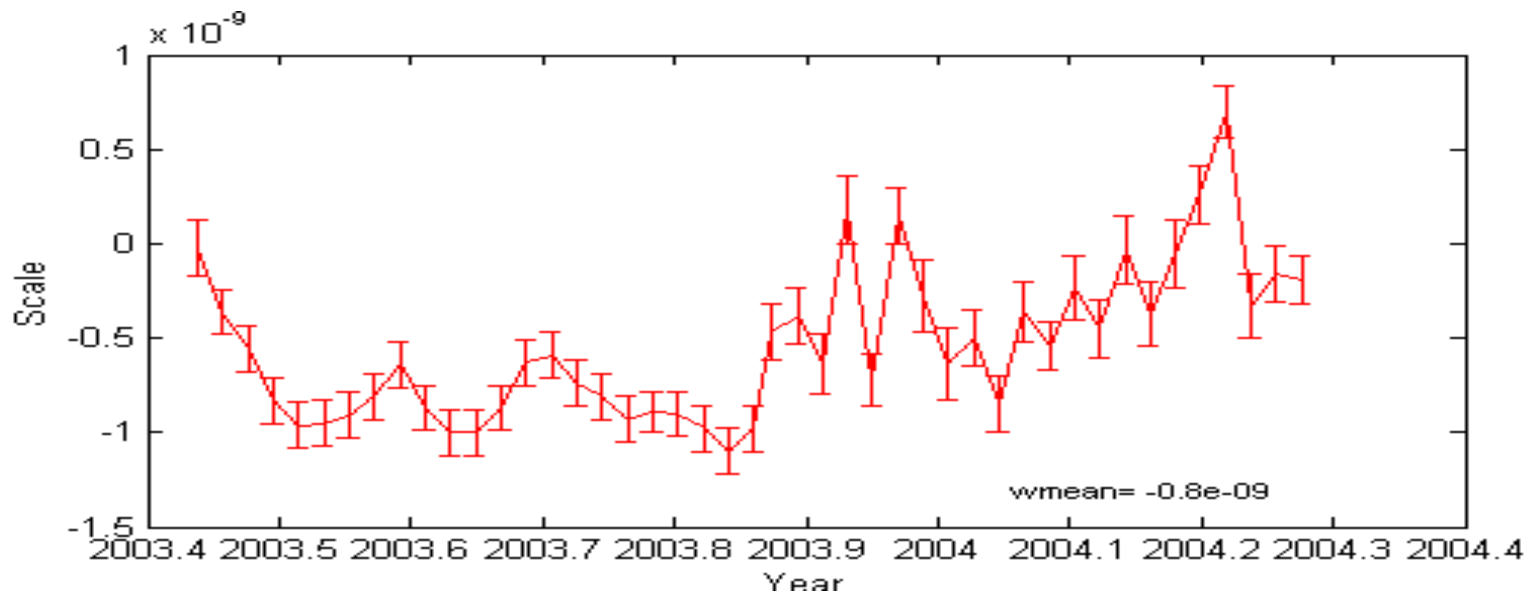
looseness



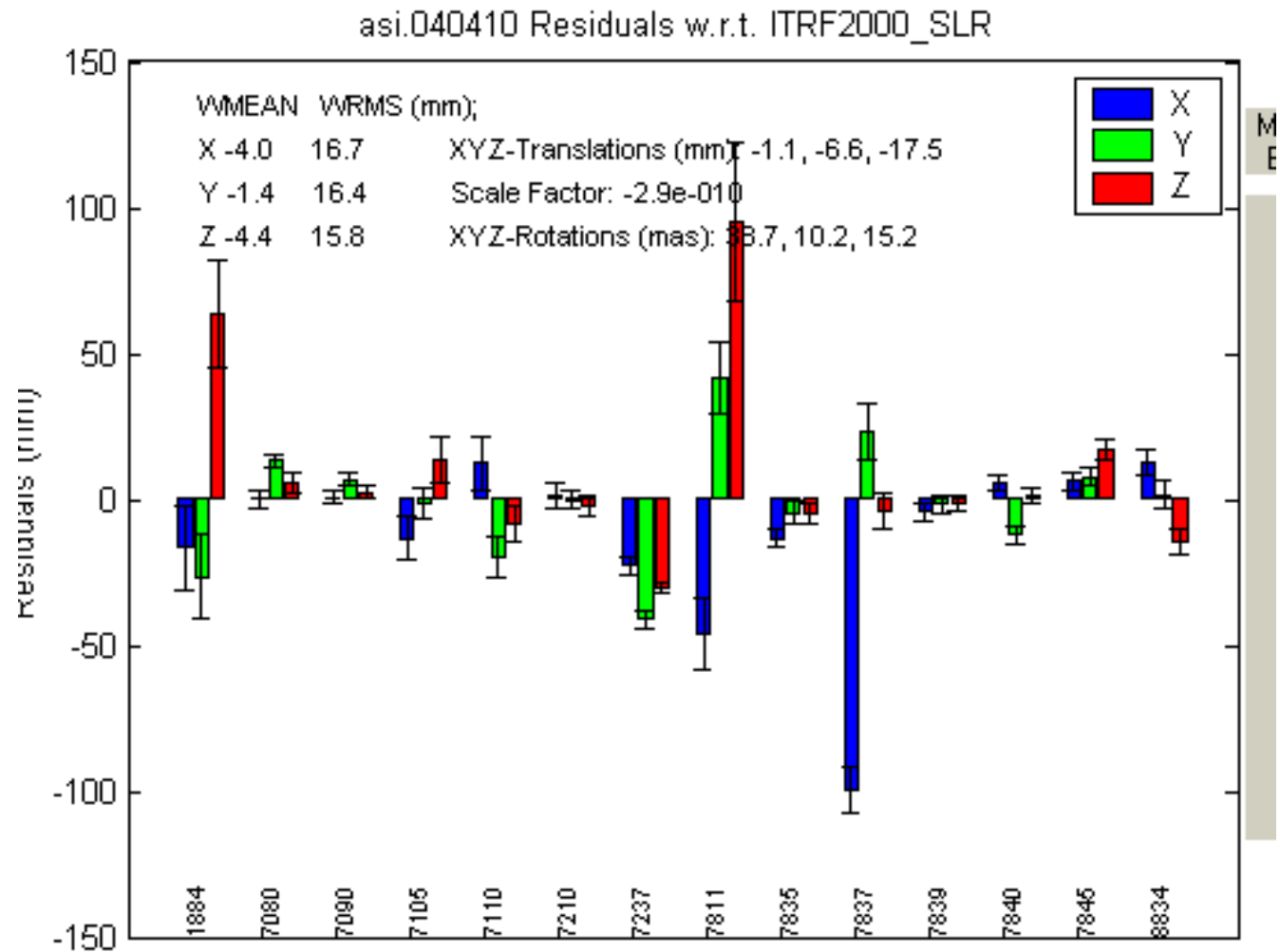
translations



Submitted solutions: Helmert parameters w.r.t. ITRF2000

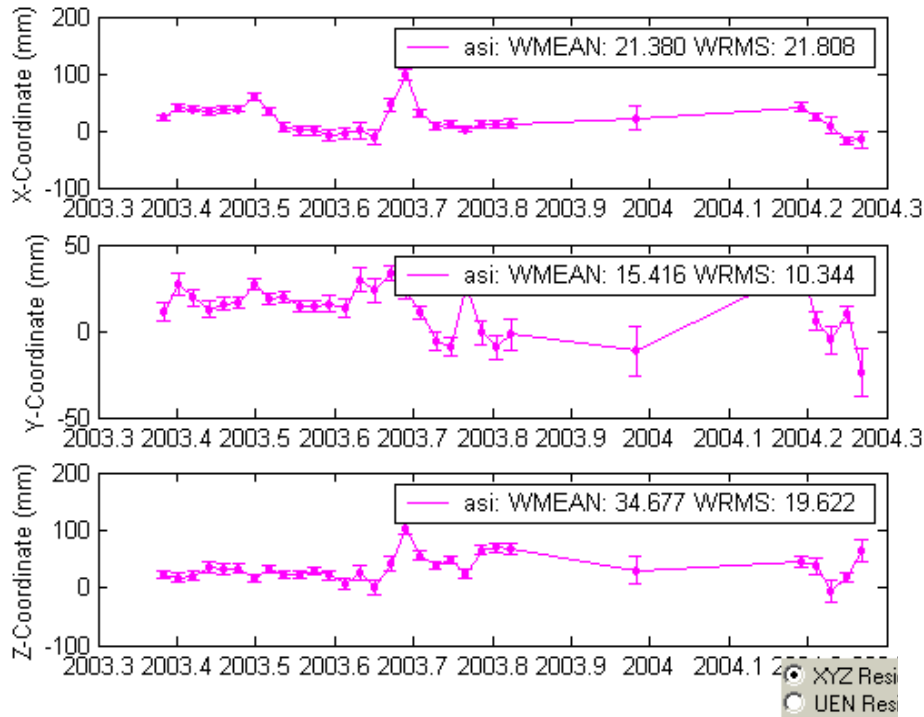


Submitted solutions: site coordinates

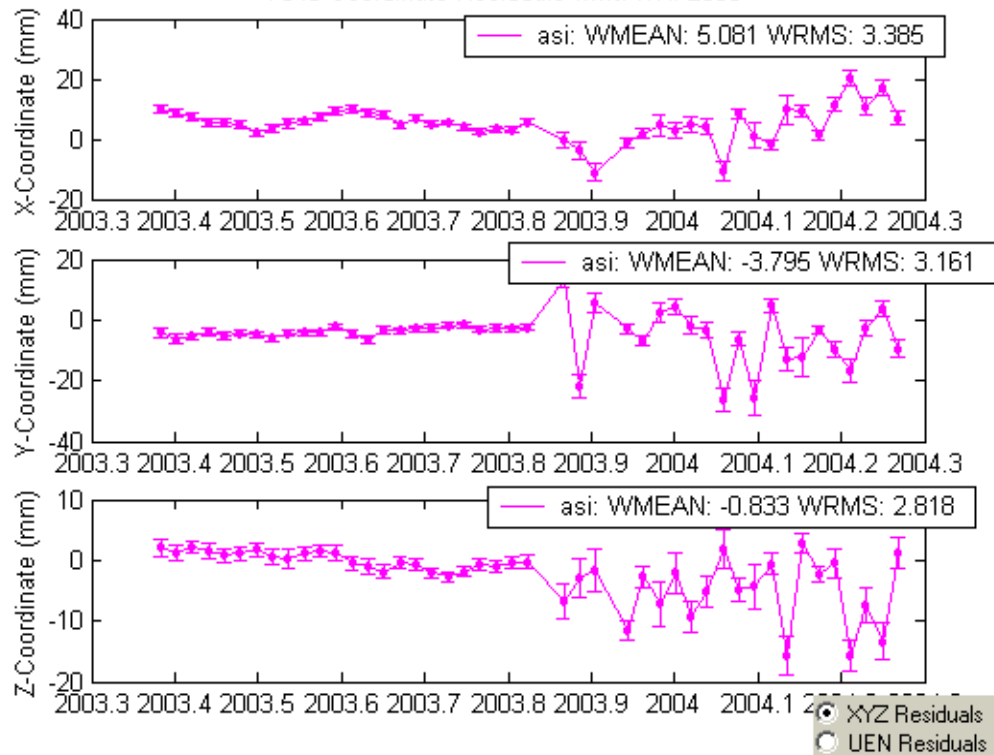


Submitted solutions: site coordinates

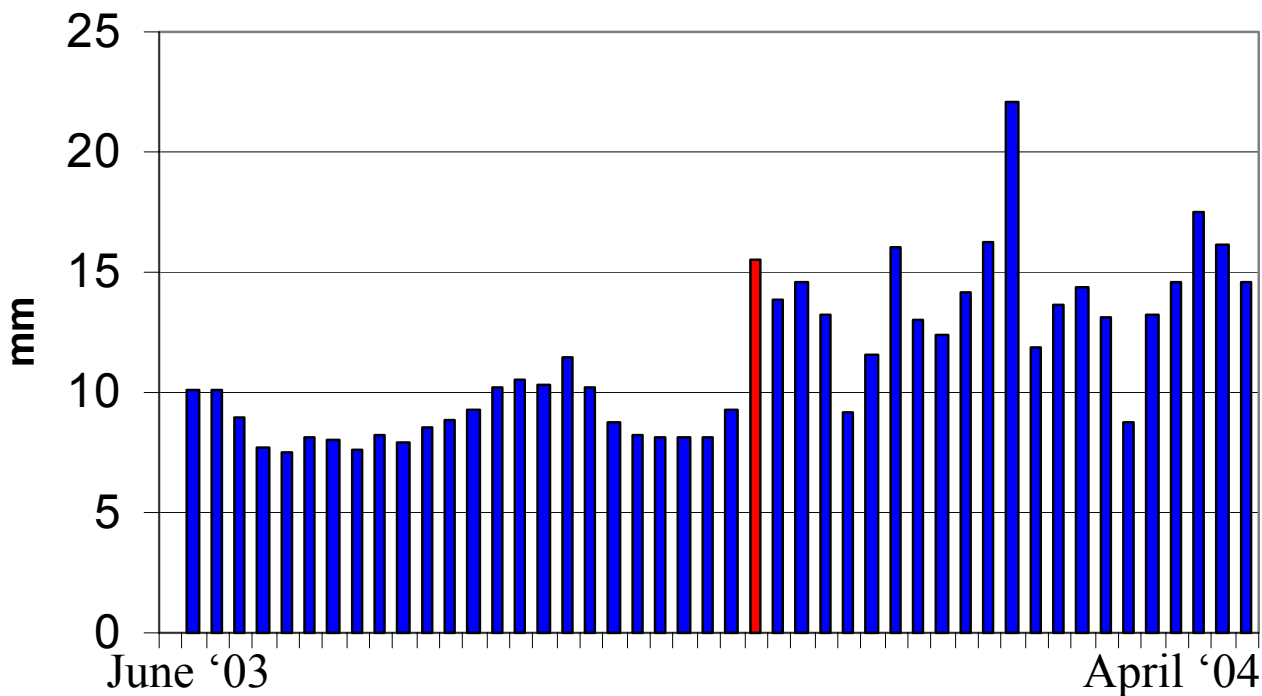
1884 Coordinate Residuals w.r.t. ITRF2000



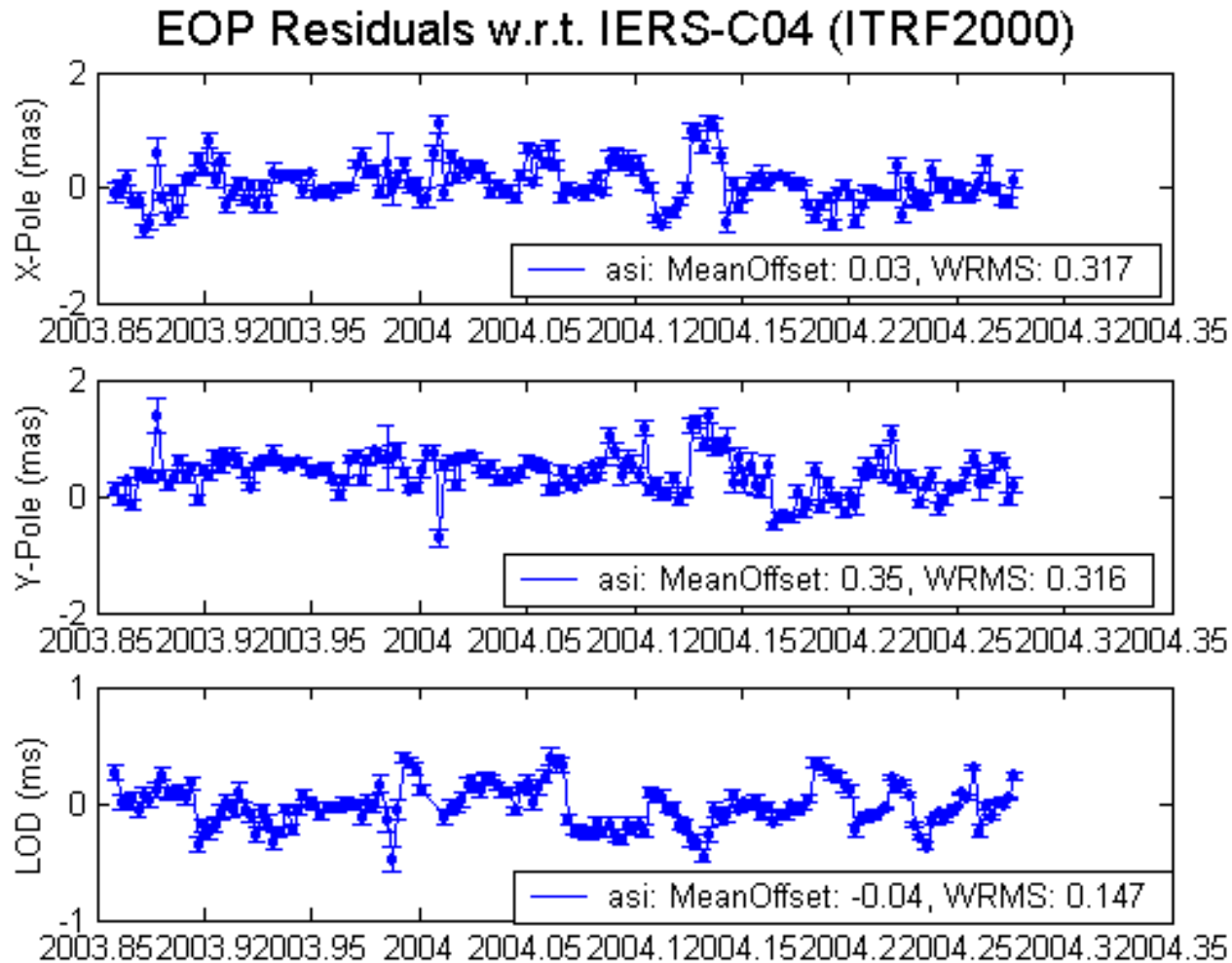
7840 Coordinate Residuals w.r.t. ITRF2000



ASI solutions 3-D WRMS

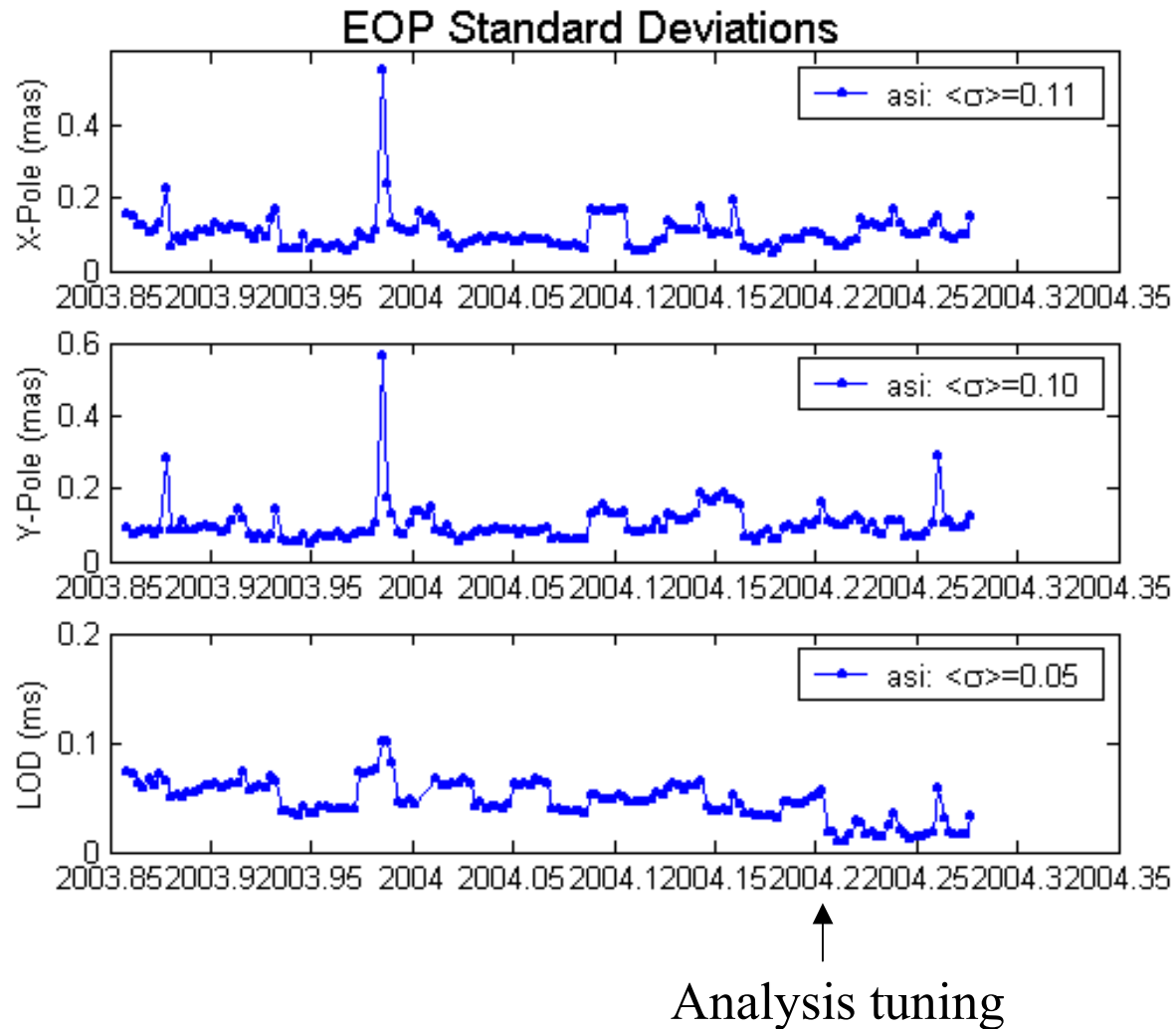


Submitted solutions: EOP and LOD

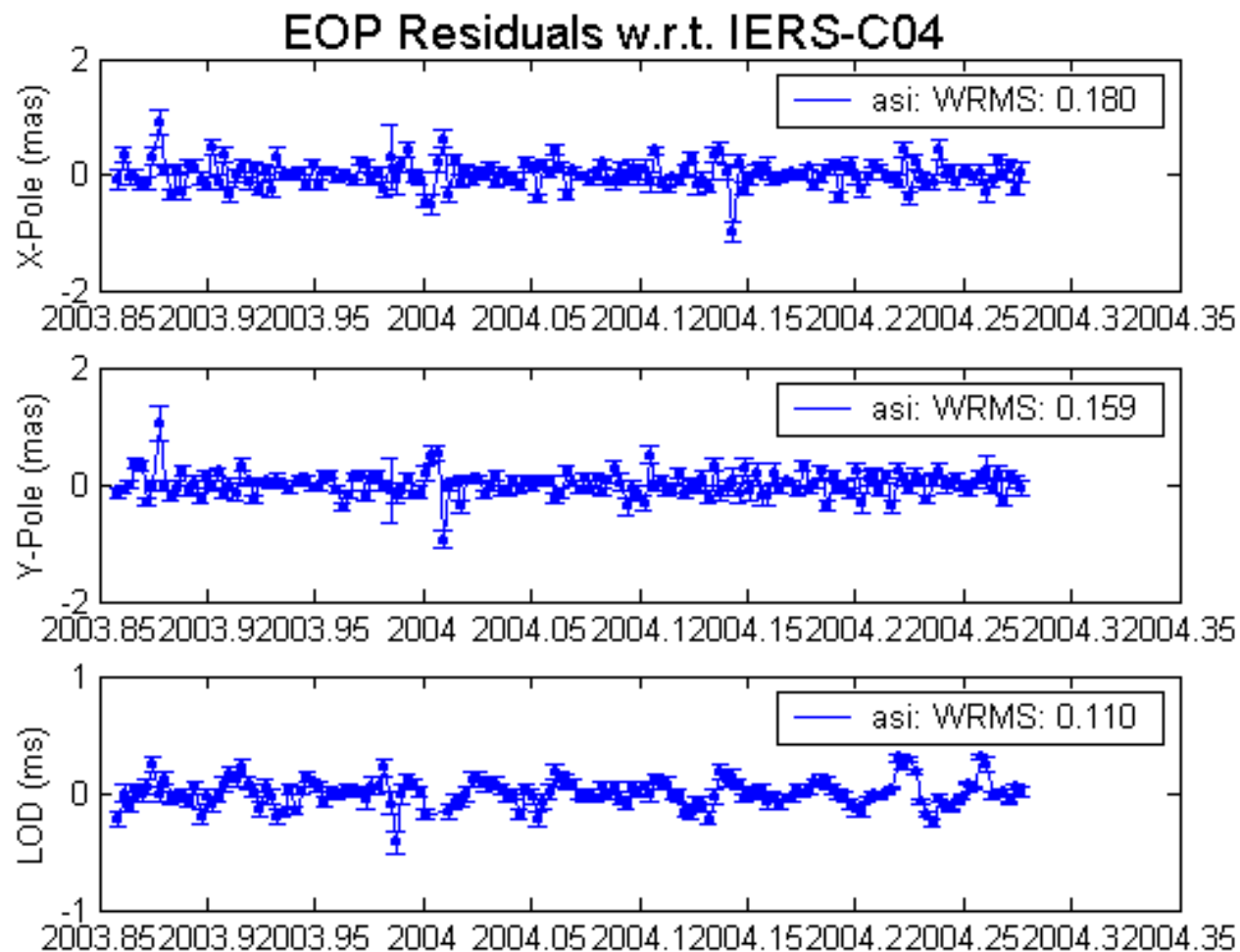


↑
Etalon added

Submitted solutions: EOP and LOD

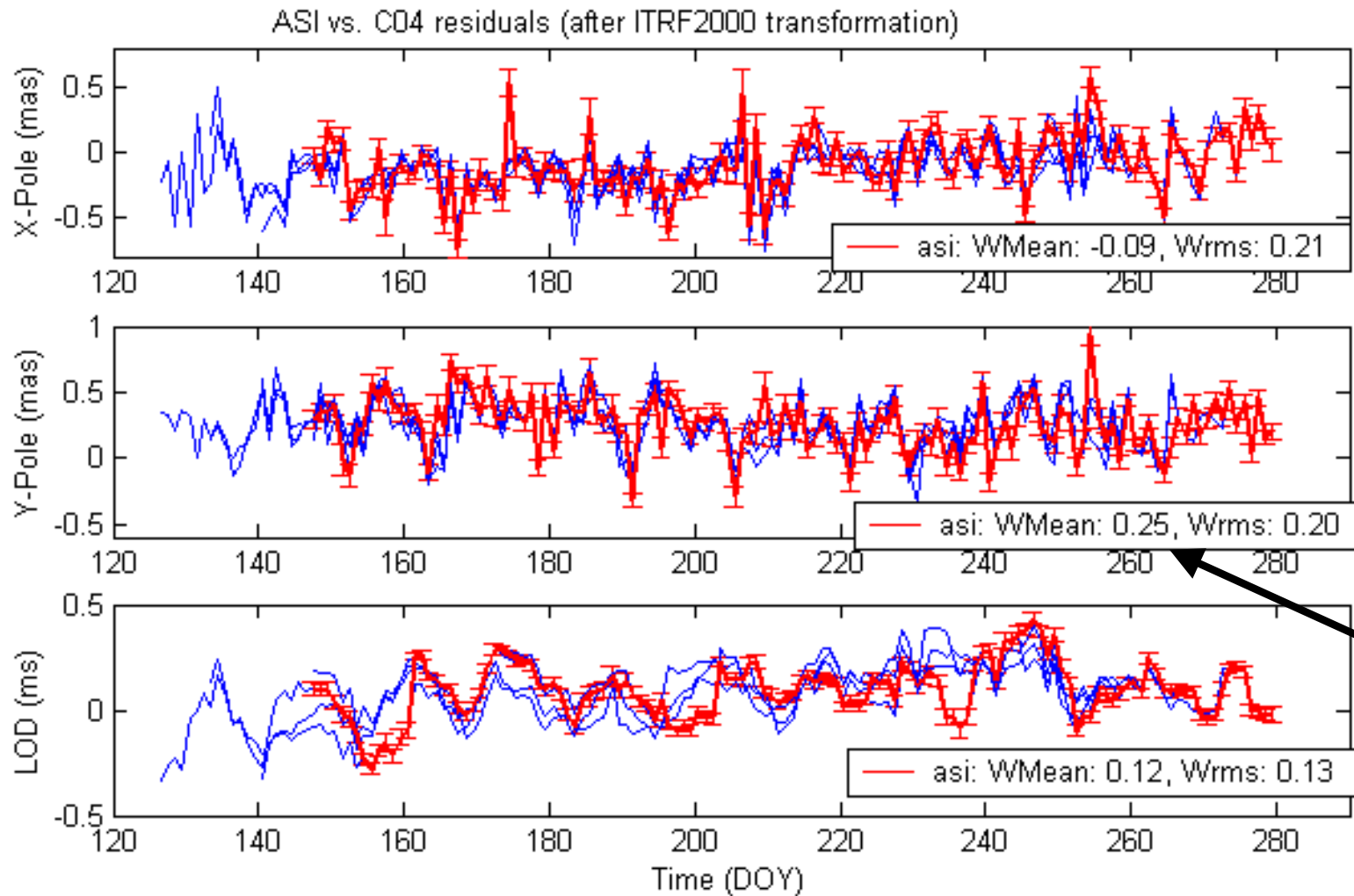


Submitted solutions: EOP and LOD



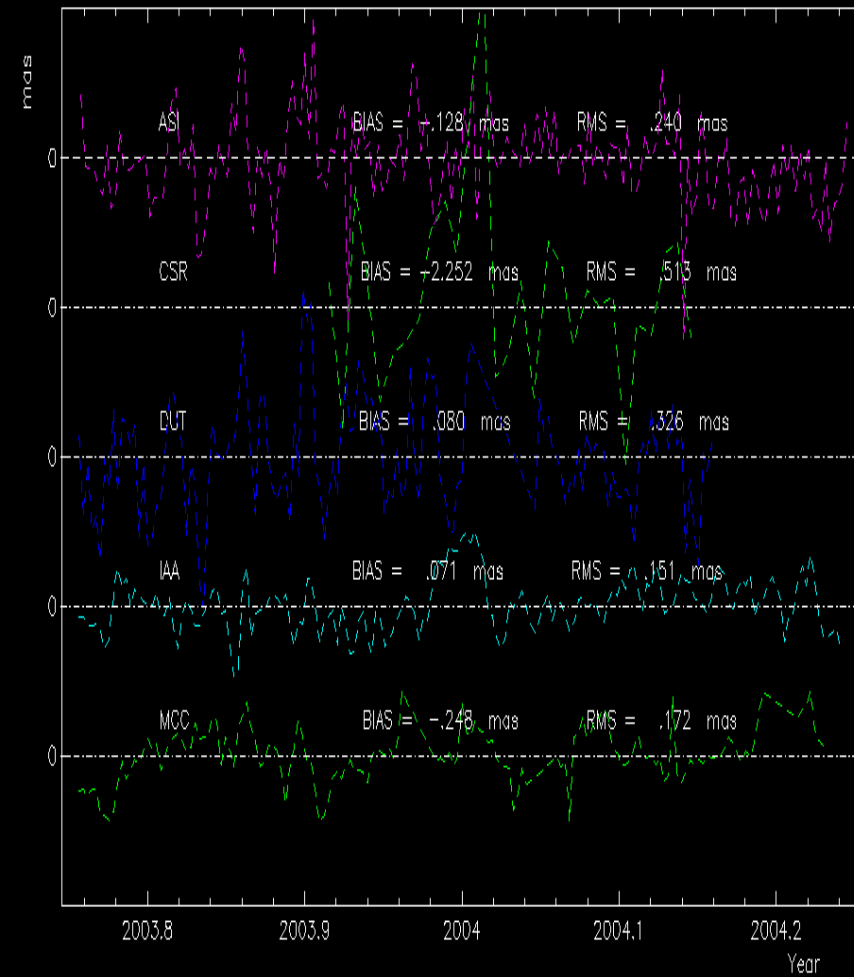
Submitted solutions: EOP and LOD

(4-week arcs)

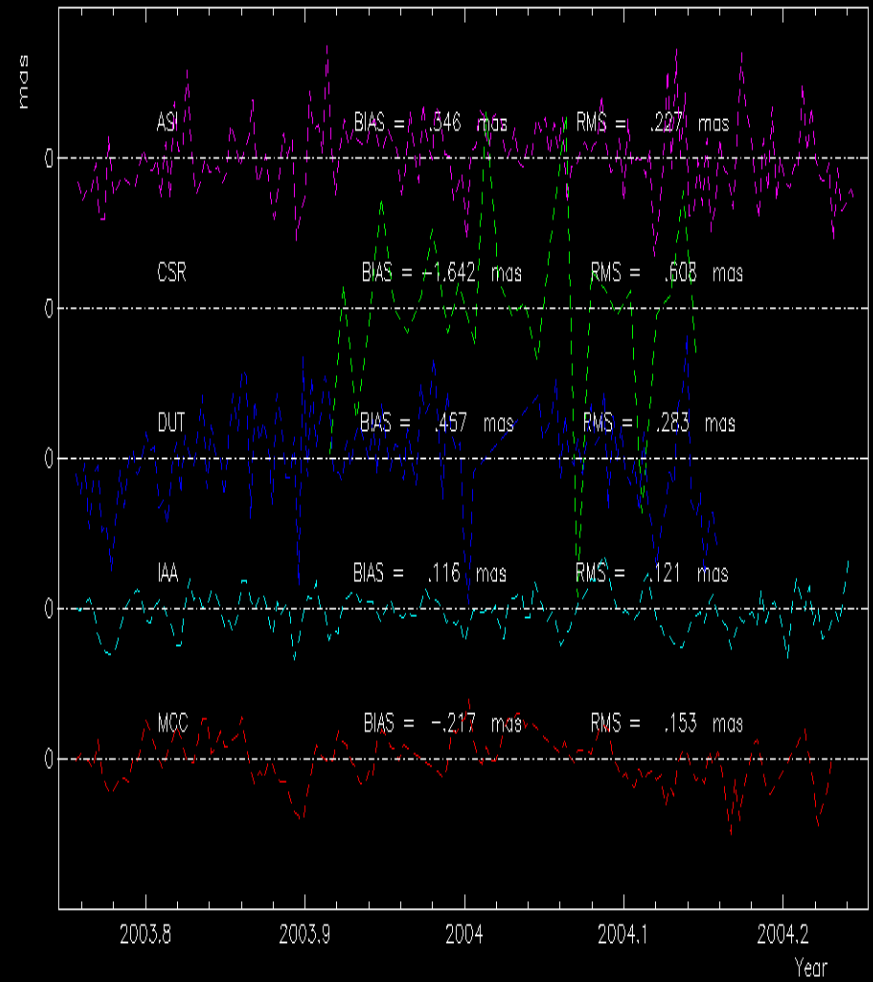


IERS operational series

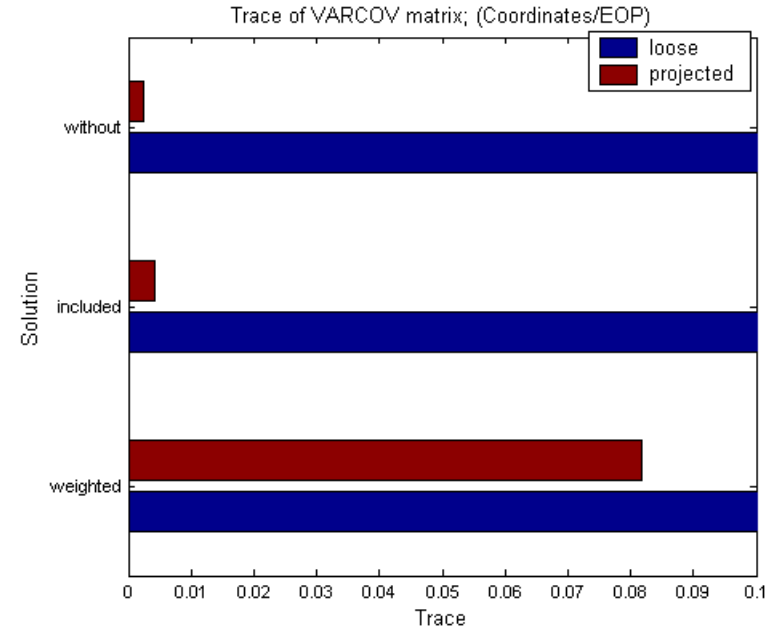
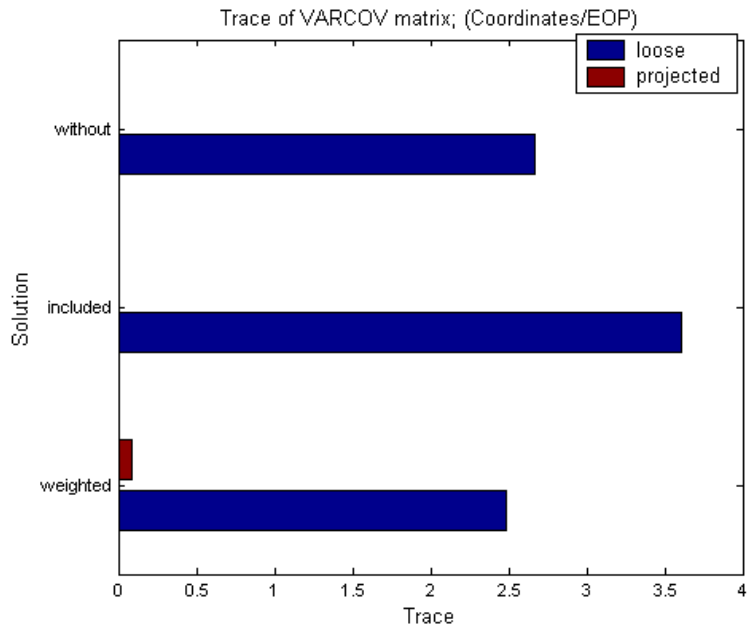
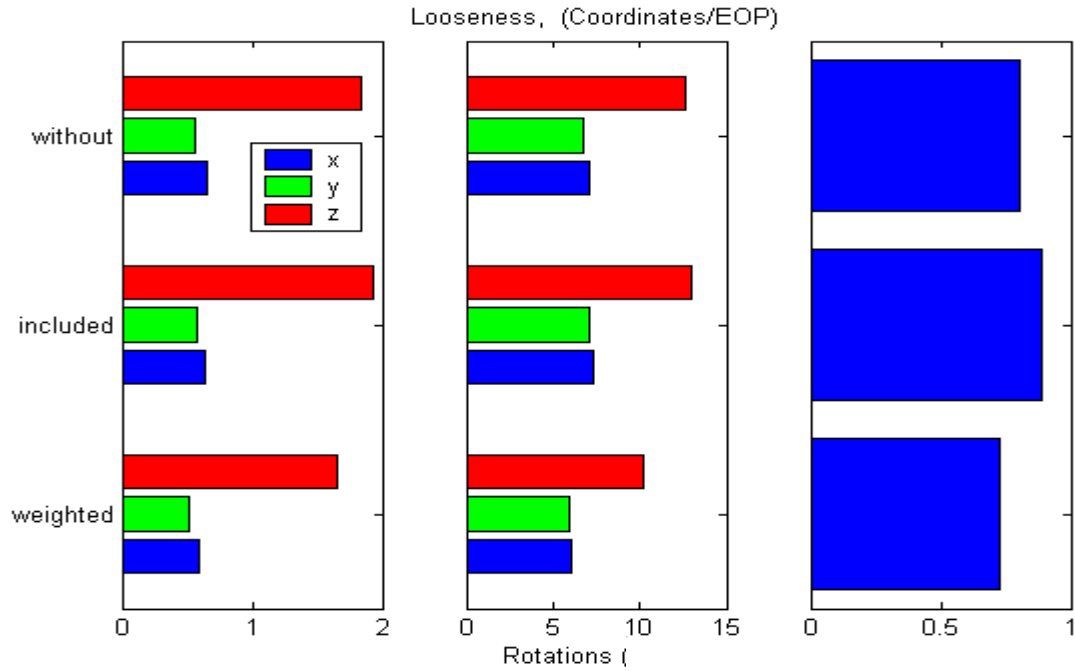
X-Pole : ASI, CSR, DUT, IAA and MCC - (IERS) C04, UNIT = 1 mas



Y-Pole : ASI, CSR, DUT, IAA and MCC - (IERS) C04, UNIT = 1 mas

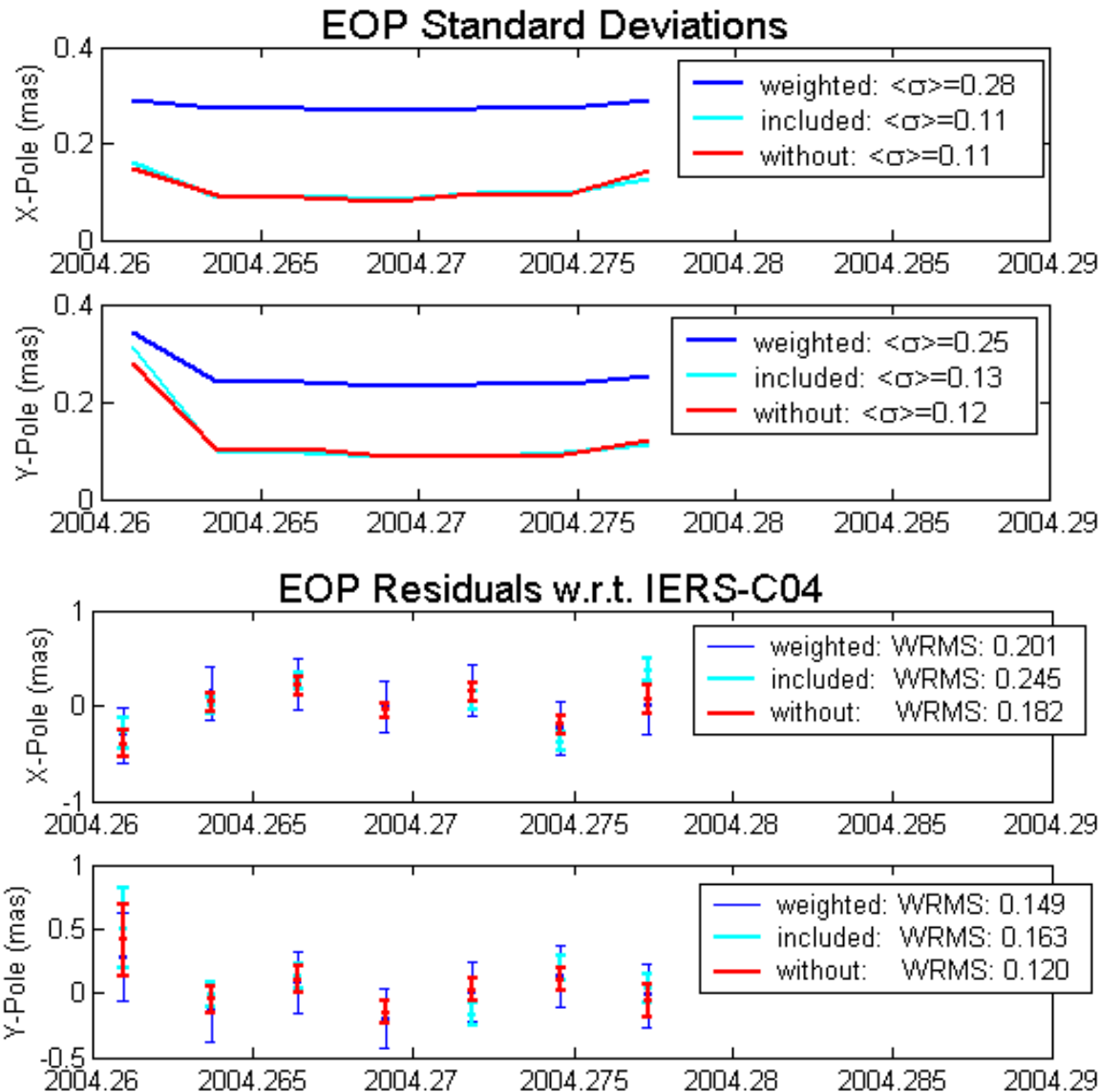


DOWNWEIGHTING: LOOSENESS

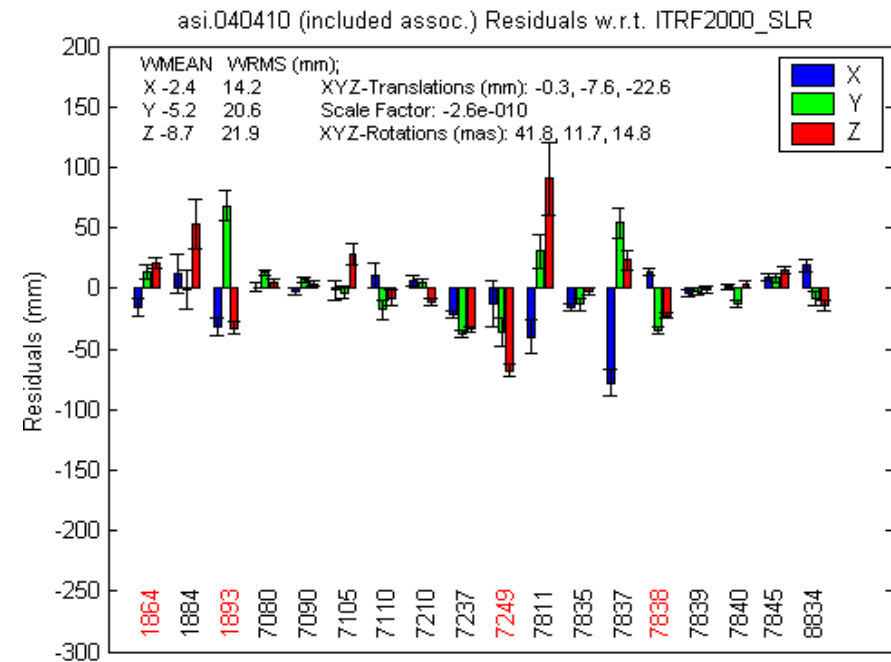
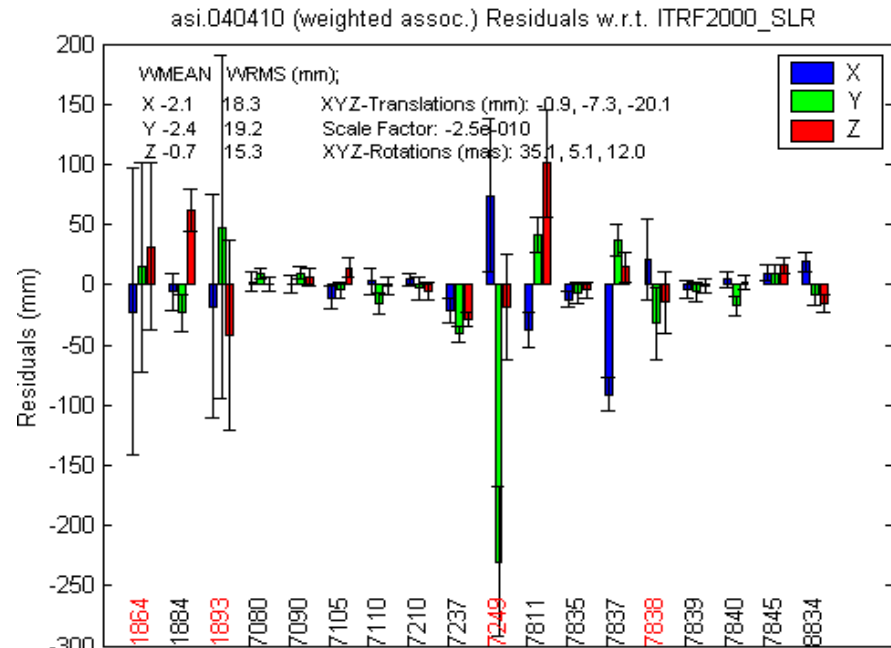
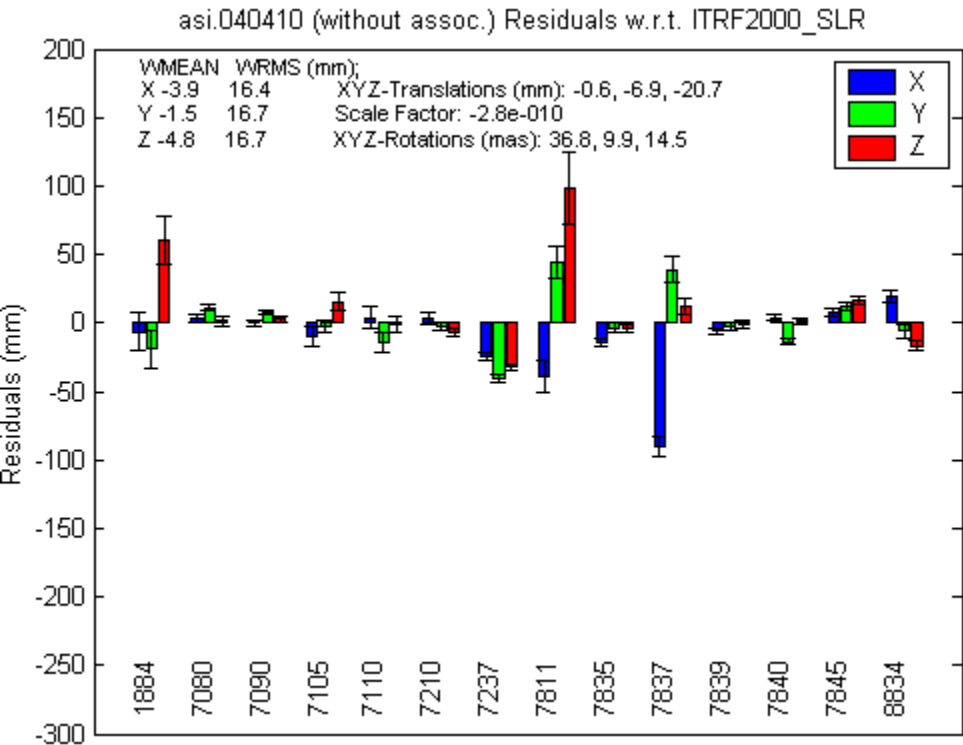


DOWNWEIGHTING: EOP

No influence on LOD

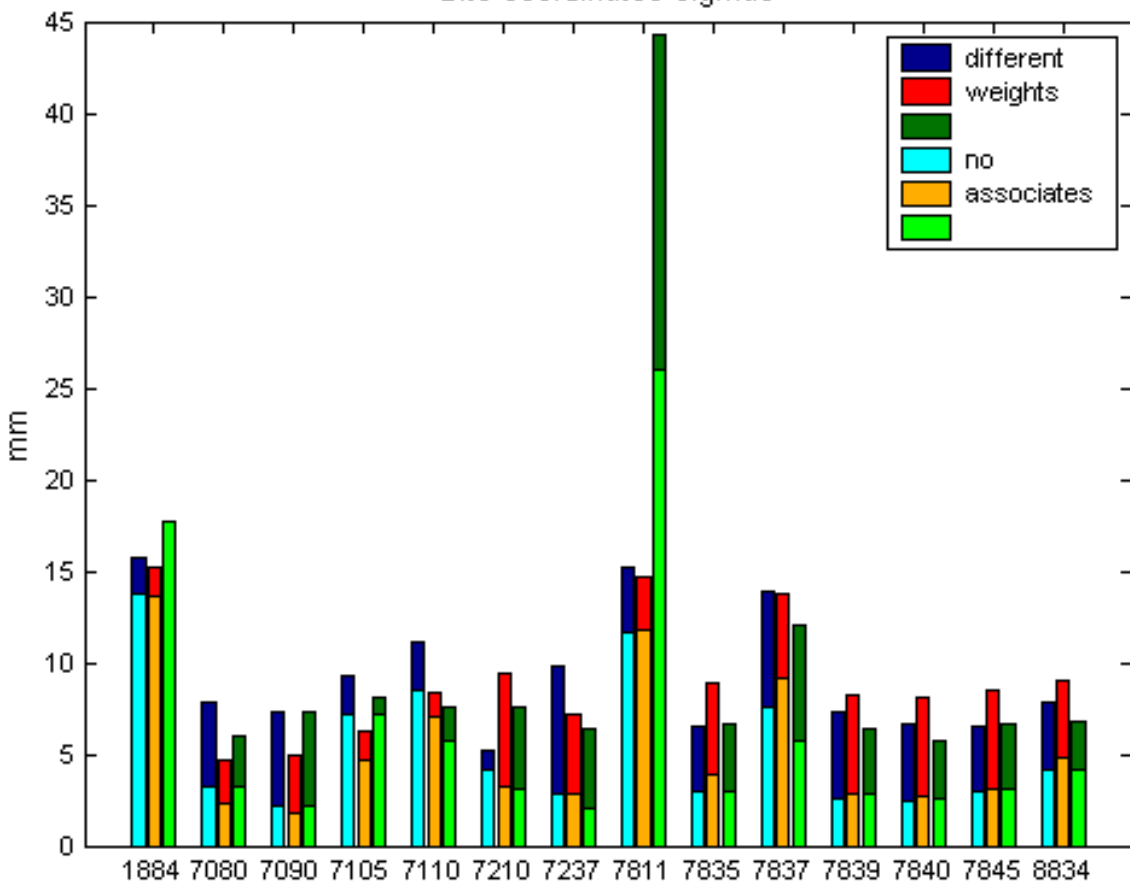


DOWNWEIGHTING: SITE RESIDUALS

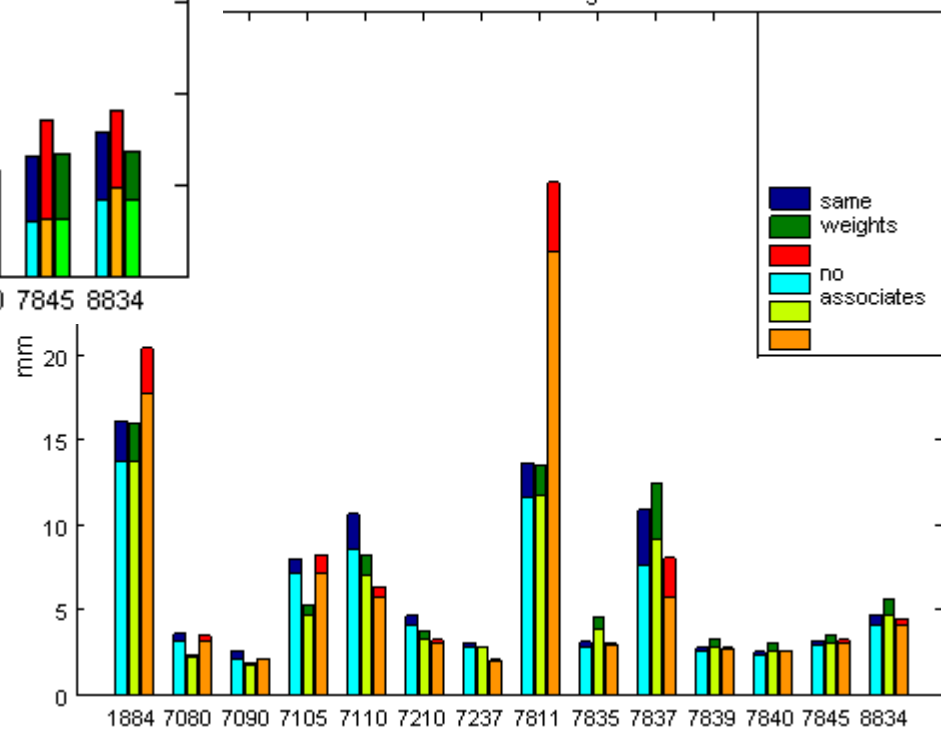


DOWNWEIGHTING: PARAMETER SIGMAS

Site coordinates sigmas

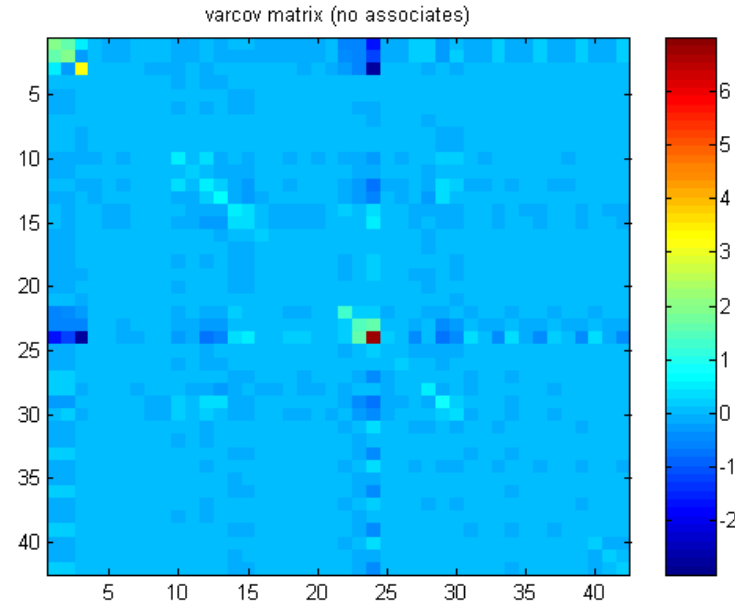


Site coordinates sigmas

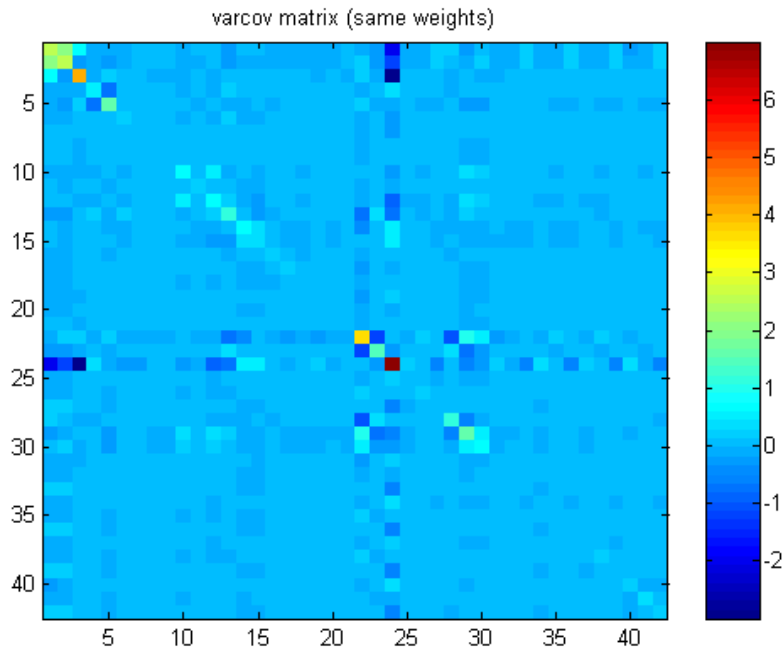


DOWNWEIGHTING: VAR/COV MATRICES

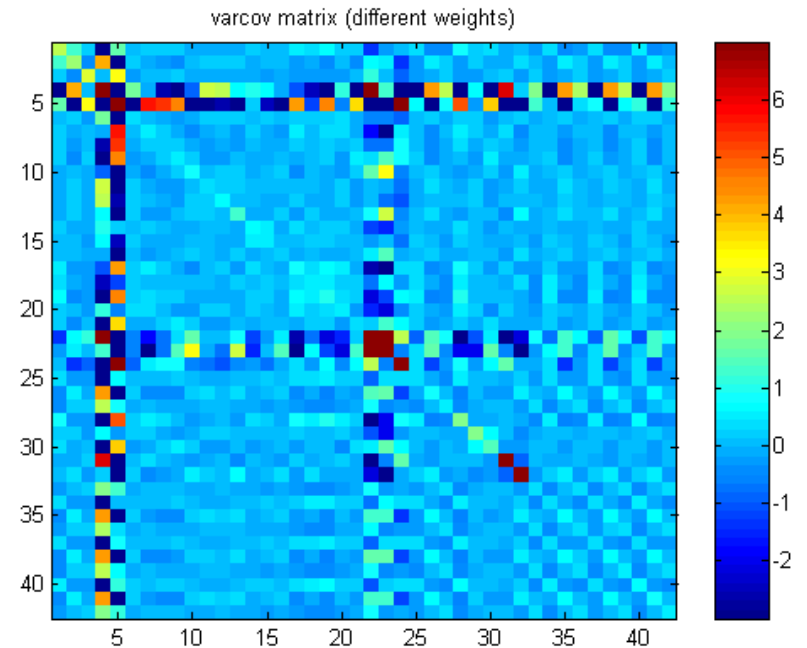
without associates



including associates
(same weights)

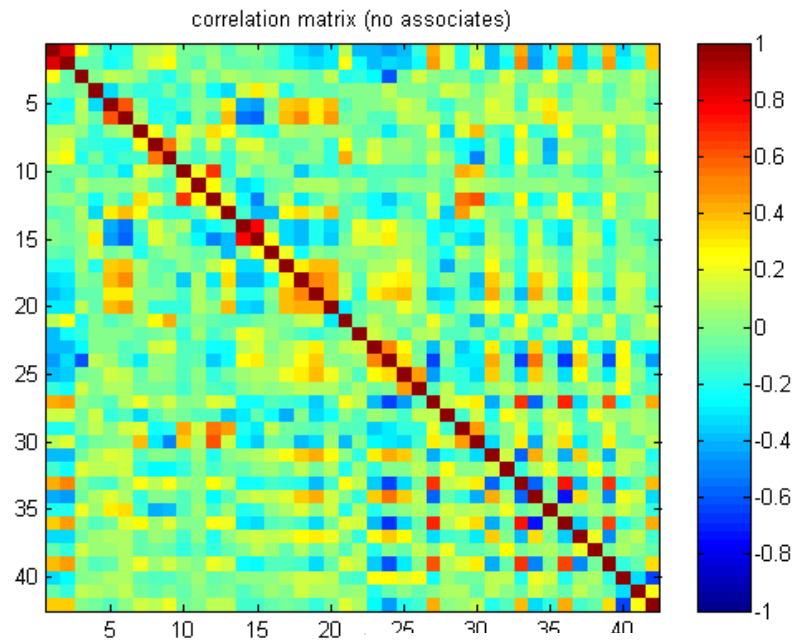


including associates
(downweight)

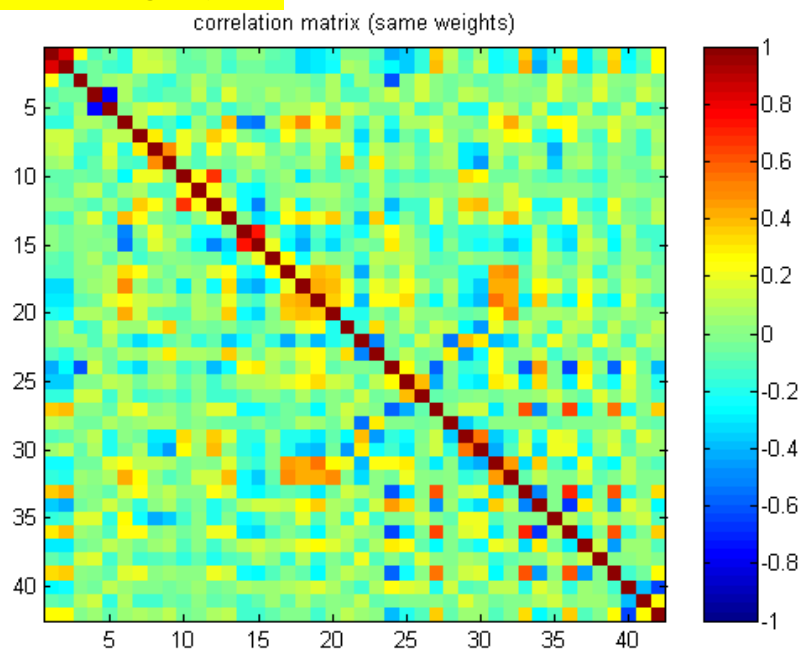


DOWNWEIGHTING: CORRELATION MATRICES

without associates



including associates
(same weights)



including associates
(downweight)

