SLR and ITRF2013, atmospheric effects

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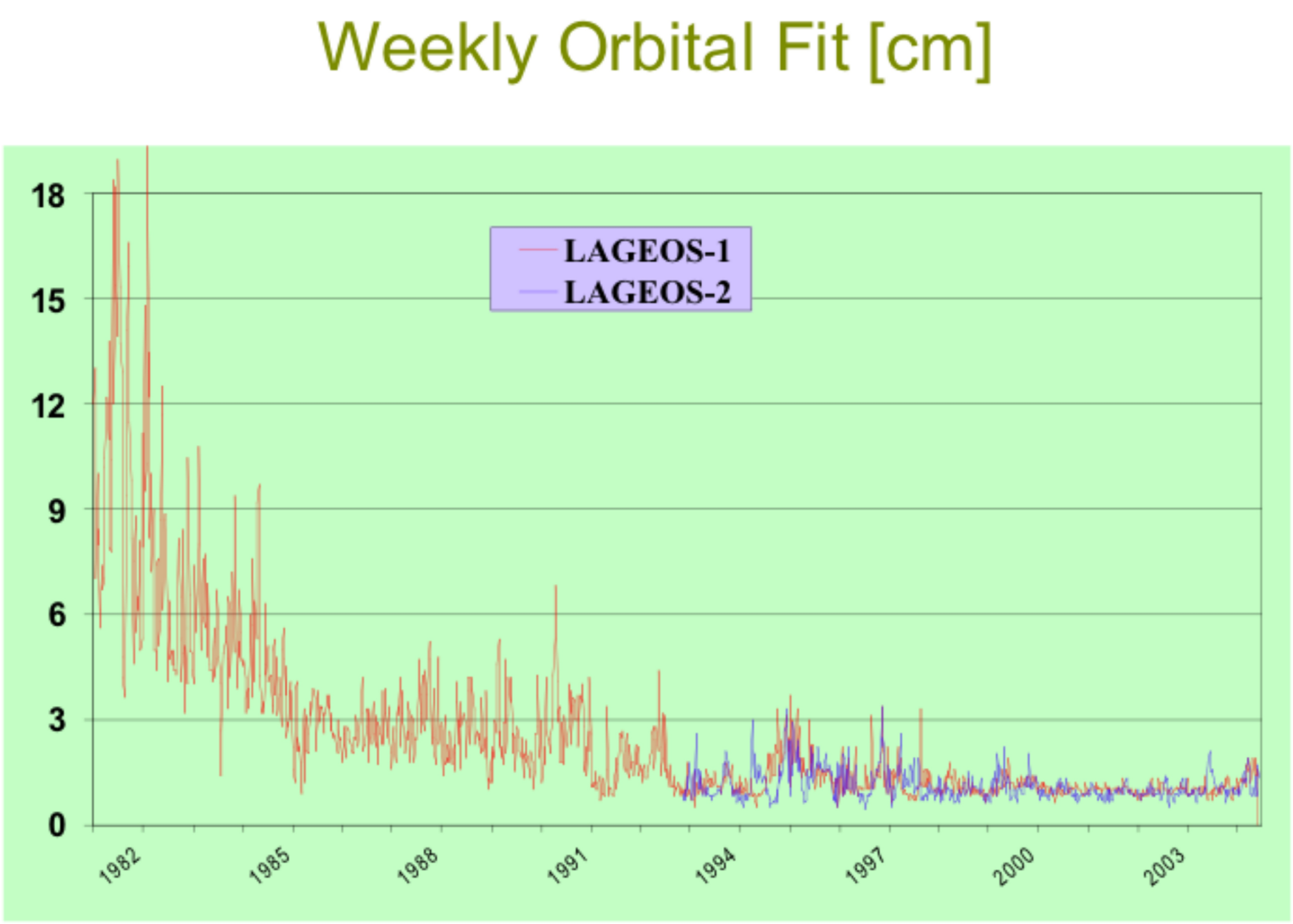
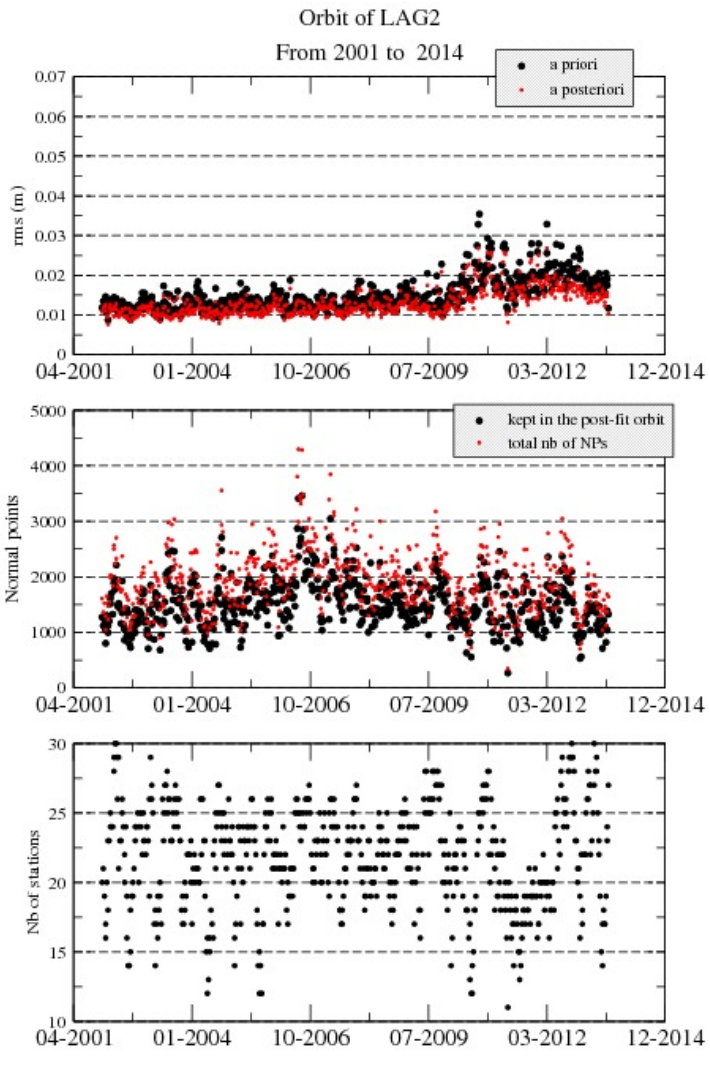
ITRFxxxx: From a meter to a millimeter accuracy



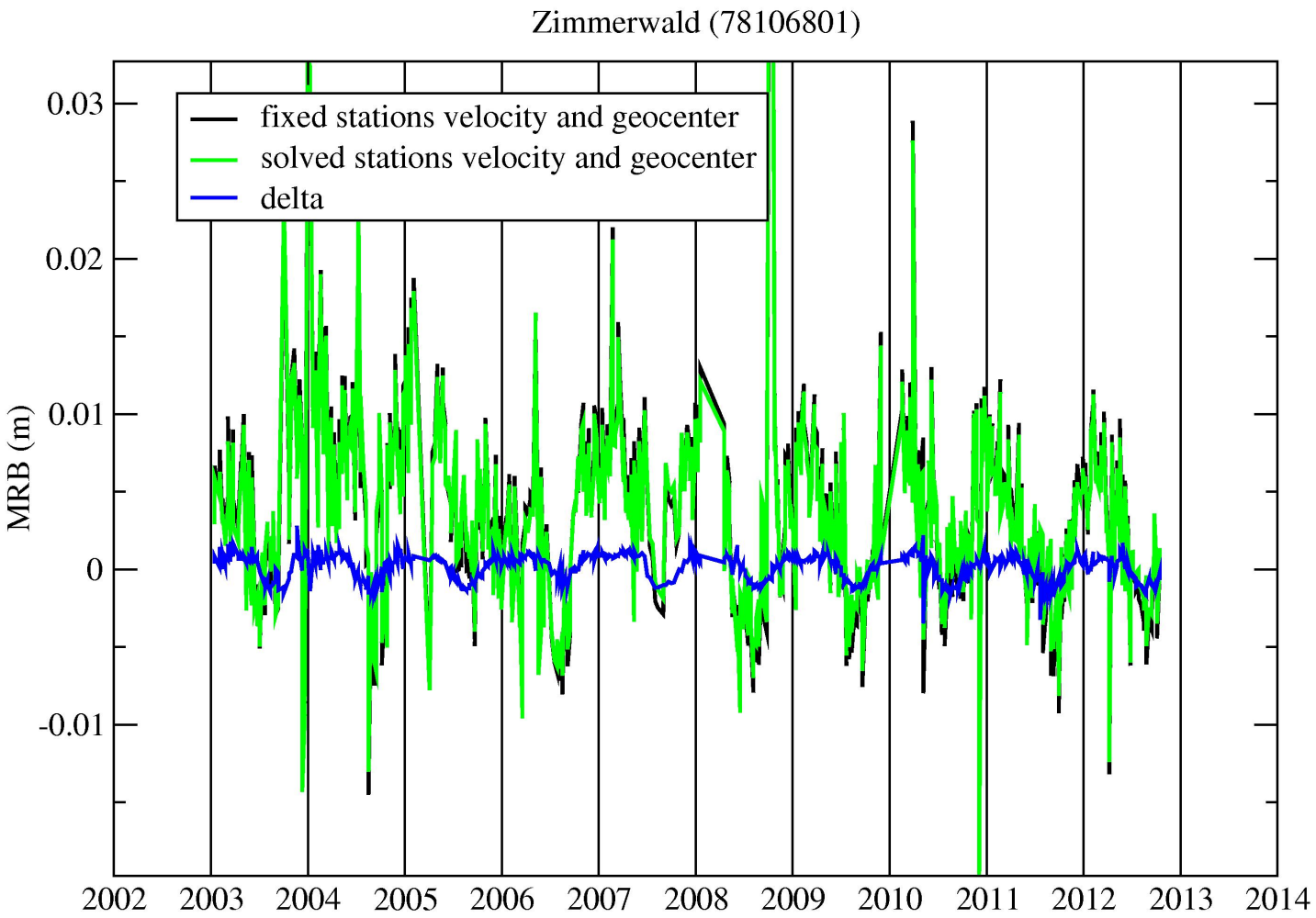
(Saunders,2004)

Over the last few years

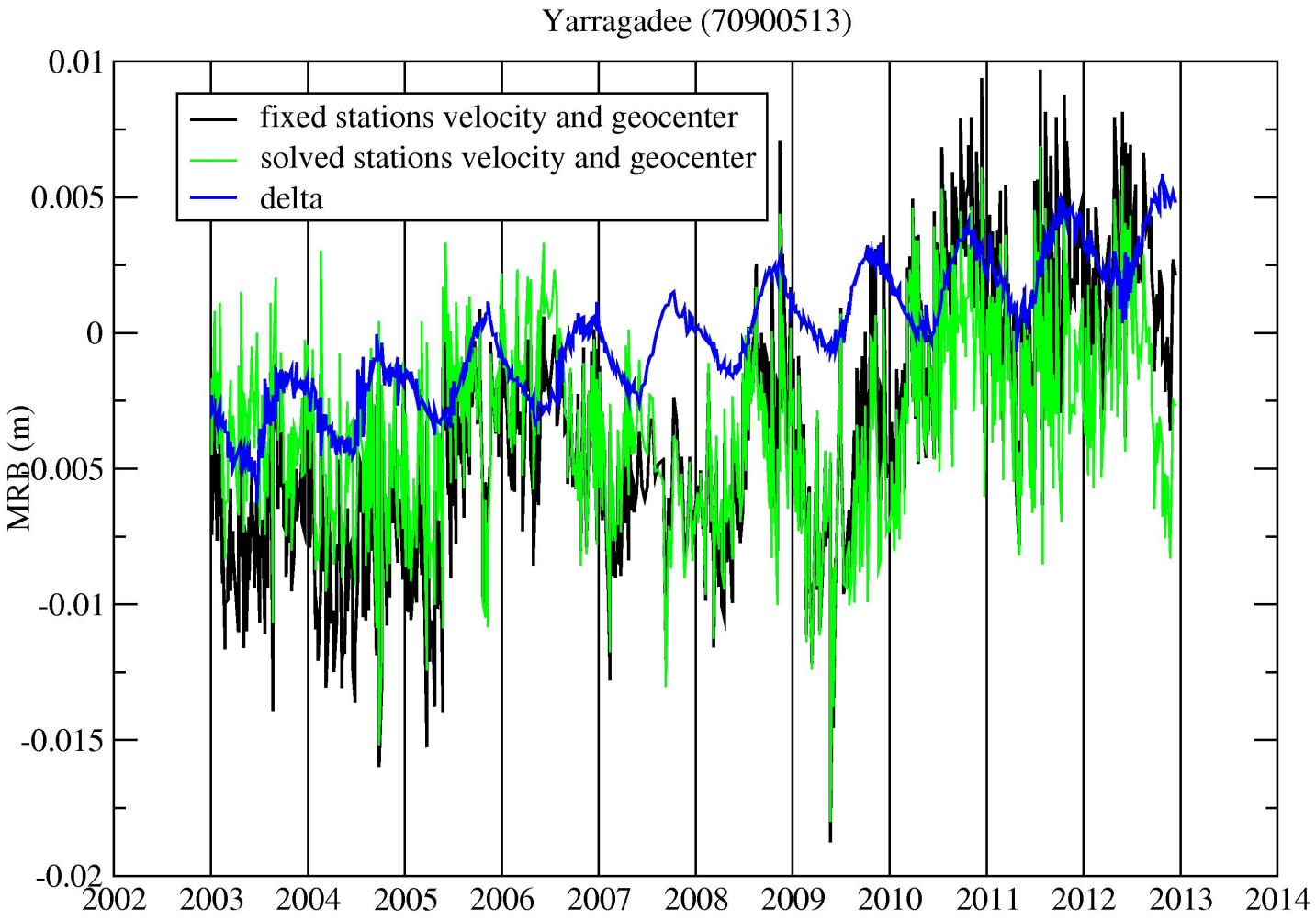


- Outline: as an analysis prior to ITRF2013
  - Methodological strategies
    - Bias or not bias estimation
    - *a priori*/*a posteriori* station coordinates / velocities
    - Other parameters (geocenter...)
  - Some features in SLRF2008
    - earthquakes
    - degradation with time of ITRF2008
    - station technological evolution

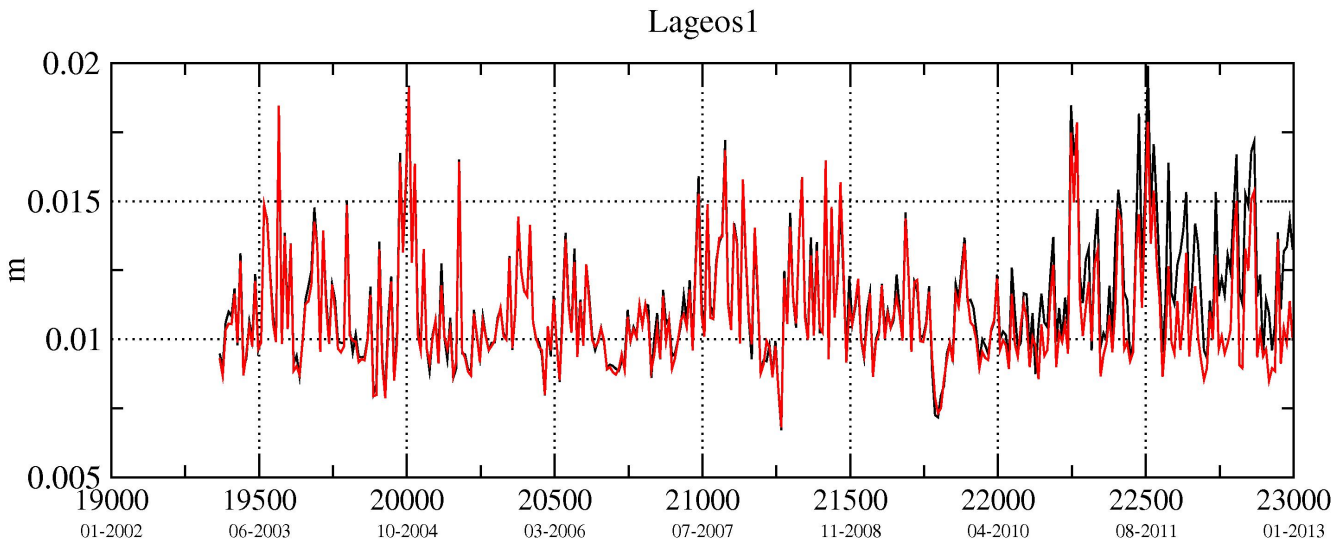
Case: Zimmerwald station

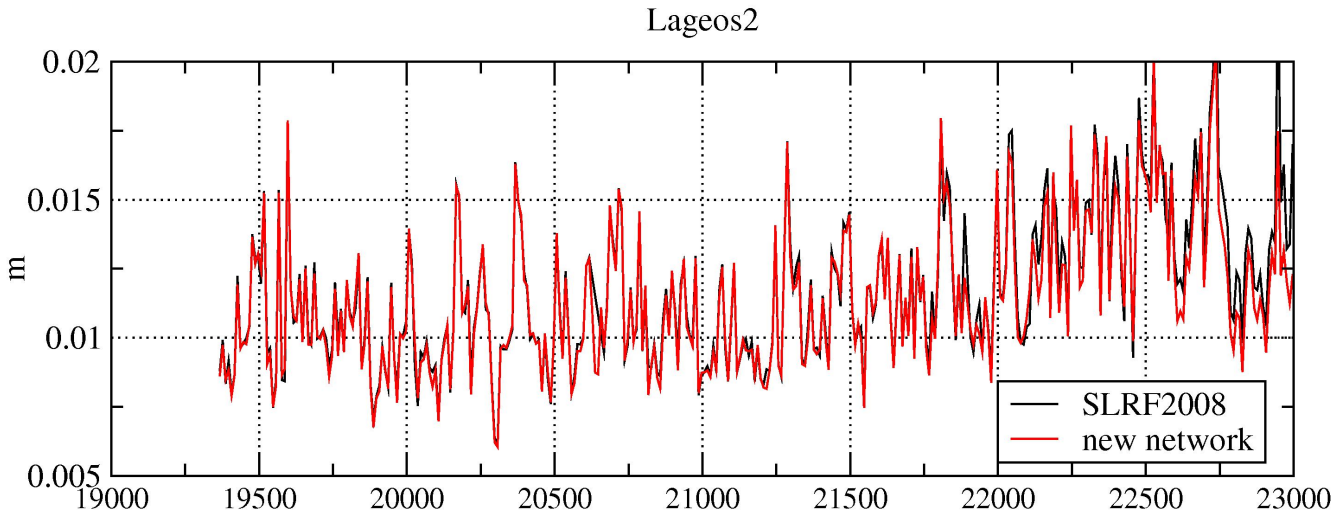


Case: Yarragadee station

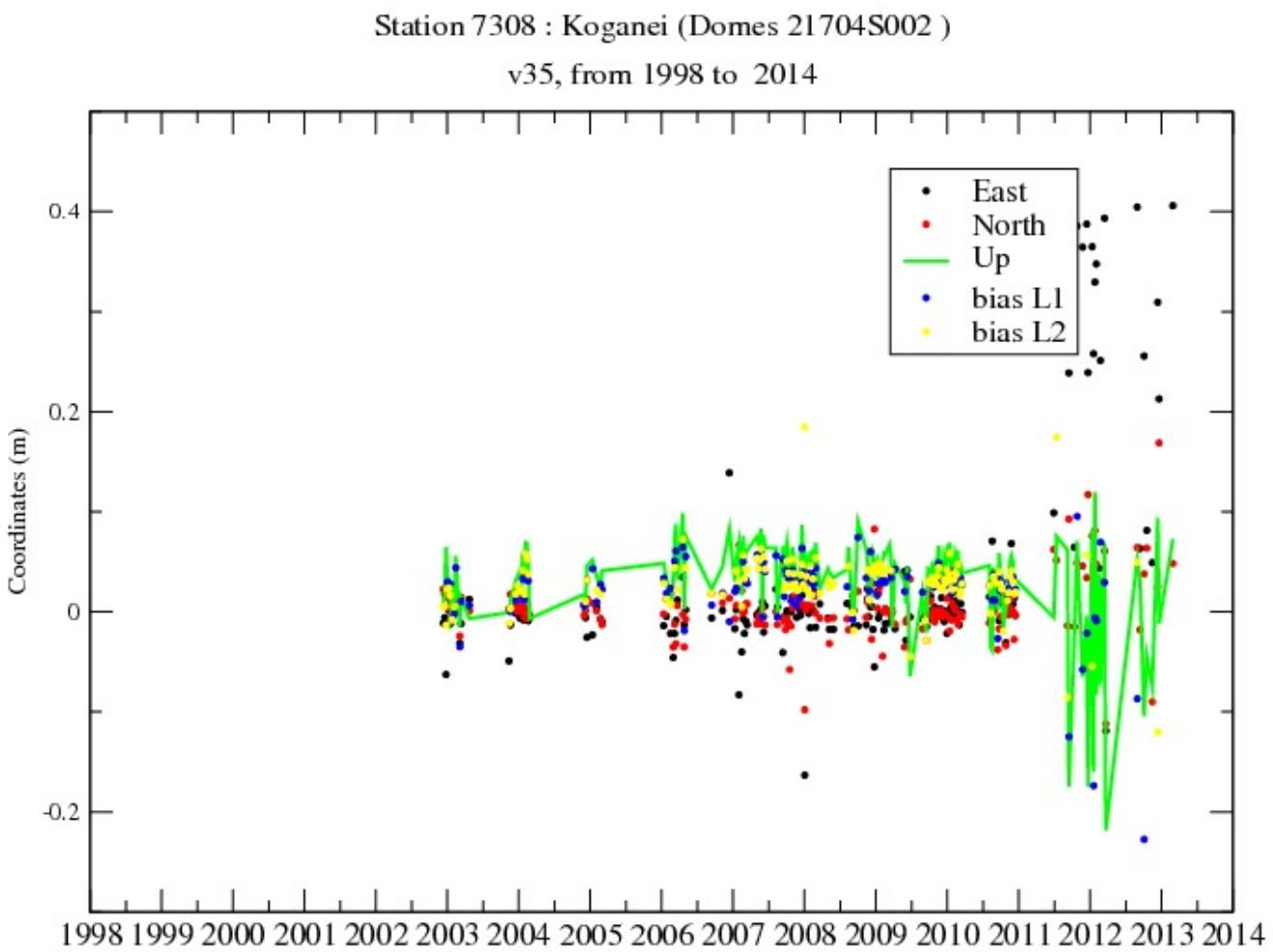


After new estimation of the station coordinates

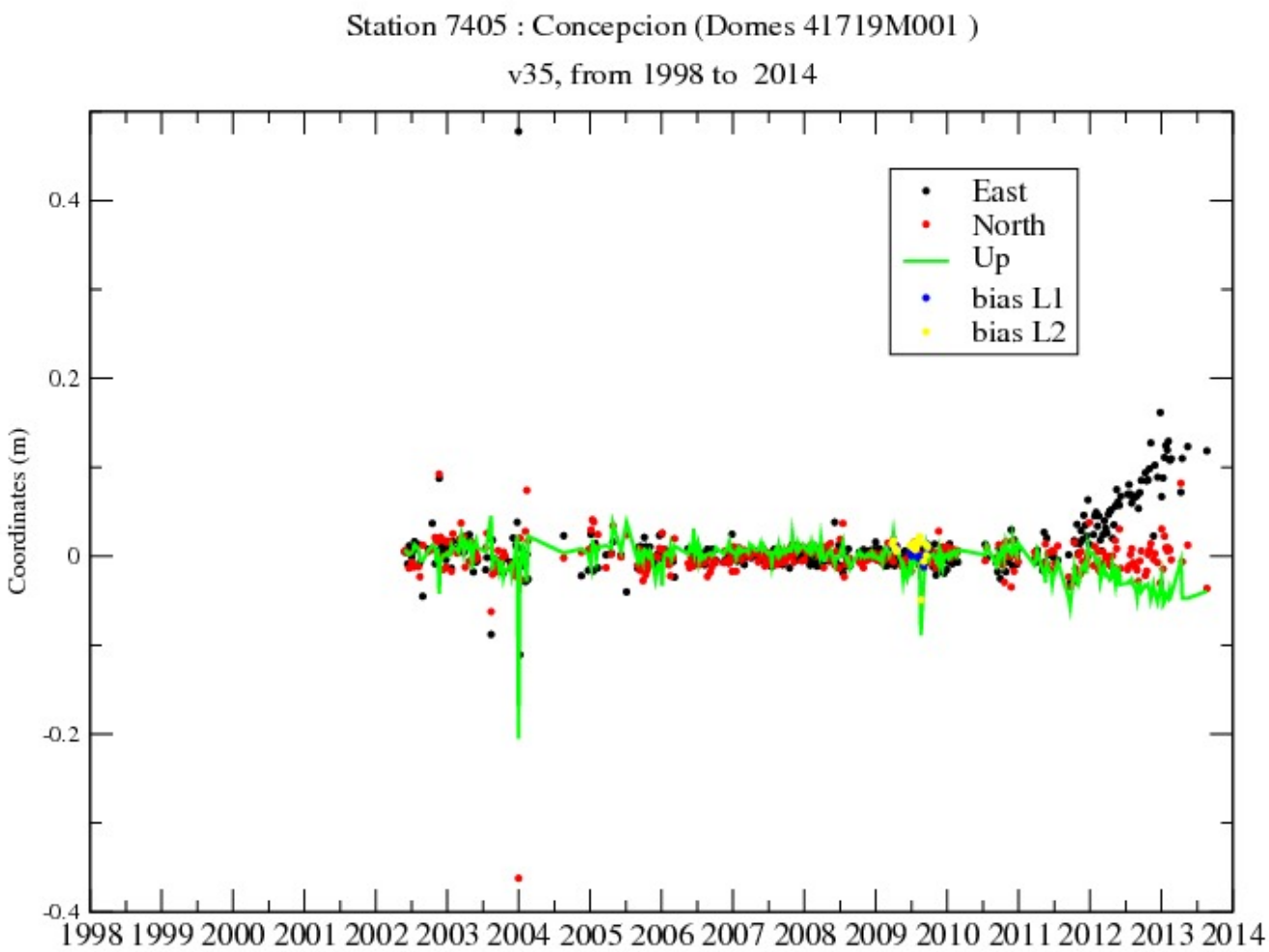




ITRF2008, effect on an earthquake: Koganei



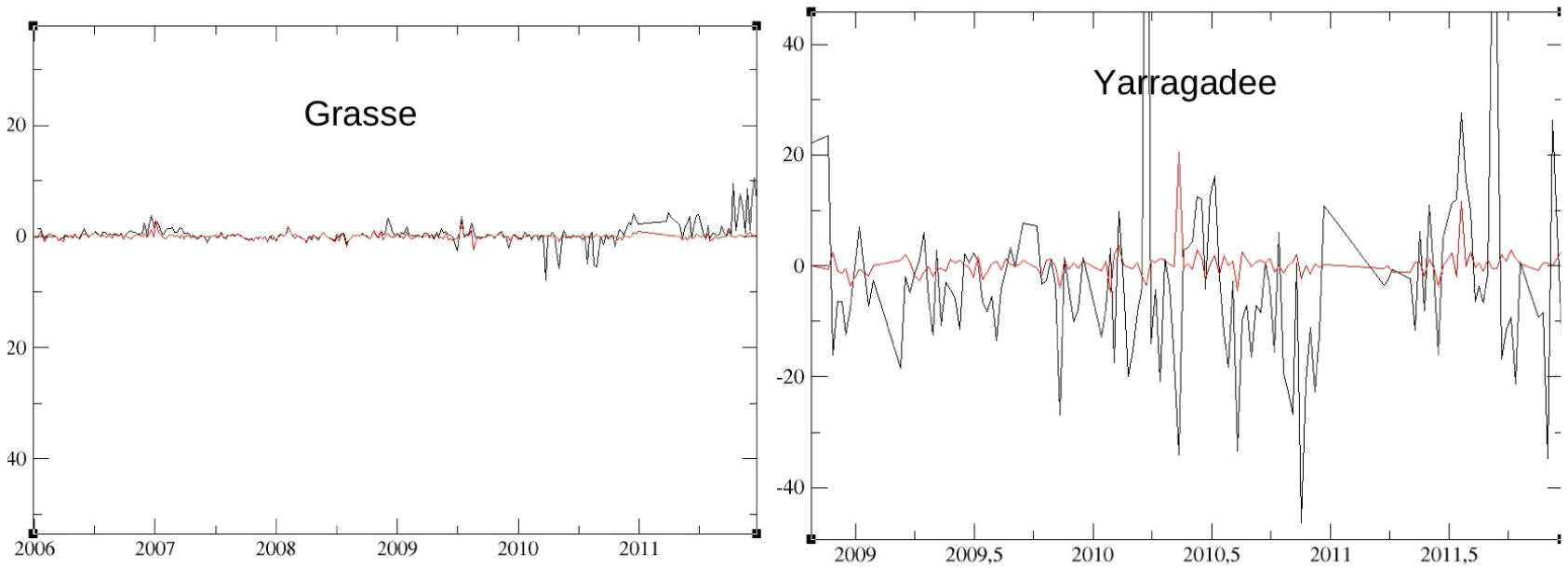
ITRF2008, effect on an earthquake: Concepcion



ITRF2008 features

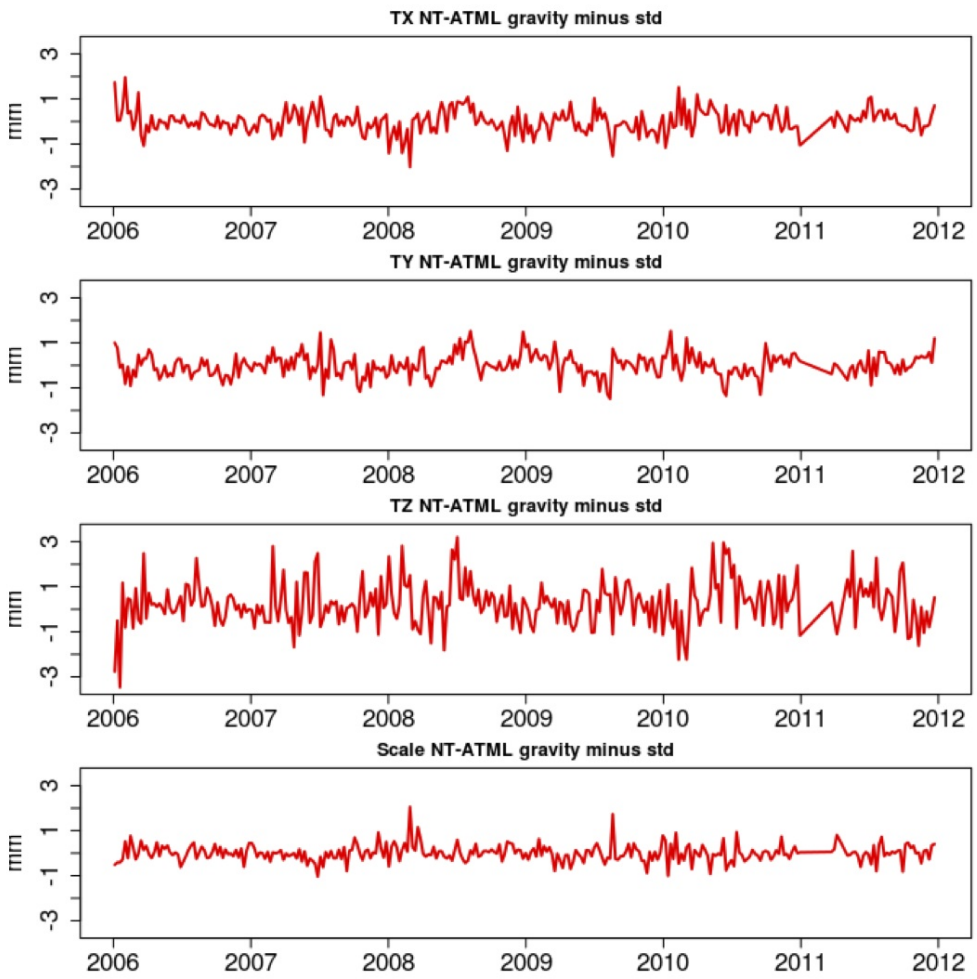
- To be compared with other ACs, within the AWG
- Errors in position
  - horizontal:
  - vertical: 7825 (Mount Stromlo), 7839 (Graz), 7845 (Grasse)
- Errors in velocity:
  - horizontal: 7110 (Monument P.), 7403 (Arequipa), 7405 (Concepcion), 7406 (San Juan)
  - vertical : 7403 (Arequipa), 7405 (Concepcion)
- Bias: 7308 (Konagei), 7110 (Monument P., 2008)

Effects of NT-ATML



Difference en mm (apres retrait des parametres de transfo) entre les solutions avec et sans les variations du champ NT-ATML. Pas de corrections géométriques
Noir: standard moins standard+champ GRGS
Rouge: standard moins standard+champ GGFC

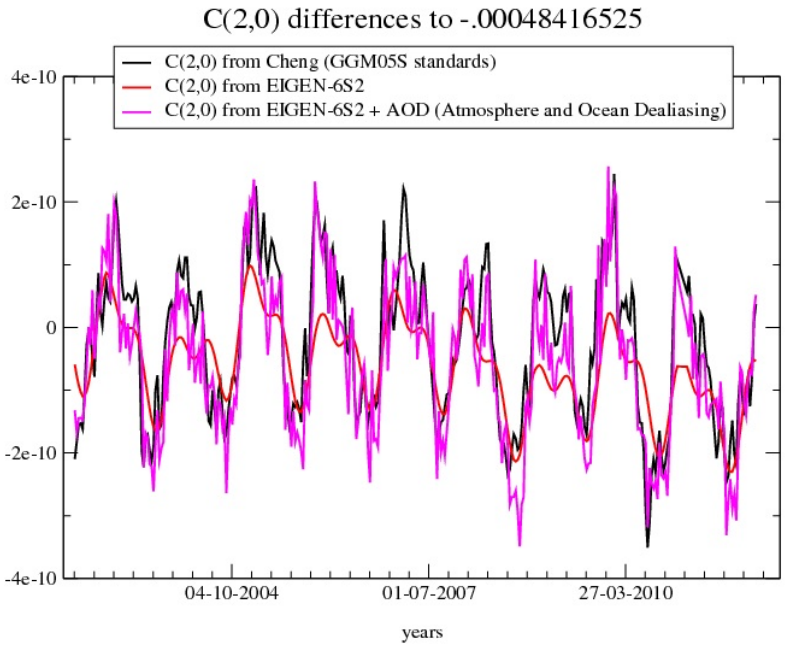
Effects of NT-ATML (2)

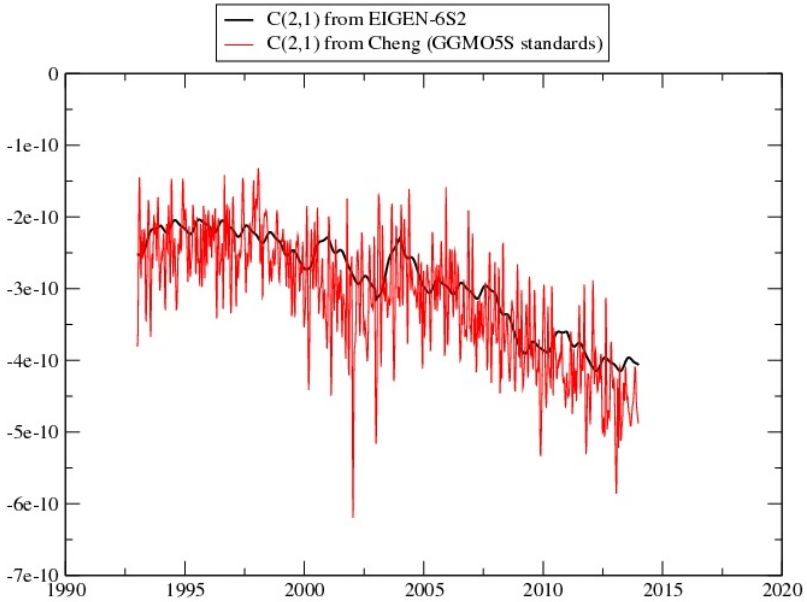


Conclusions (XC):

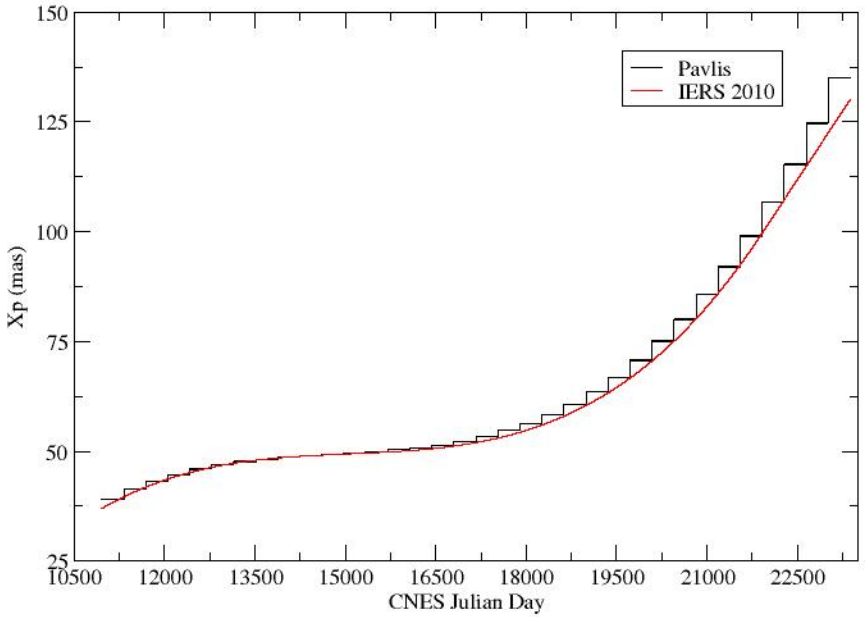
- Applying NT-ATML: TZ change of 0.3mm in amplitude
- Applying NT-ATML: change of 0.7mm on the annual signal on the scale
- Applying NT-ATML: decrease of the TZ signal

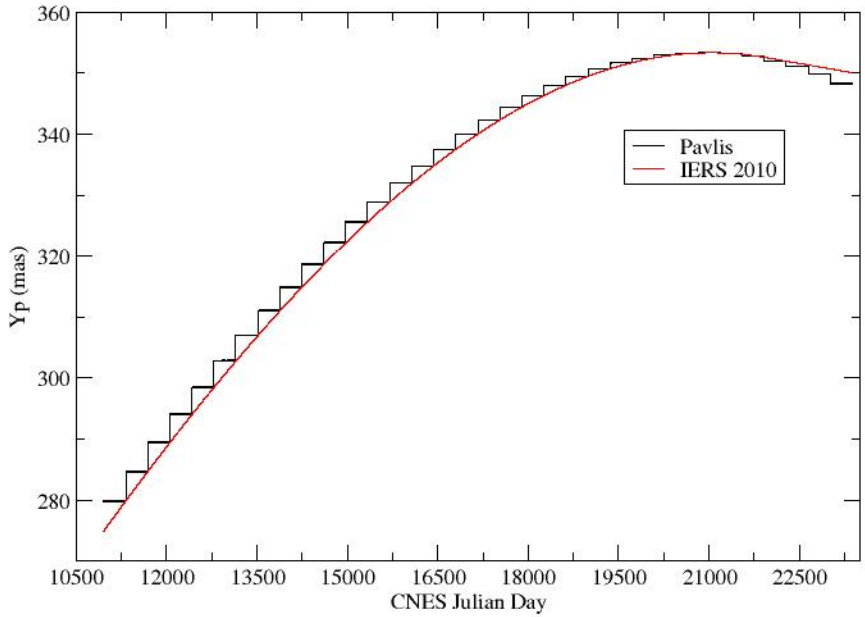
SLR modelling for ITRF2013: GF



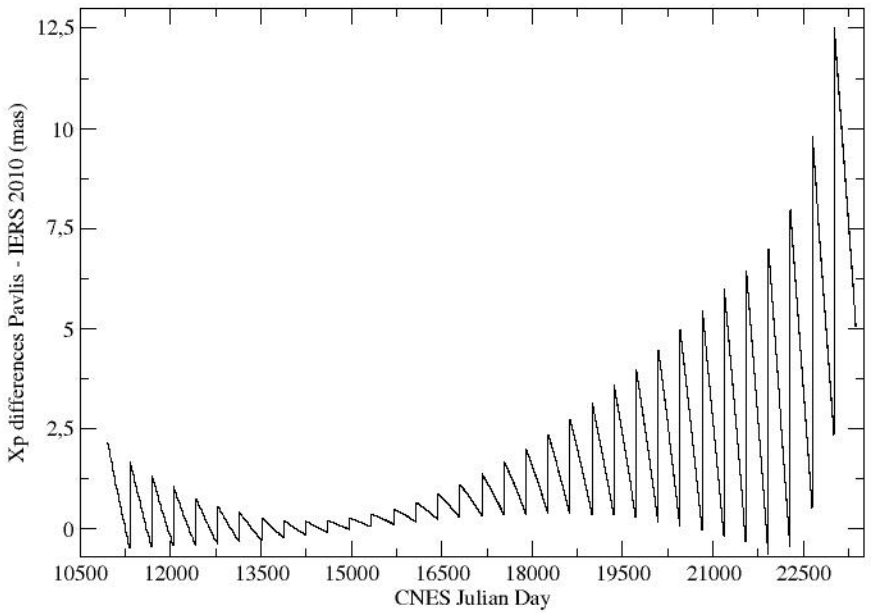


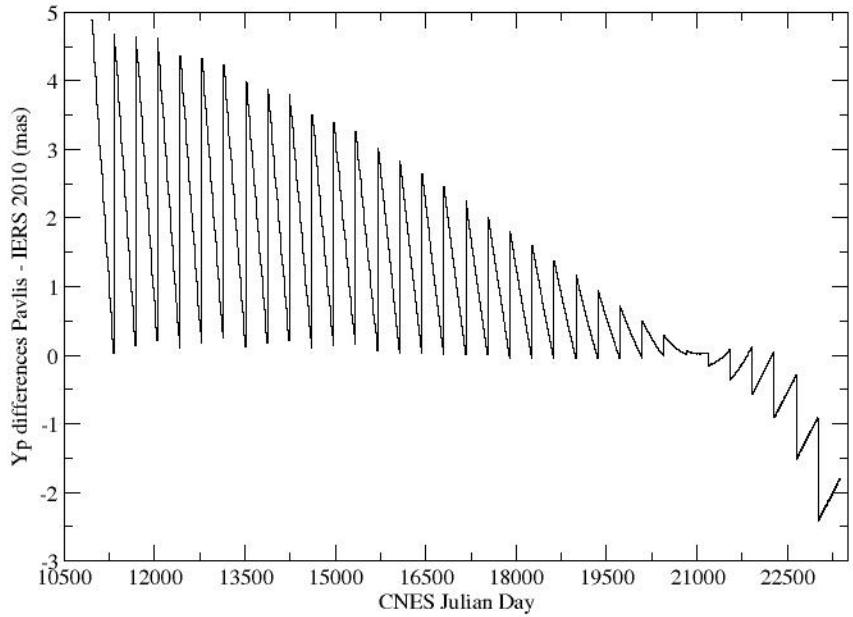
SLR modelling for ITRF2013: the "mean pole affair"



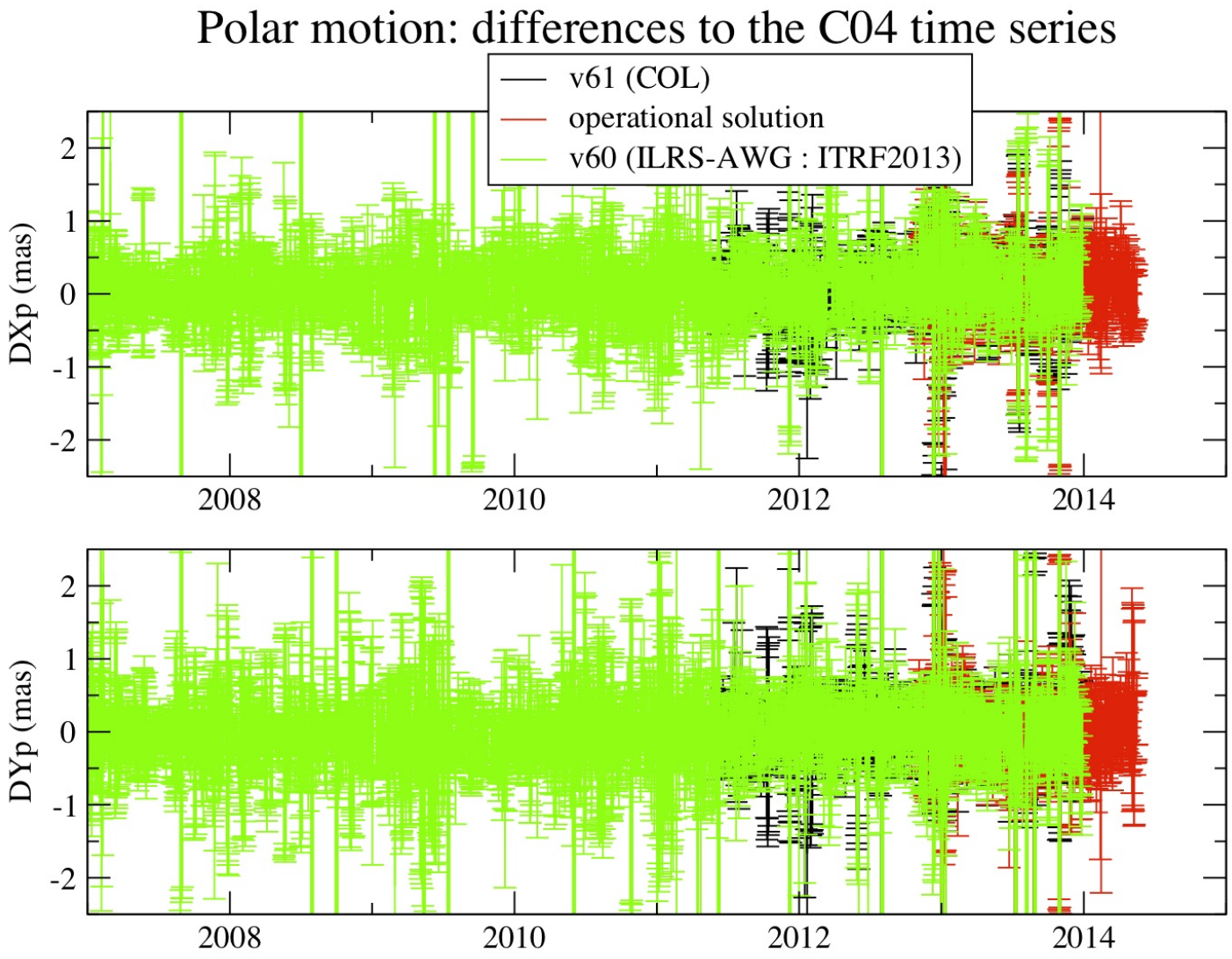


SLR modelling for ITRF2013: the "mean pole affair"





SLR - GRGS AC contribution to ITRF2013: first results



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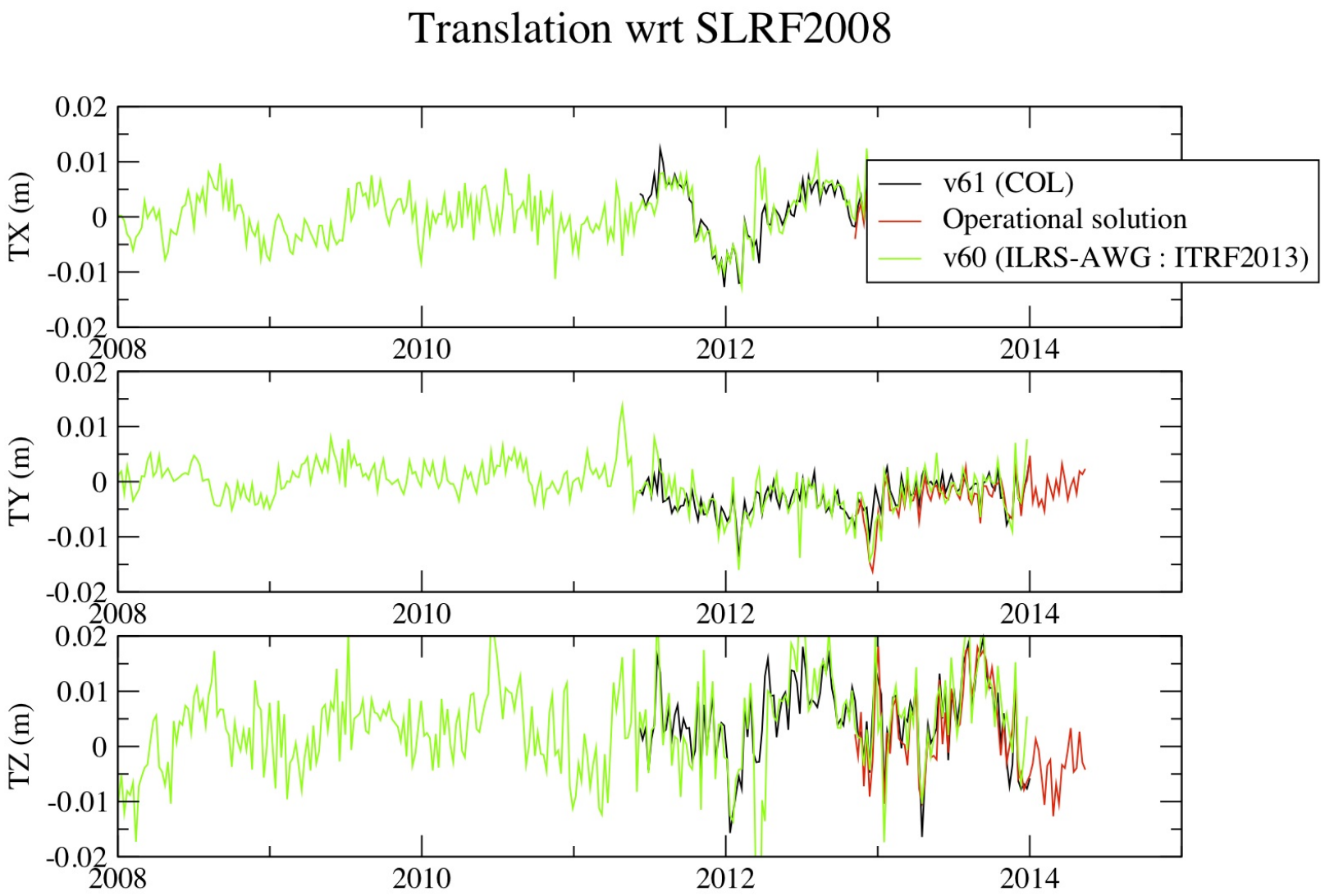

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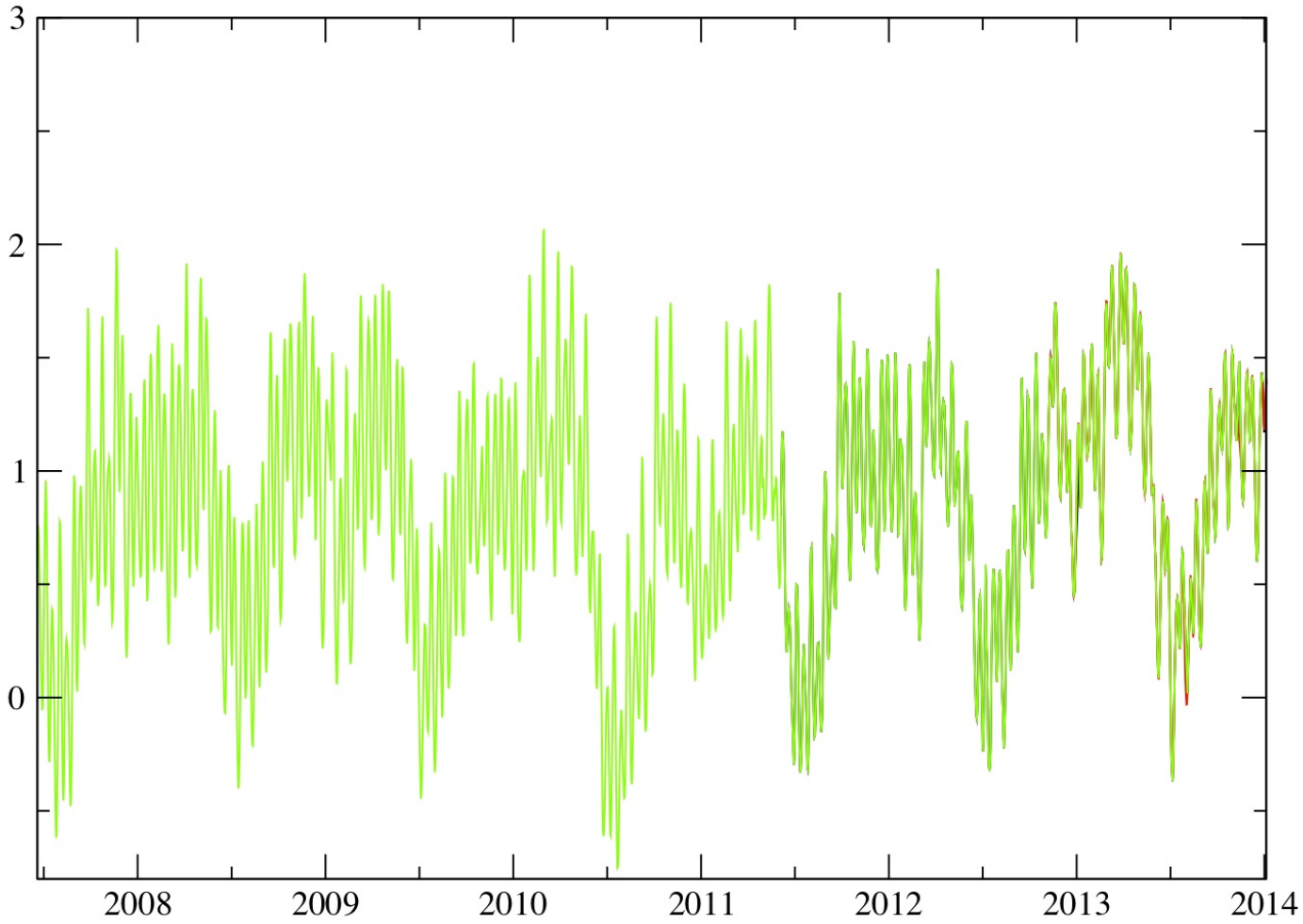

SLR - GRGS AC contribution to ITRF2013: first results