

Preparatory analysis for the ITRF2020

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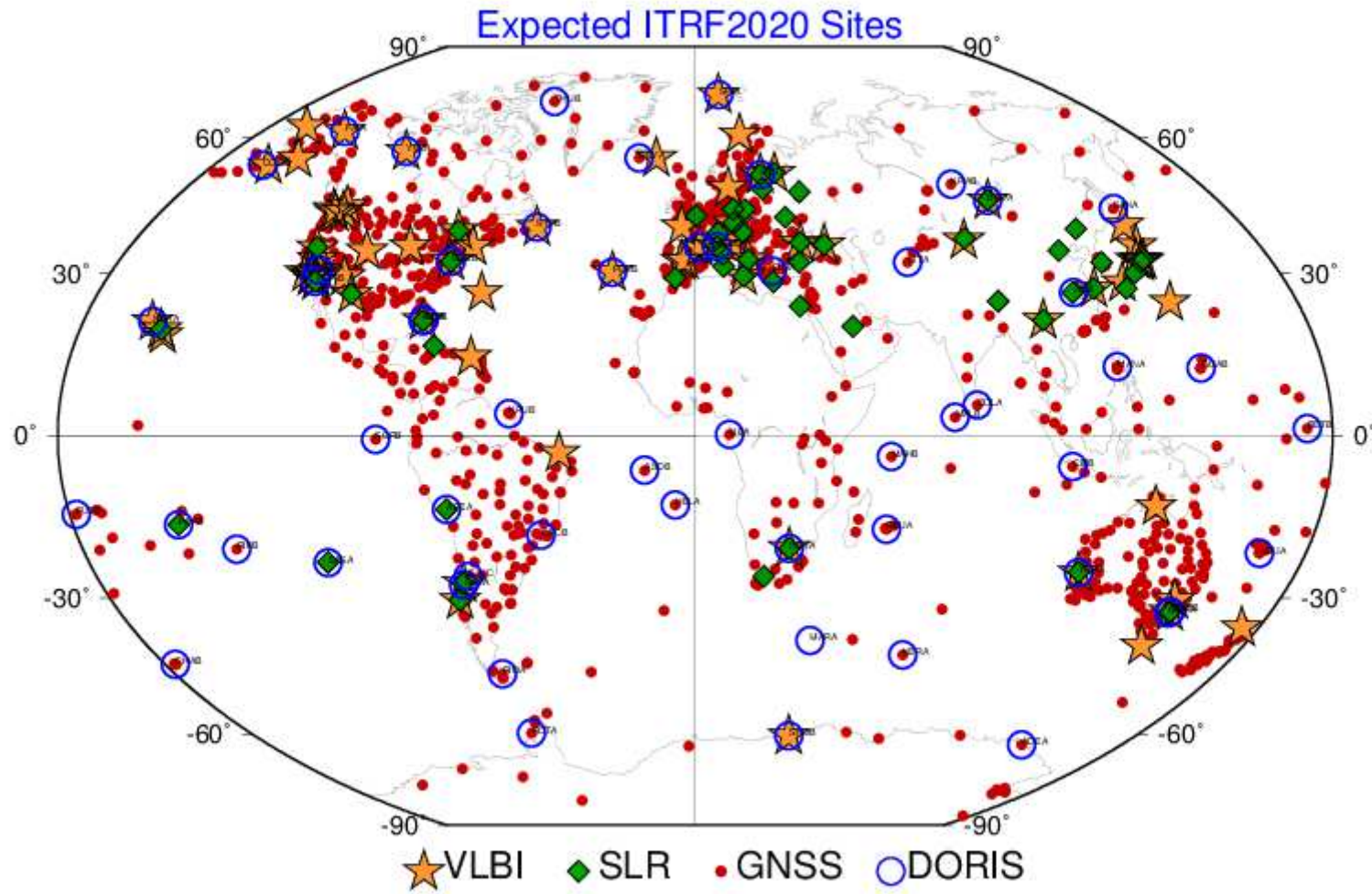
IGN-IPGP, France

ITRF2020: Initial Schedule & time-line

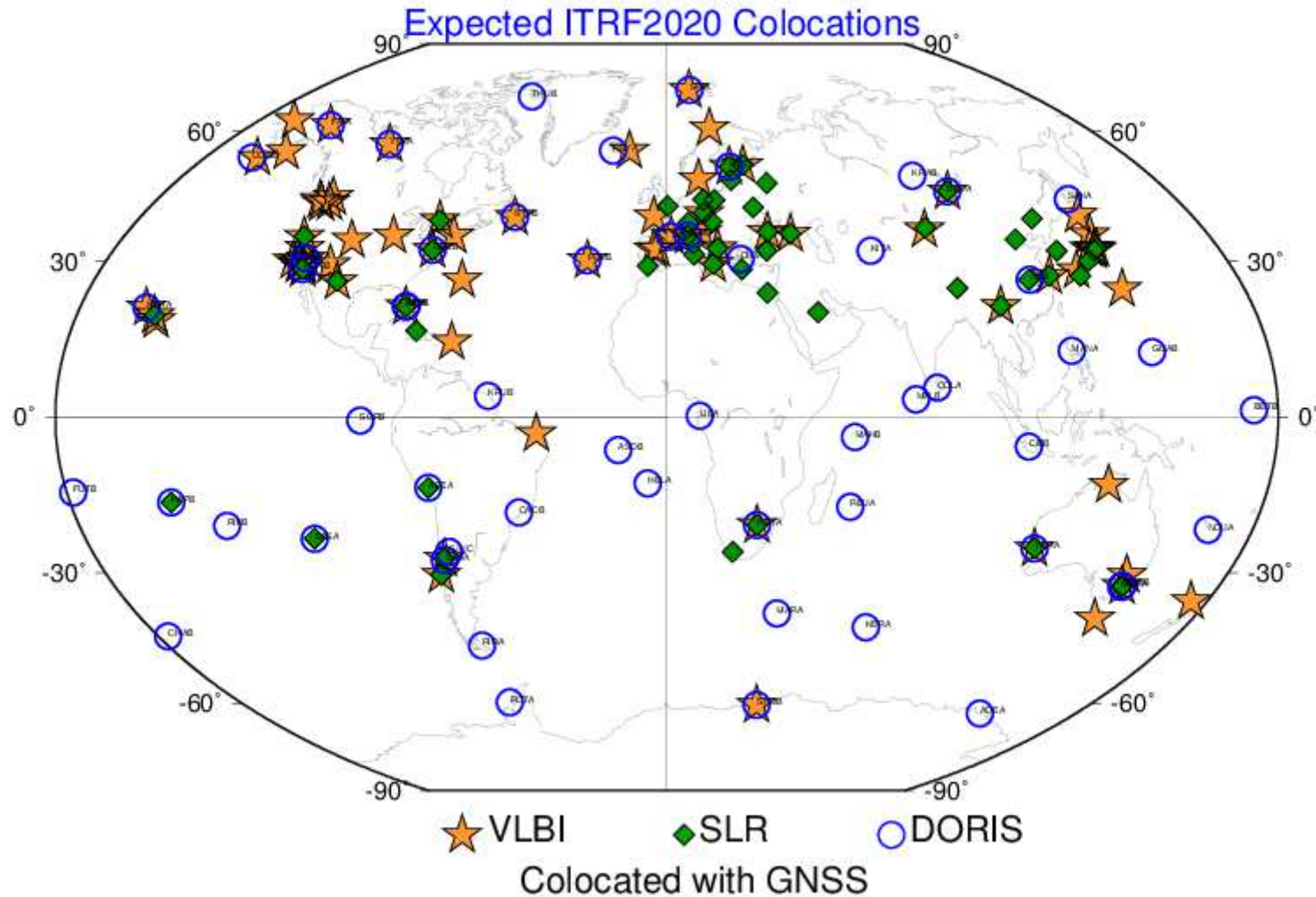
Date	Action
January 10, 2019	Dissemination of the Call for Participation
February 10, 2021	Deadline for solution submissions by Technique Centers. Earlier submissions are welcome
April 2021	First and early results to be shared and discussed with the TCs.
Until end of May, 2021	Inter comparisons of the ITRF CCs solutions
~June, 2021	Preliminary ITRF2020 solution available for evaluation by TCs
Sep-Oct, 2021	Final ITRF2020 solution released by the ITRS Center

- Technique submissions are complete, **except IVS and ILRS**
- **Deadline for submission extended to end of May, 2021**
- **The subsequent milestones will be delayed**

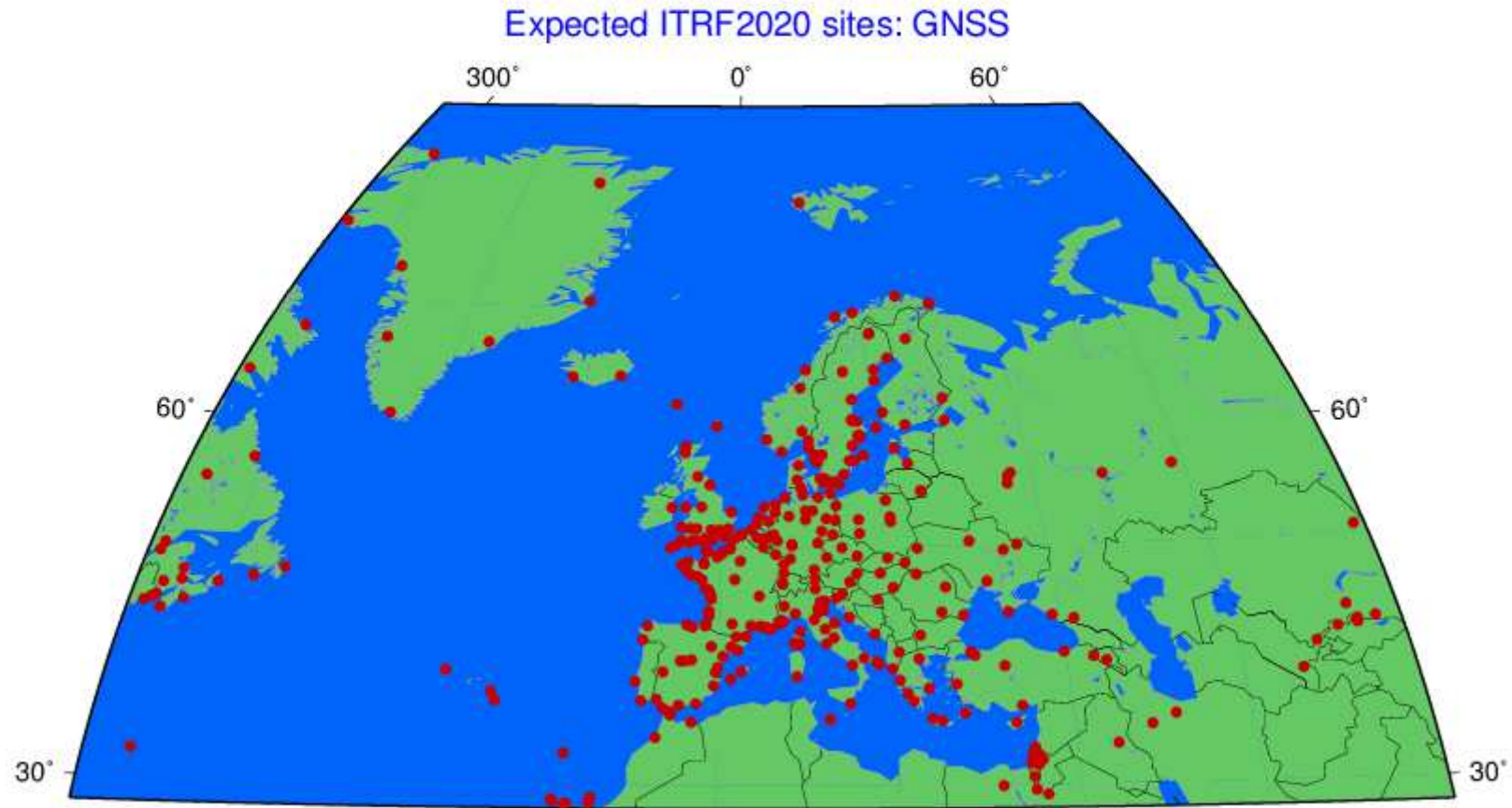
ITRF2020: Expected Sites



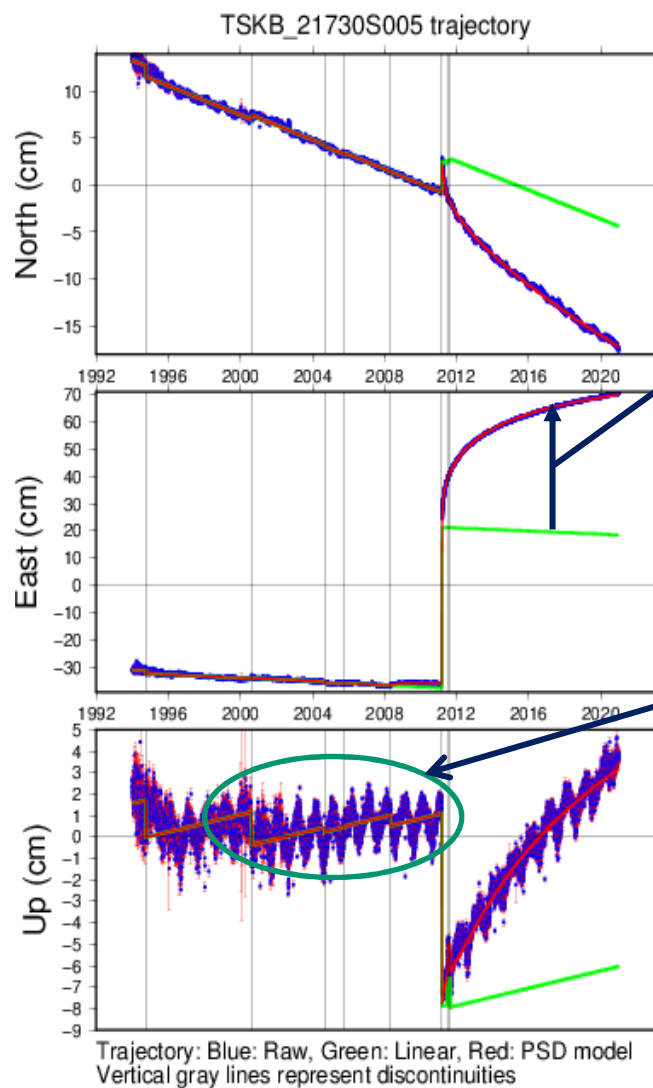
ITRF2020: Expected Colocation Sites



ITRF2020: Expected European Sites



ITRF2020: Augmented Parametric Reference Frame



Regularized position

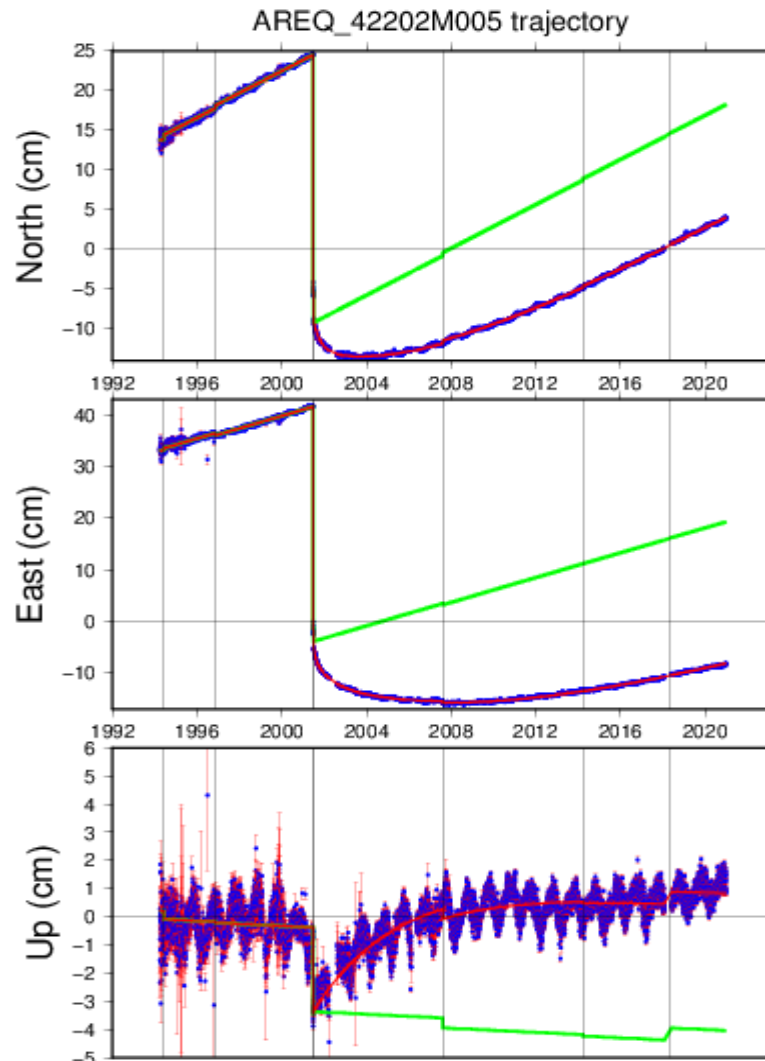
$$X(t) = X(t_0) + \dot{X} \cdot (t - t_0) + \delta X(t)_{PSD} + \delta X(t)_S$$

Σ Post-Seismic Deformations (PSD)
Parametric models will be refined

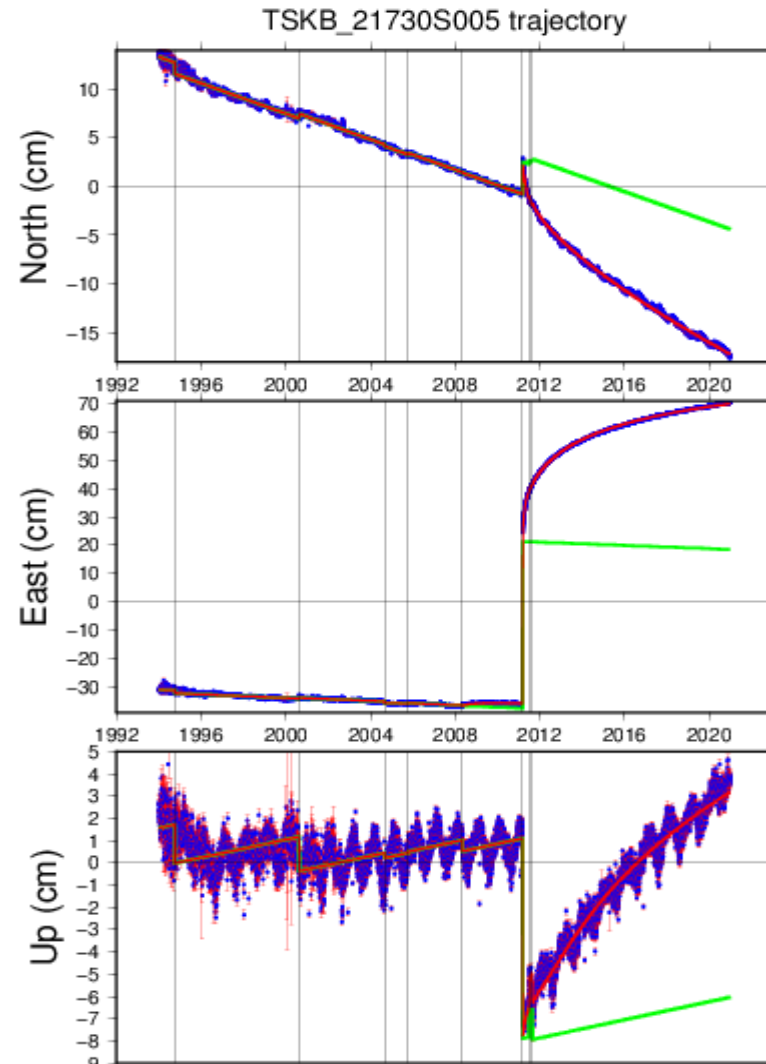
Σ Periodic Signals
will be provided in
the CM-SLR frame

But there are discrepancies in the
annual signal between techniques at
some colocation sites.

Arequipa & Tsukuba trajectories: Repro3 data + PSD models of ITRF2014

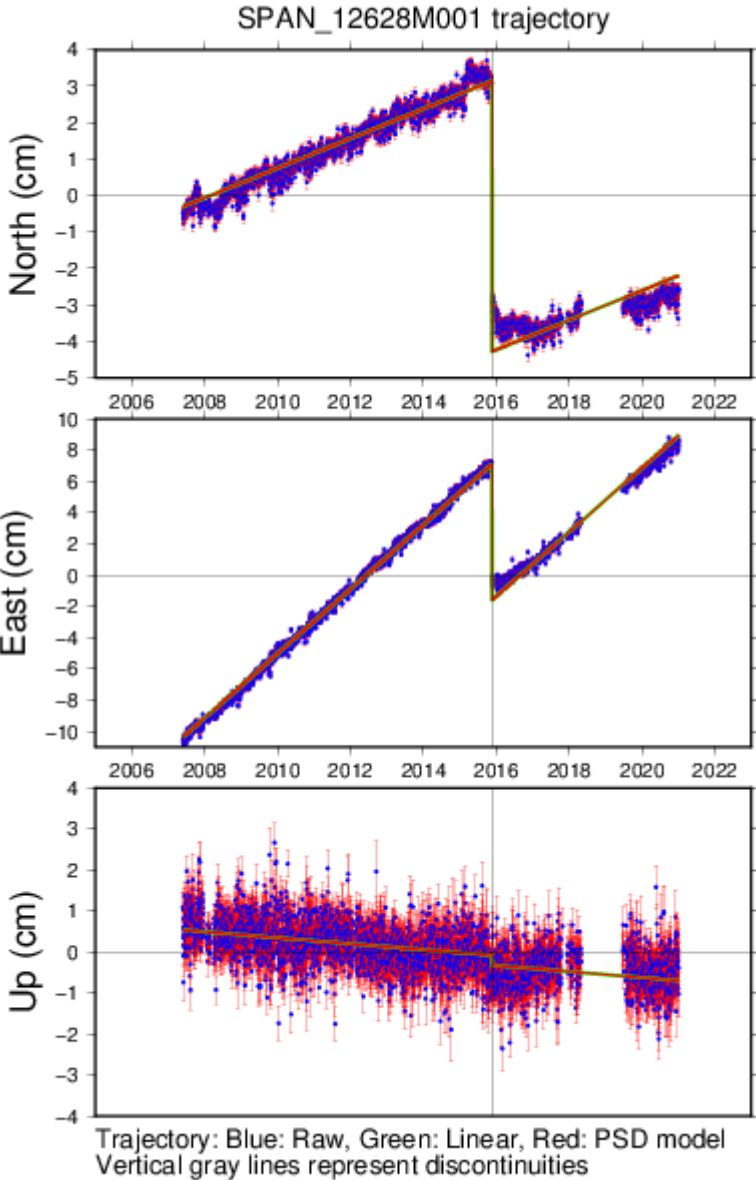


Trajectory: Blue: Raw, Green: Linear, Red: PSD model
Vertical gray lines represent discontinuities



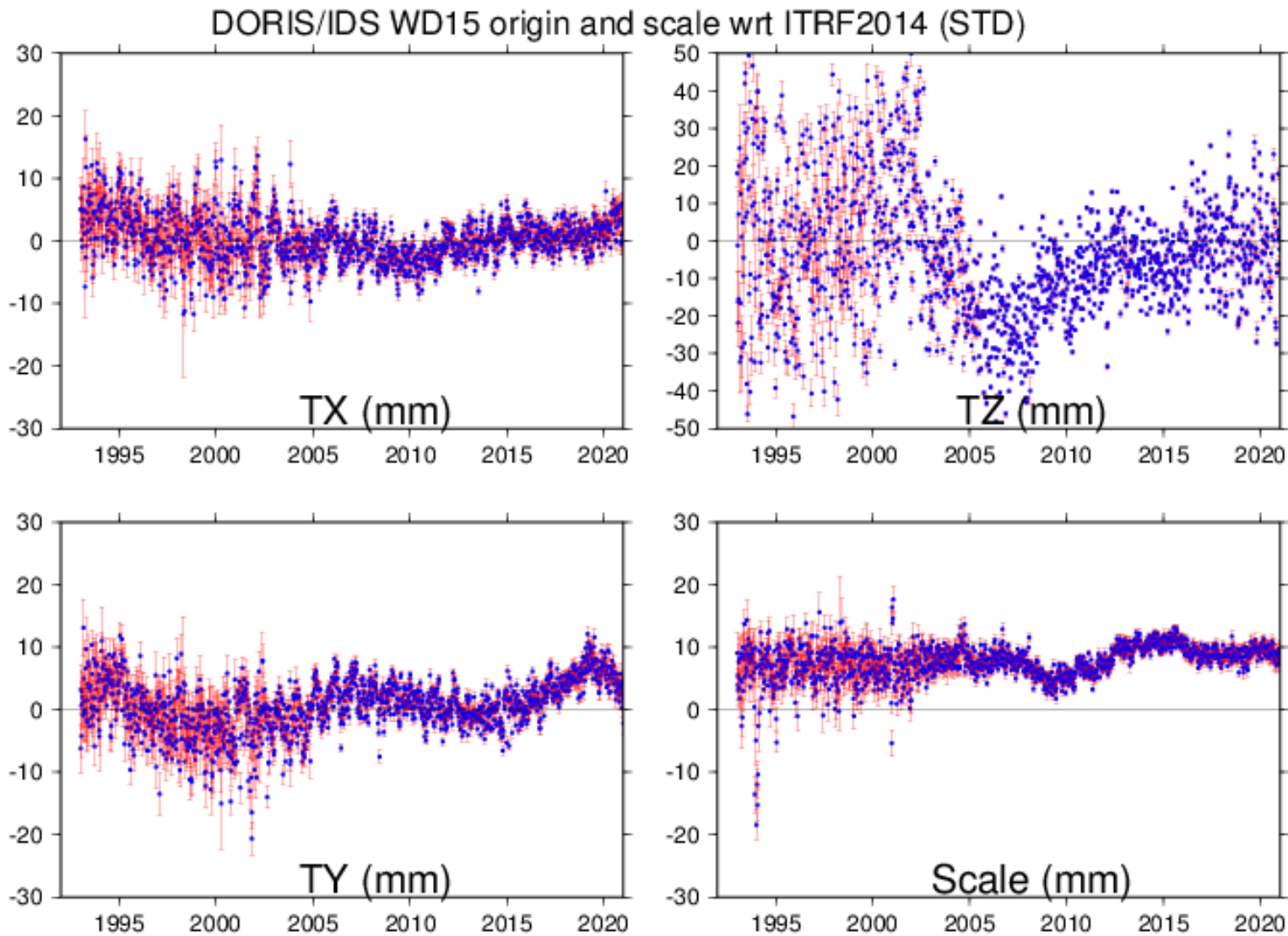
Trajectory: Blue: Raw, Green: Linear, Red: PSD model
Vertical gray lines represent discontinuities

Spanochori, Greece



IDS 2020 origin & scale wrt ITRF2014

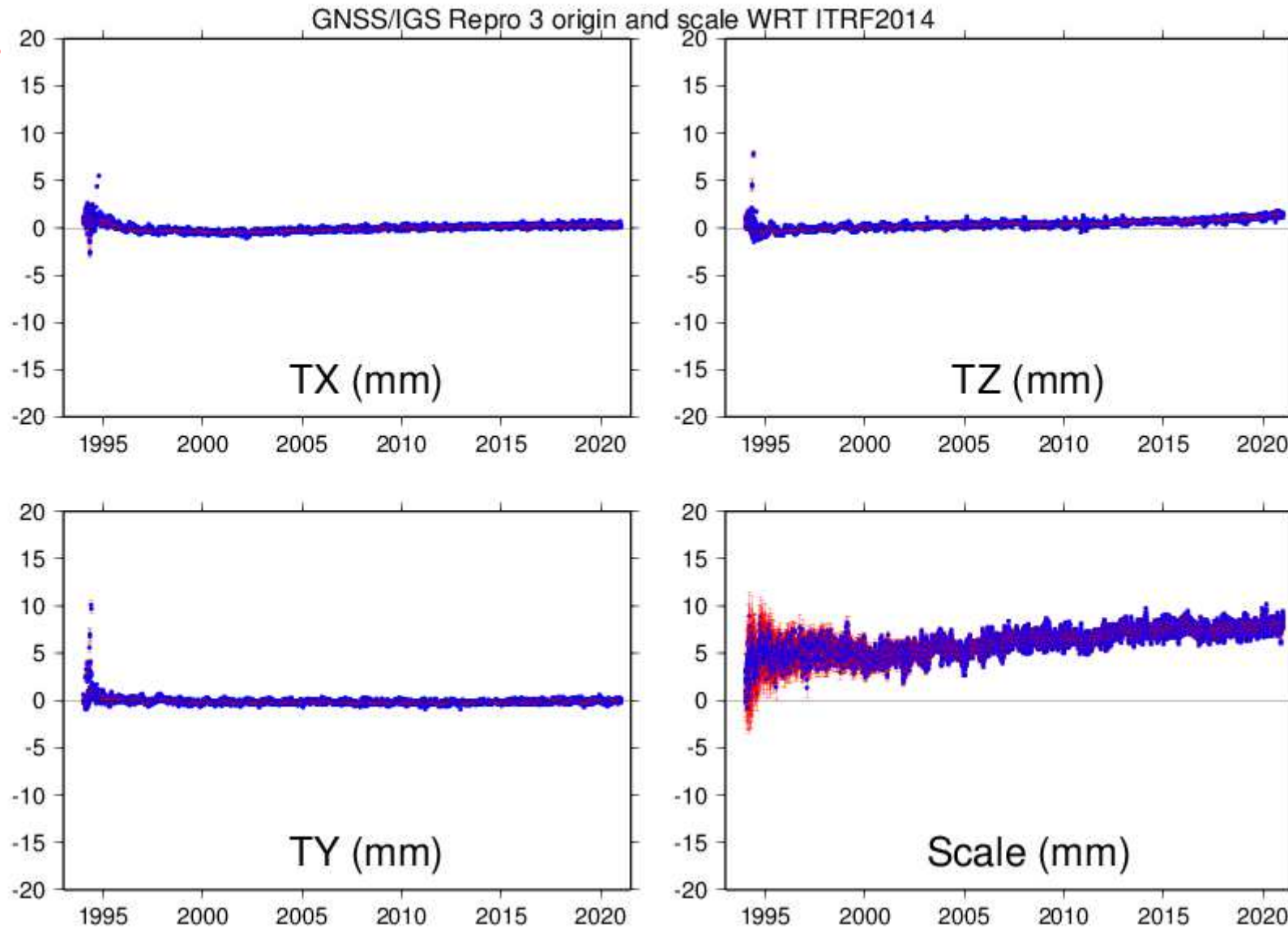
Preliminary



Preliminary

IGS Repro3 origin & Scale wrt ITRF2014

Preliminary



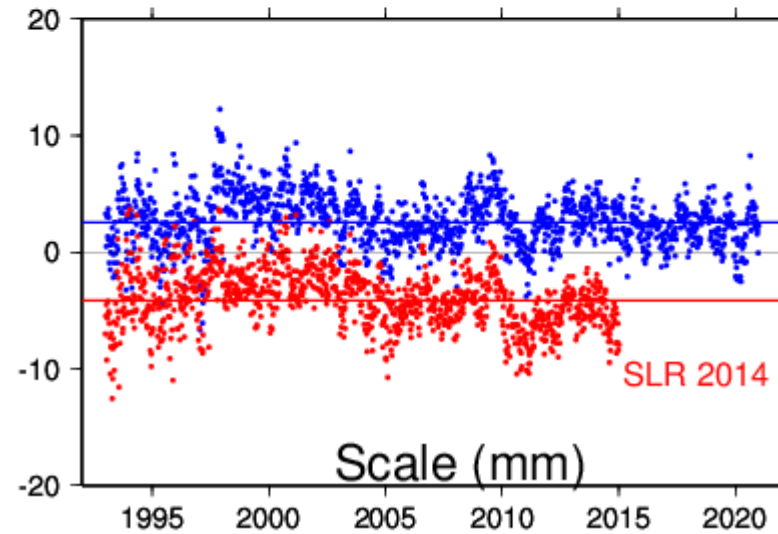
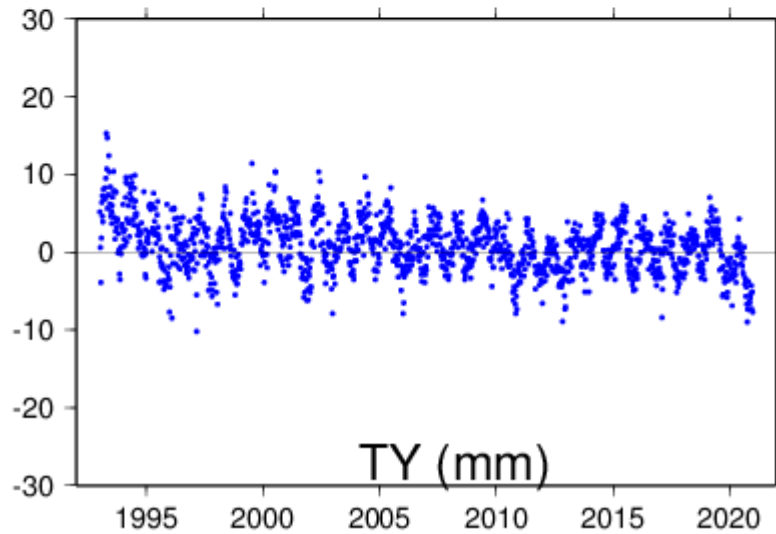
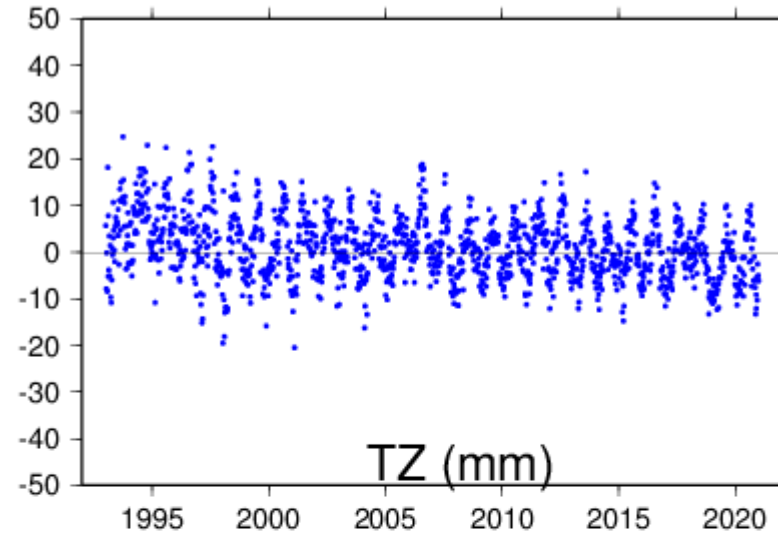
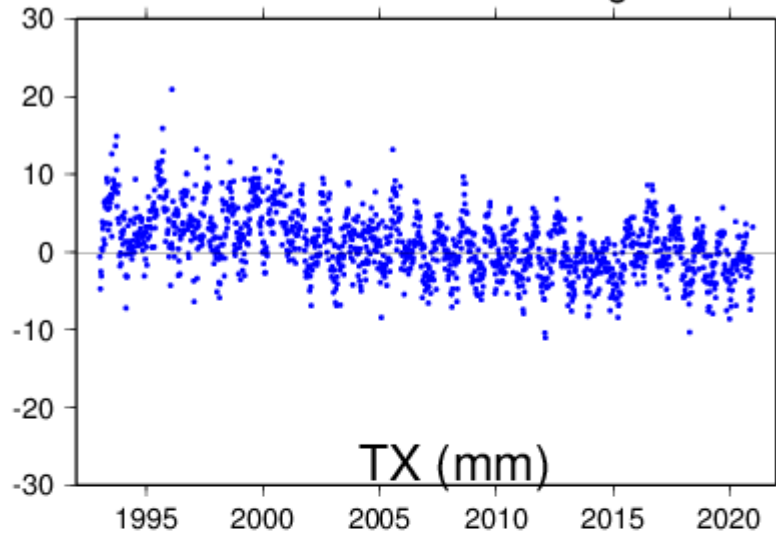
Preliminary

ILRSA 2020 origin & Scale wrt ITRF2014

Preliminary

Preliminary

ILRSA origin and scale wrt ITRF2014



Scales WRT ITRF2014

	Offset at 2010.0 (ppb)	Rate ppb/yr
VLBI Expected	0.68	0.01
SLR 2020	0.38	-0.01

Conclusion

- ITRF2020: an augmented parametric frame
- Analysis of ITRF2020 input data is still ongoing:
 - Nonlinear/aperiodic variation in the IDS scale
 - IGS apparent scale offset/drift with respect to ITRF2014 needs to be investigated
 - 1 ppb offset of SLR 2020 compared with 2014 data
 - Expected scale difference between SLR & VLBI:
 ≤ 0.5 ppb (~ 3 mm), versus 1.37 ppb (~ 8.2 mm) in ITRF2014
- ITRF2020 Scale ? : too early to know