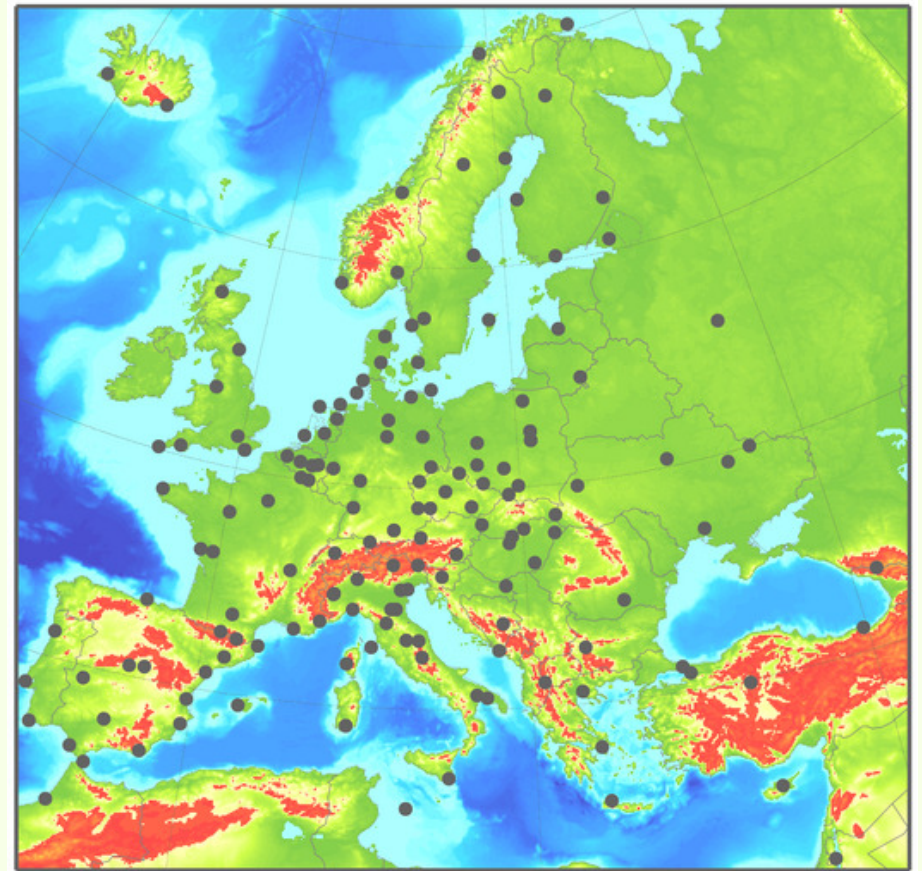


Present Status of the EUREF Permanent Network

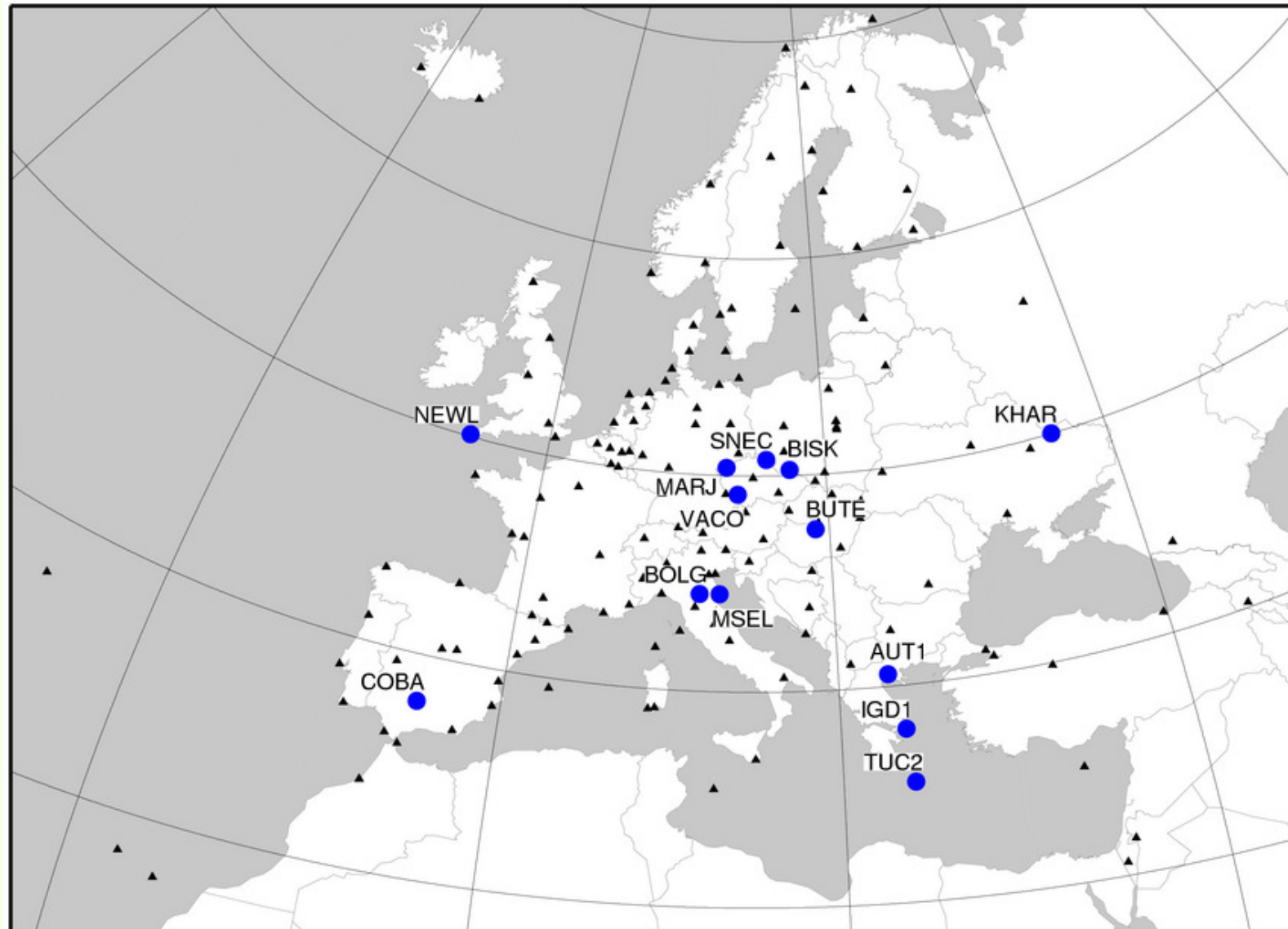
C. Bruyninx
EPN Network Coordinator

Royal Observatory of Belgium



STATUS OF EPN TRACKING NETWORK

171 permanent stations (including 4 inactive), 14 new stations



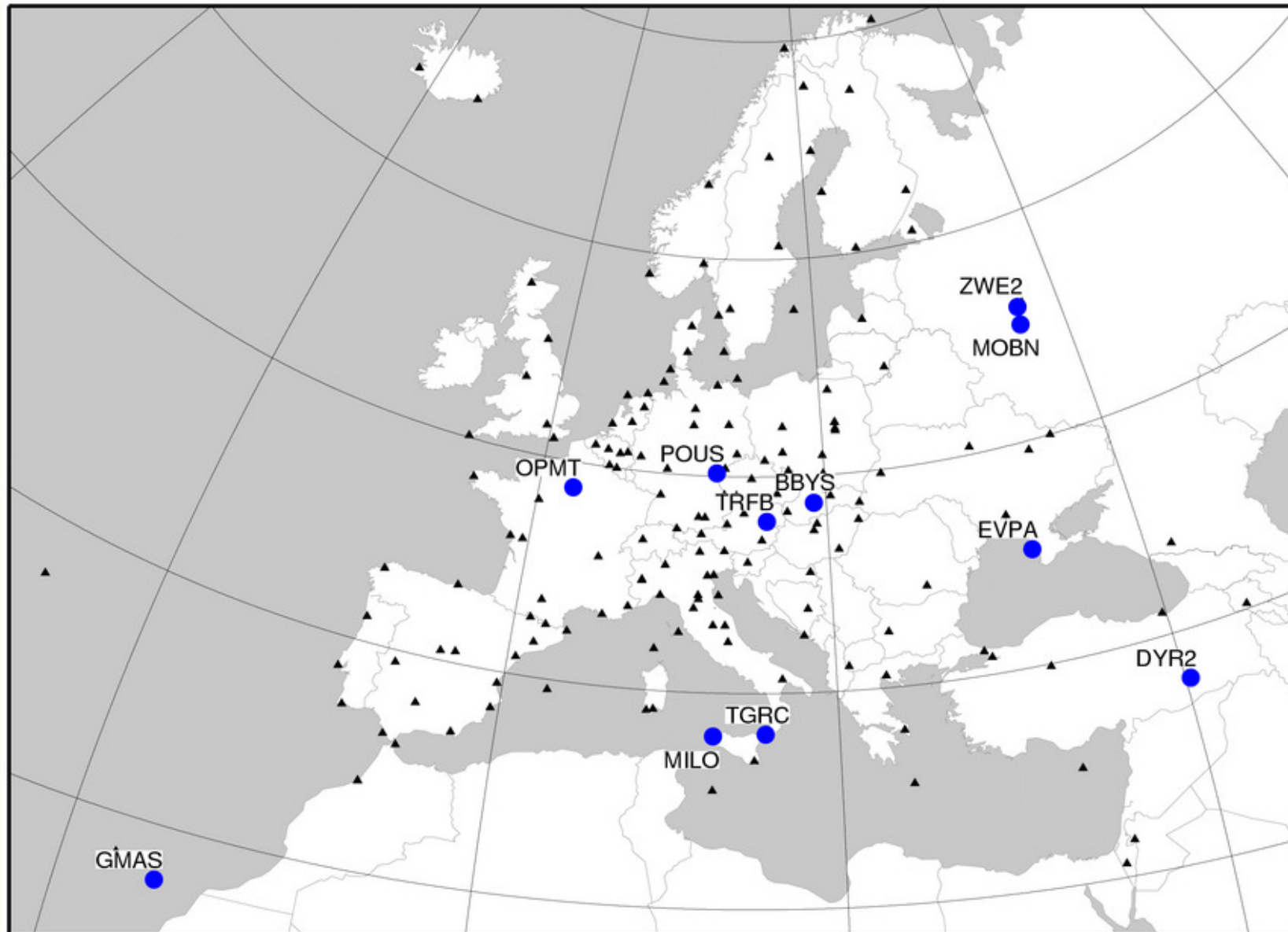
EPN TRACKING NETWORK – New stations

Station	4 char ID	Country	Date inc.	
Newlyn	NEWL	England	27-06-2004	TG ECGN
Athens	IGD1	Greece	19-09-2004	H
Medicina	MSEL	Italy	10-10-2004	ECGN
Chania	TUC2	Greece	24-10-2004	H
Budapest	BUTE	Hungary	31-10-2004	H IP
Taranto	TARS	Italy	19-12-2004	Withdrawn 04/2005
Cordoba	COBA	Spain	27-02-2005	H IP
Kharkiv	KHAR	Ukraine	20-03-2005	H
Bologna	BOLG	Italy	27-03-2005	ECGN
Thessaloniki	AUT1	Greece	24-04-2005	H
Zlate Hory	BISK	Czech Republic	24-04-2005	H GLO
Jachymov	MARJ	Czech Republic	24-04-2005	H GLO
Pec	SNEC	Czech Republic	24-04-2005	H GLO
Vacov	VACO	Czech Republic	24-04-2005	H GLO

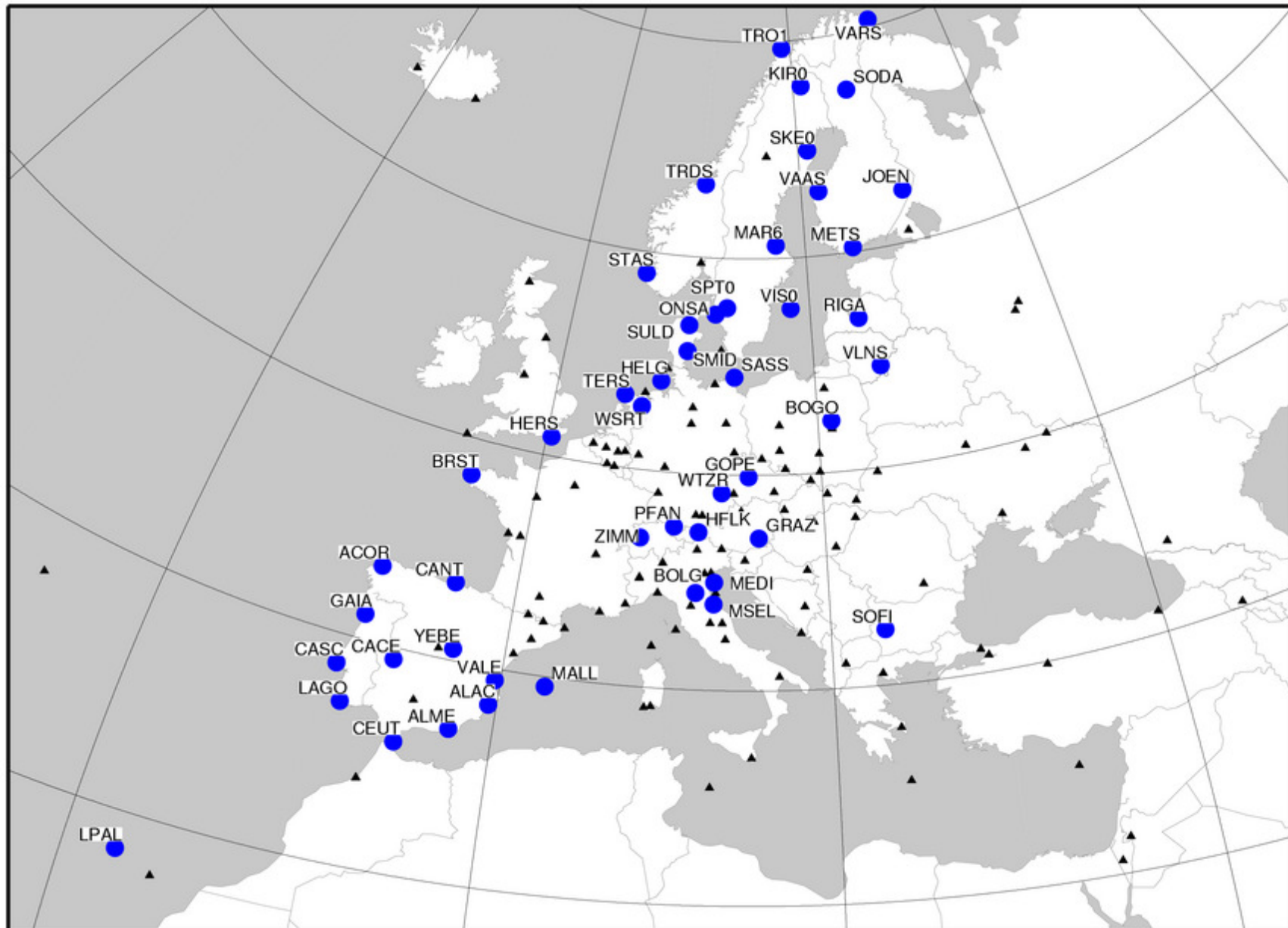
IGS more selective when including new stations



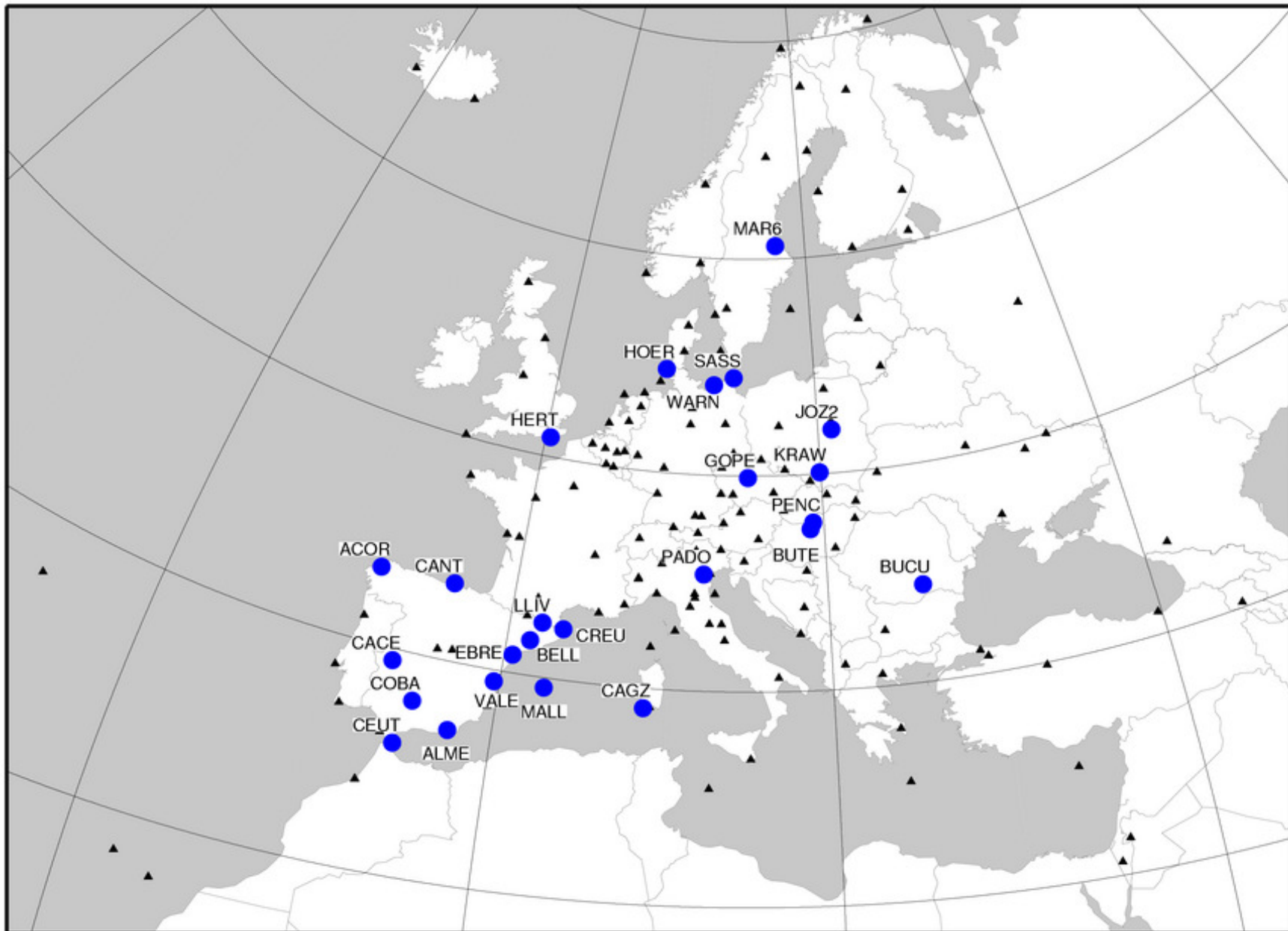
PROPOSED EPN STATIONS



EPN STATIONS CONTRIBUTING TO ECGN



EPN STATIONS CONTRIBUTING TO EUREF-IP



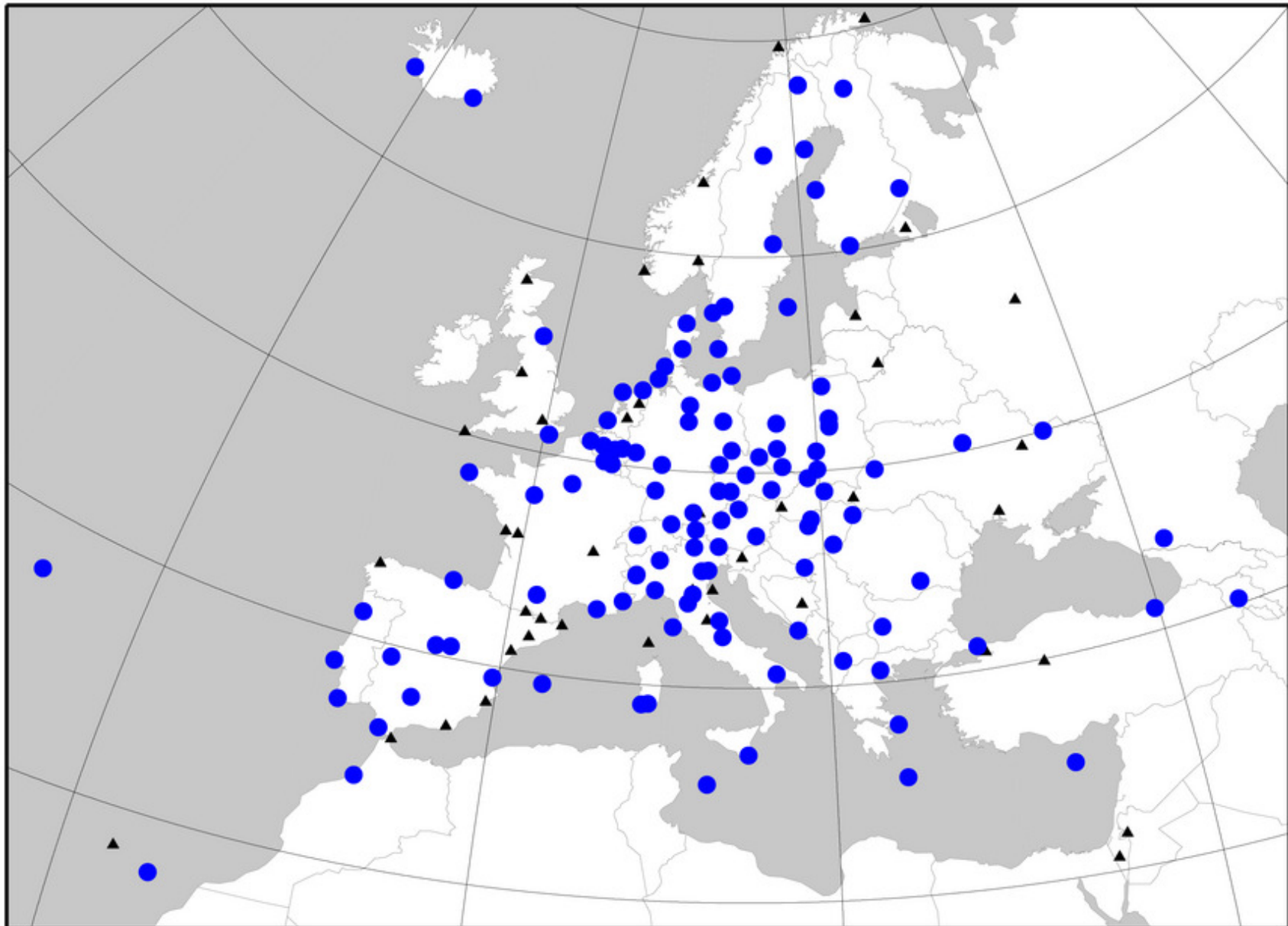
PROPOSED EPN STATIONS

Station	4 char ID	Country	Status
Banska Bystrica	BBYS	Slovak Republic	Commitment letter missing.
Diyarbakir	DYR2	Turkey	No data. Receiver to be replaced.
Evpatoria	EVPA	Ukraine	Hourly data missing.
Maspalomas	GMAS	Spain	Hourly data missing.
Trapani - Milo	MILO	Italy	Lack of low-elevation tracking data on L2.
Obninsk	MOBN	Russian Federation	Hourly data missing.
Paris	OPMT	France	Commitment letter missing.
Poustka	POUS	Czech Republic	Receiver to be repaired.
Reggio Calabria	TGRC	Italy	Lack of low-elevation tracking data on L2.
Trafelberg	TRFB	Austria	Late data availability.
Zwenigorod	ZWE2	Russia	Lack of low-elevation tracking data on L2.

+ 8 new stations in France (10 km from BRST, 40 km from DENT),
76 km from KARL)

EPN STATIONS SUBMITTING HOURLY DATA

2000 - 38%
2001 - 45%
2002 - 51%
2003 - 58%
2004 - 61%
2005 - 74%

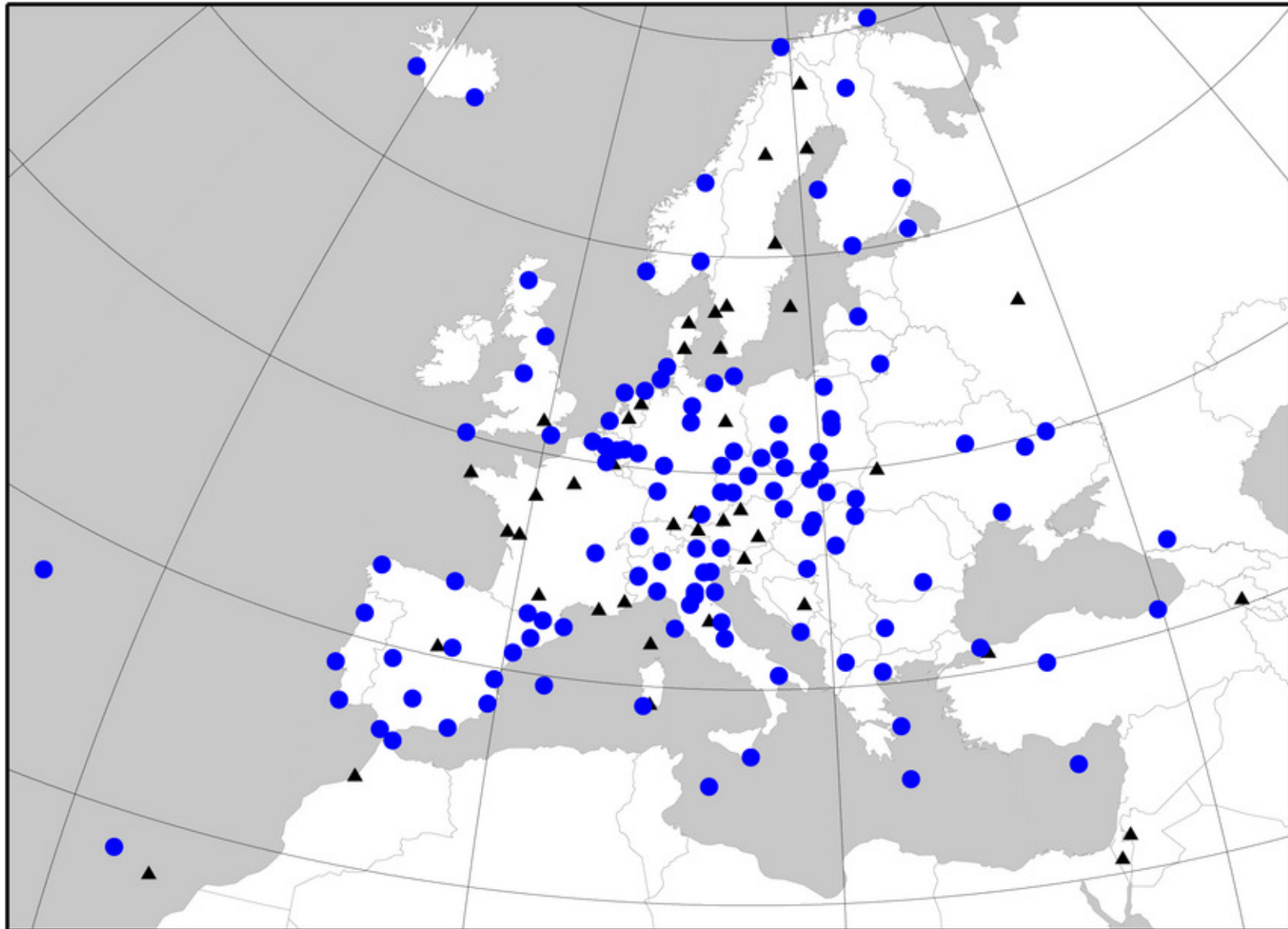


RELIABILITY OF HOURLY DATA FLOW





EPN STATIONS USING 2 INDEPENDENT DATA FLOW PATHS TO BKG AND OLG



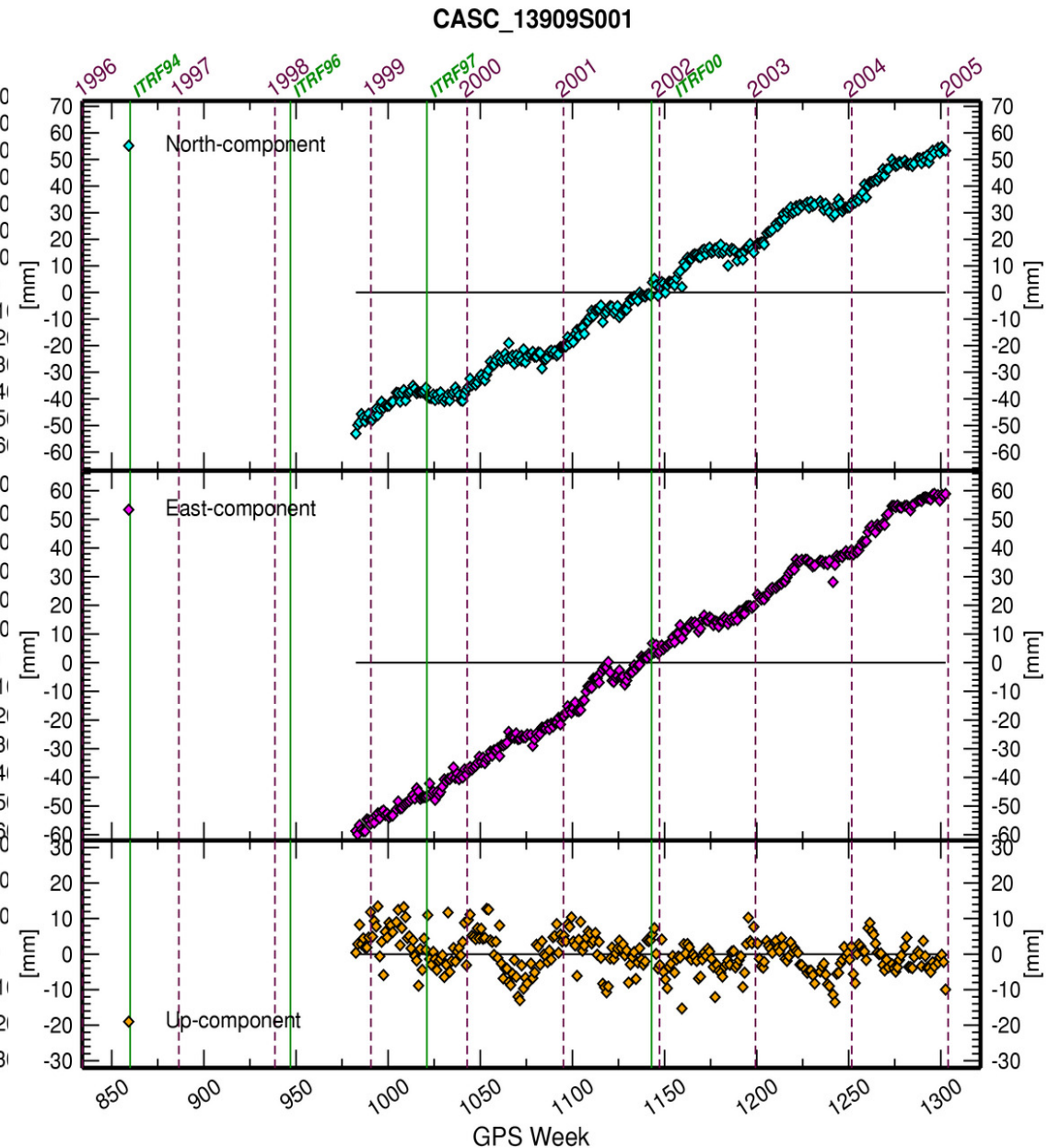
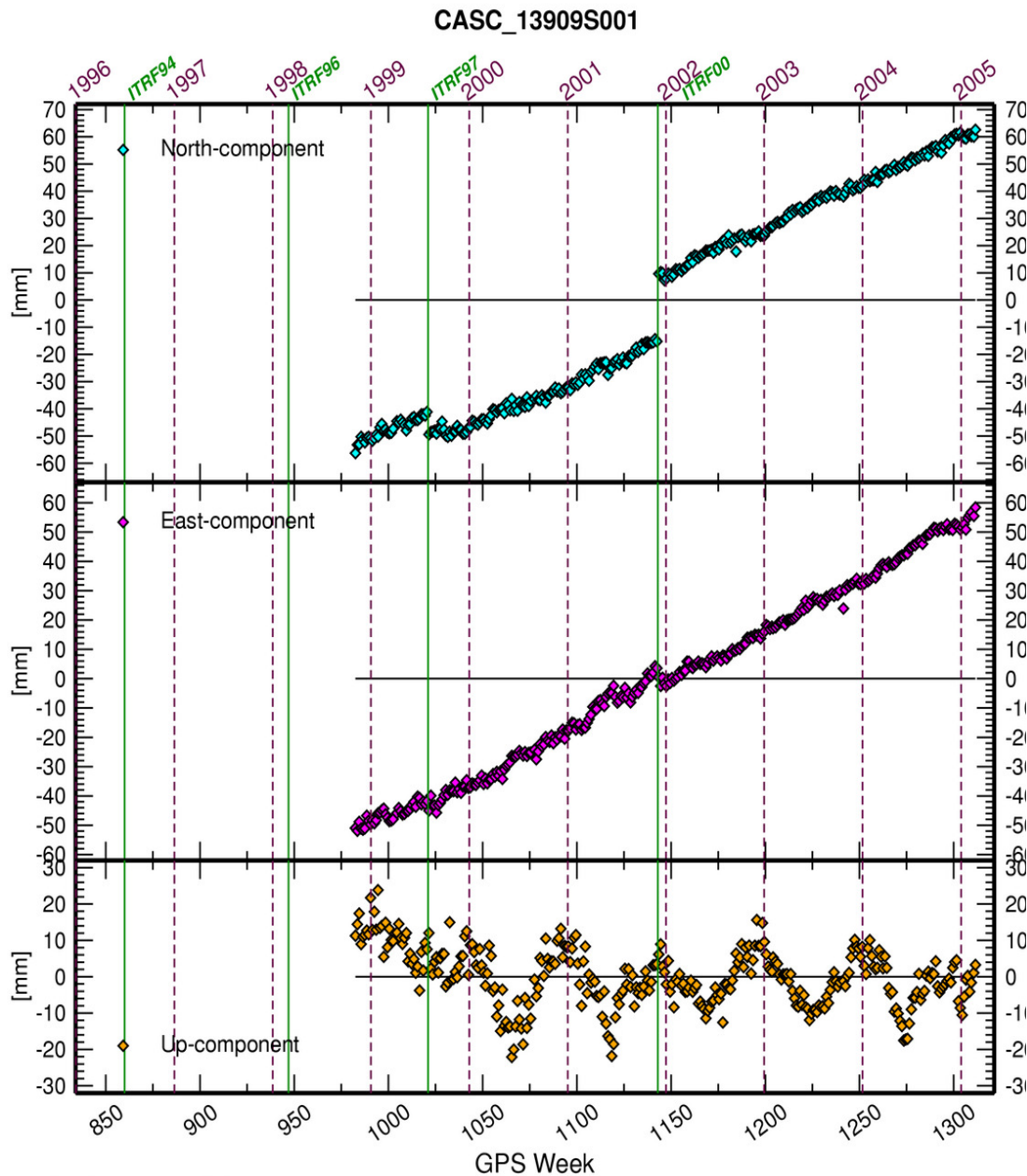
COMPARISON CONSTRAINED and MINIMALLY CONSTRAINED EUREF SOLUTION

One on hand:

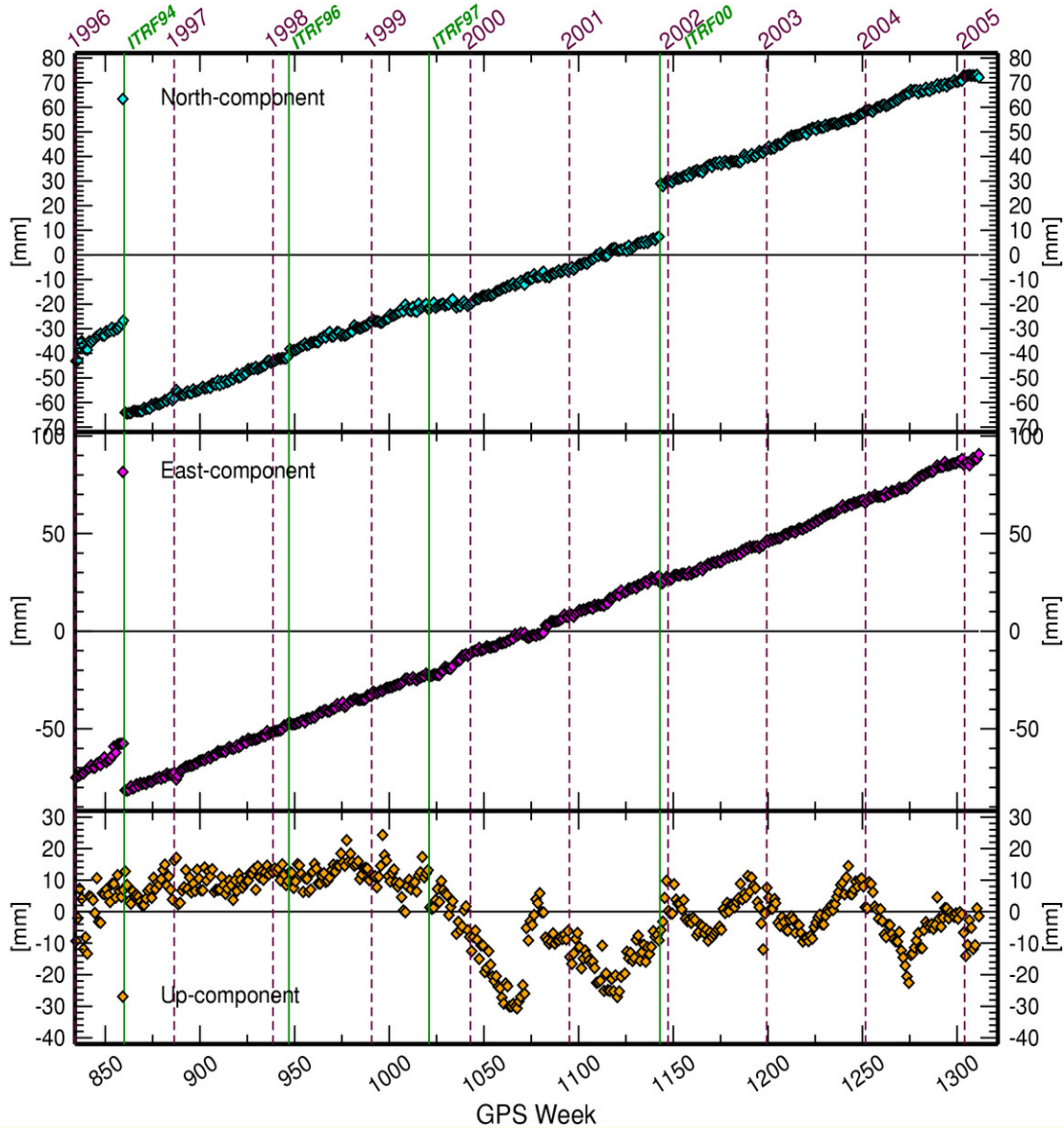
Coordinates from weekly combined EUREF SINEX solution tied to the ITRFxx using constraints (up to GPS week 1303)

On the other hand:

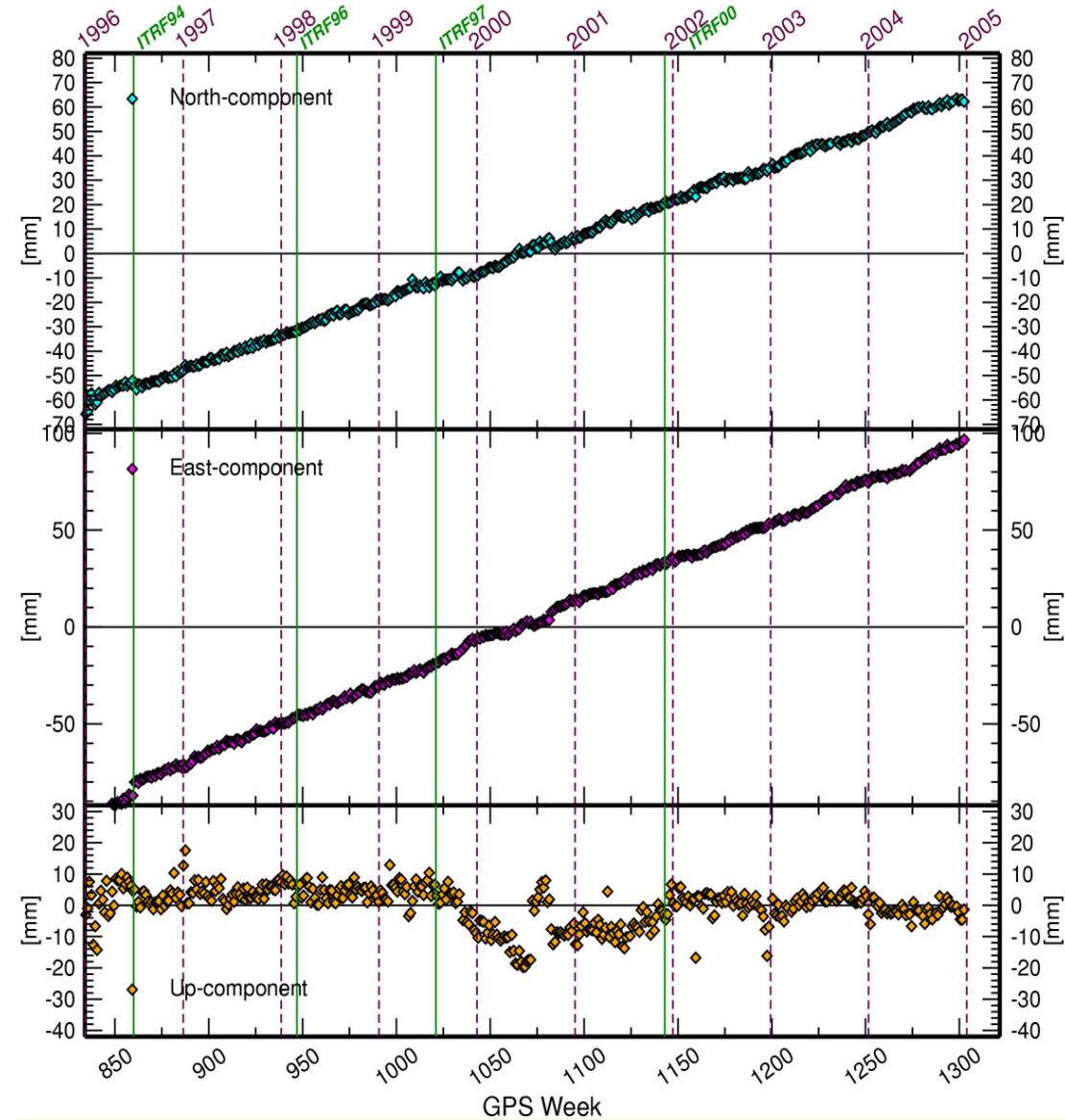
Coordinates from re-aligned weekly combined EUREF SINEX solution to ITRF2000 using minimum constraints (CatRef)



GOPE_11502M002

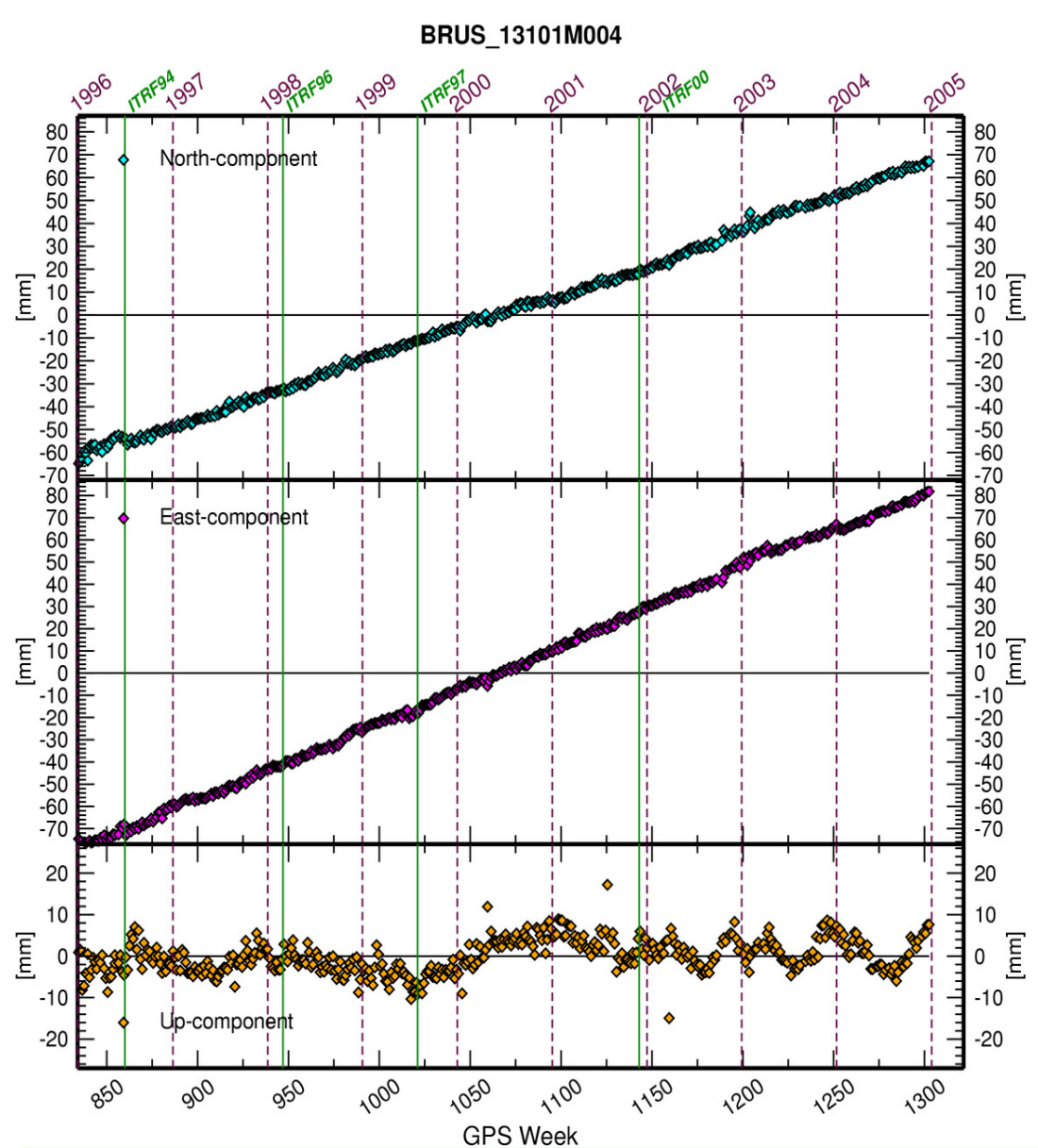
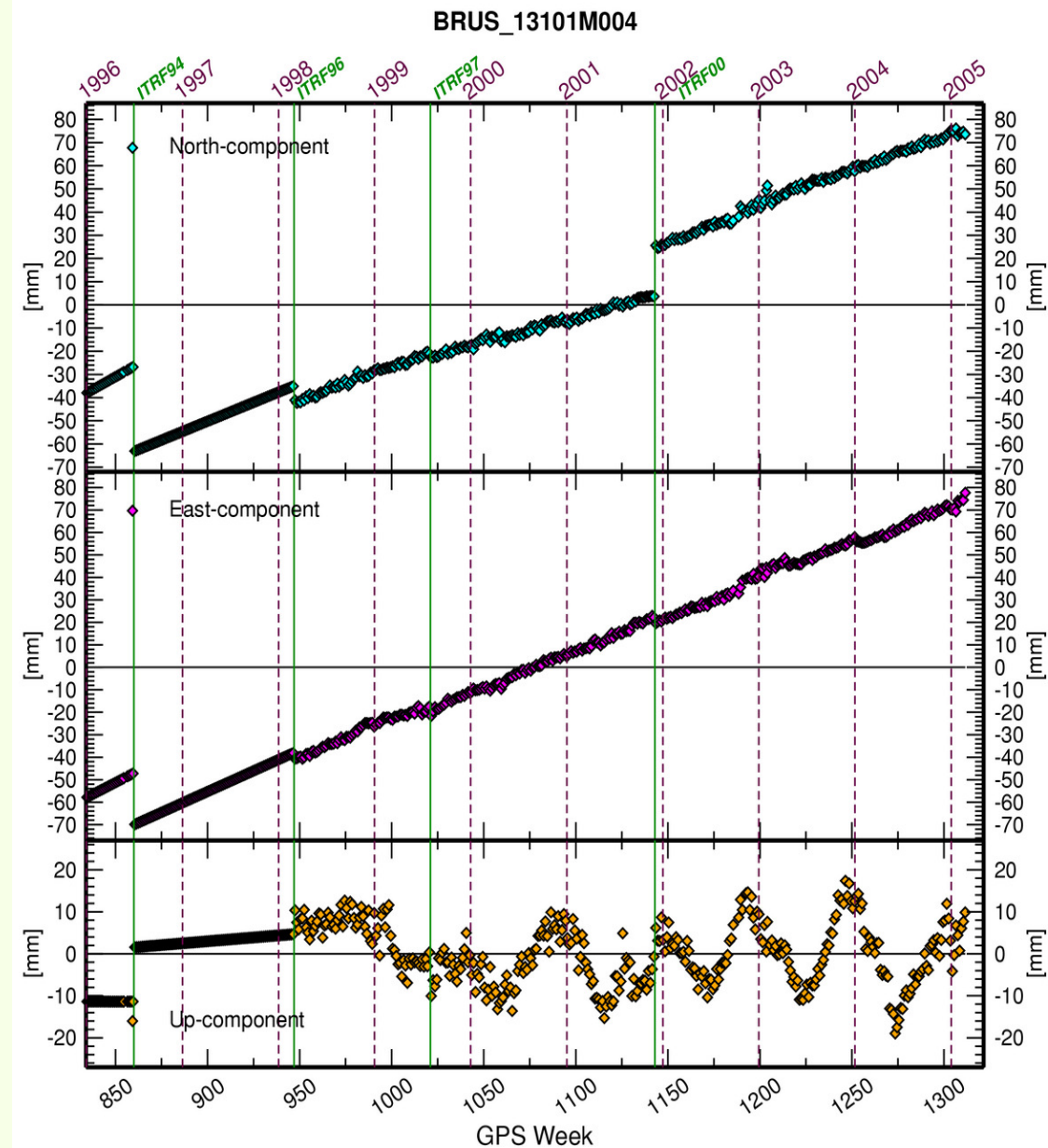


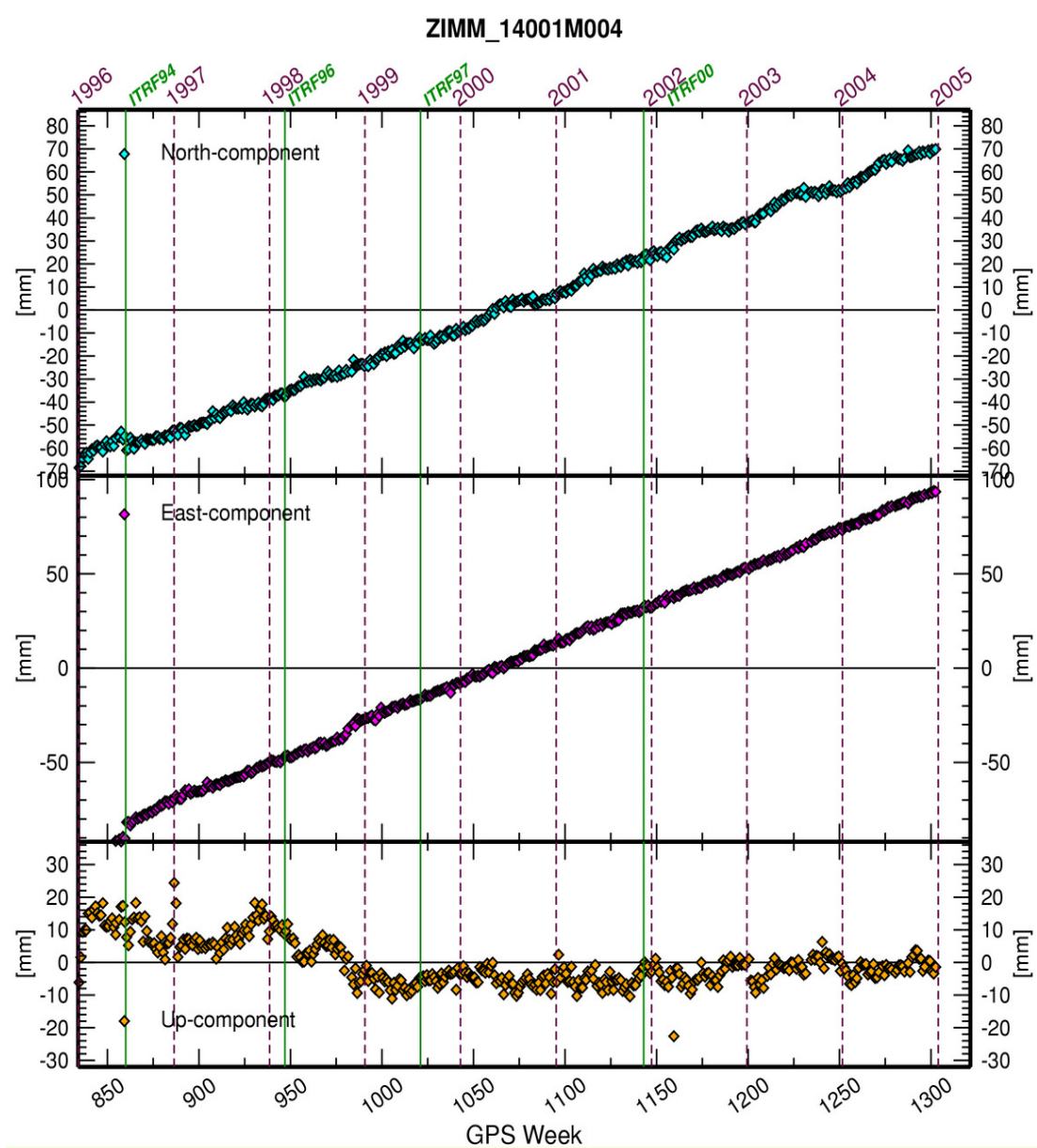
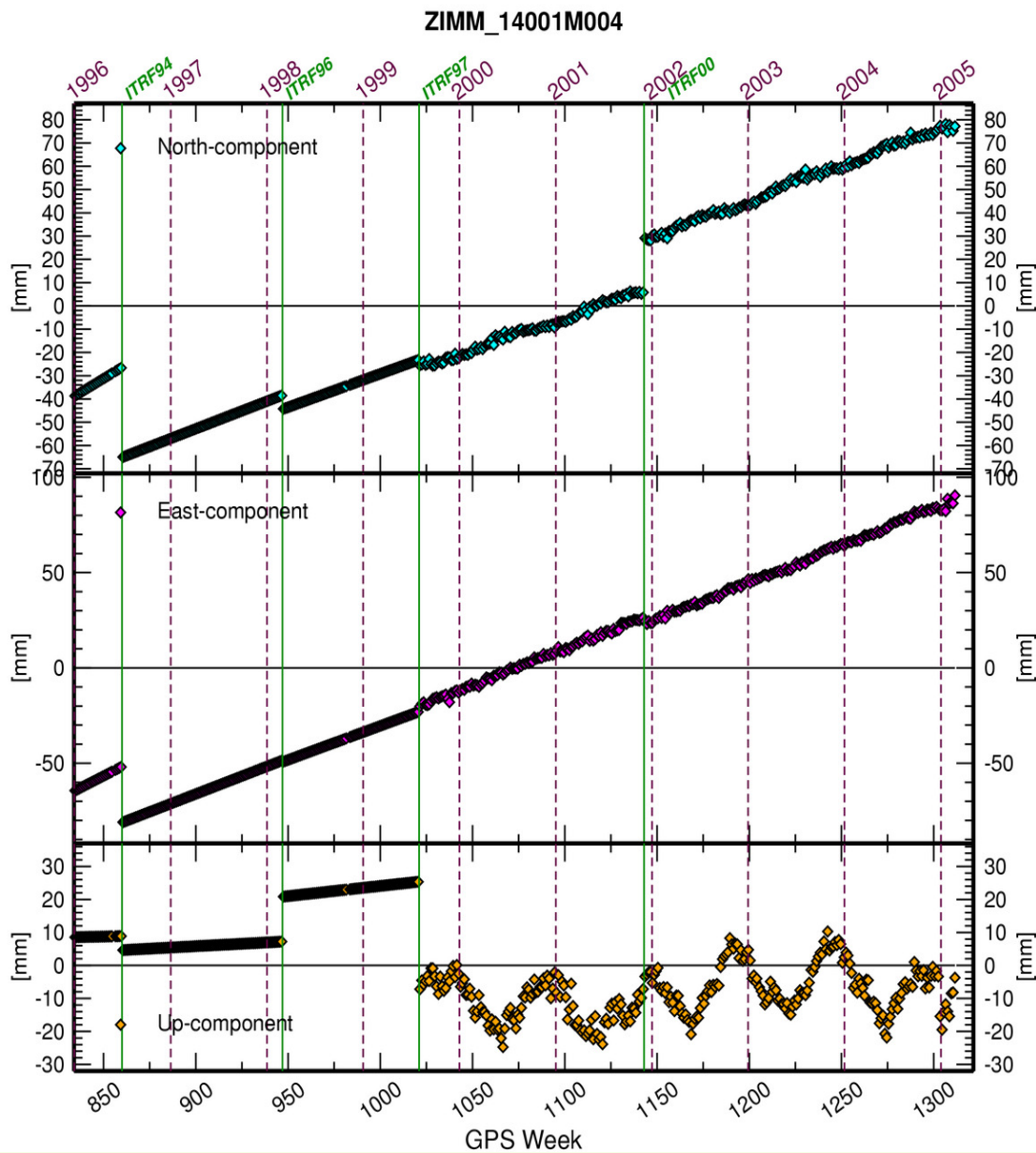
GOPE_11502M002

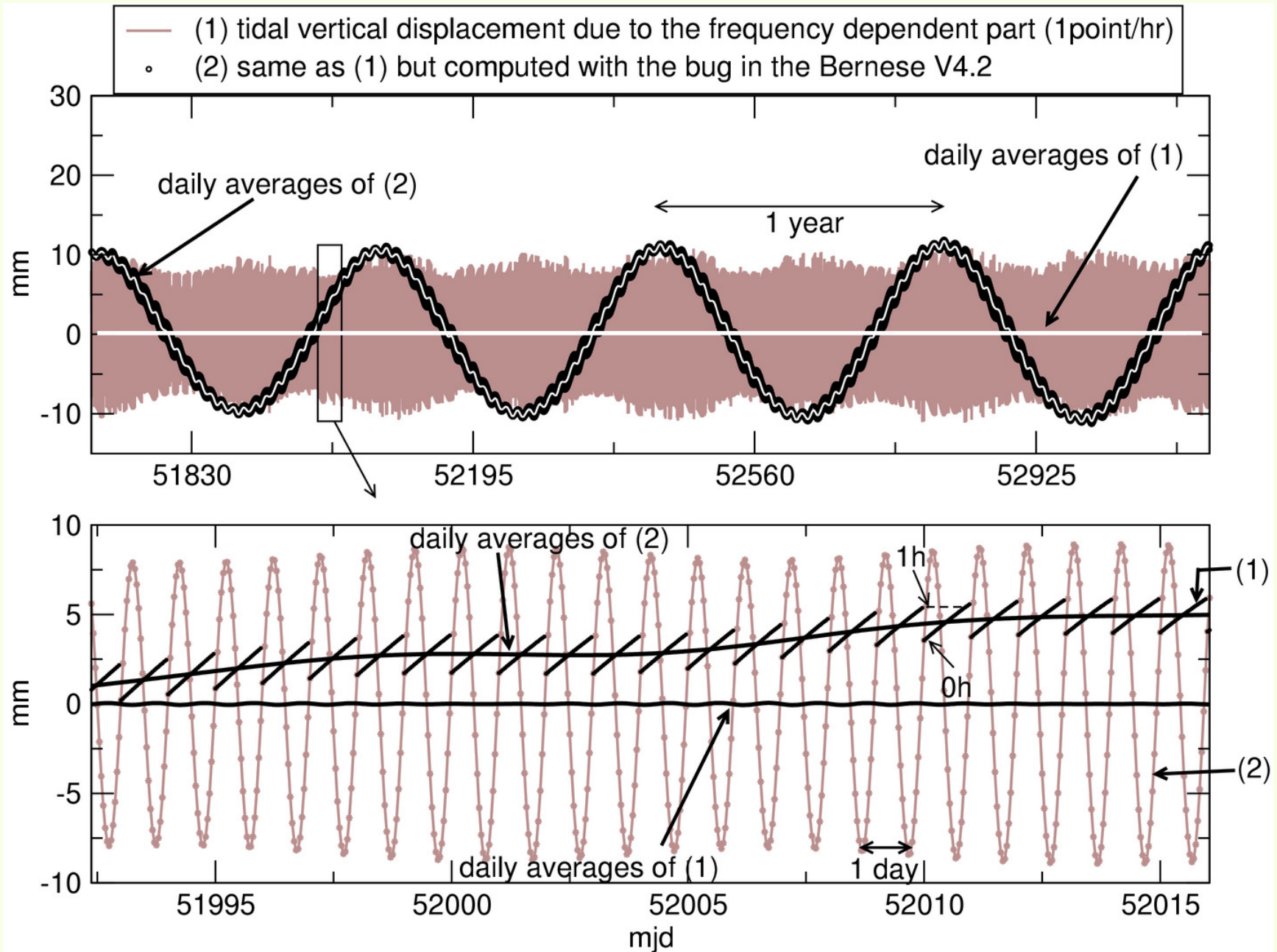


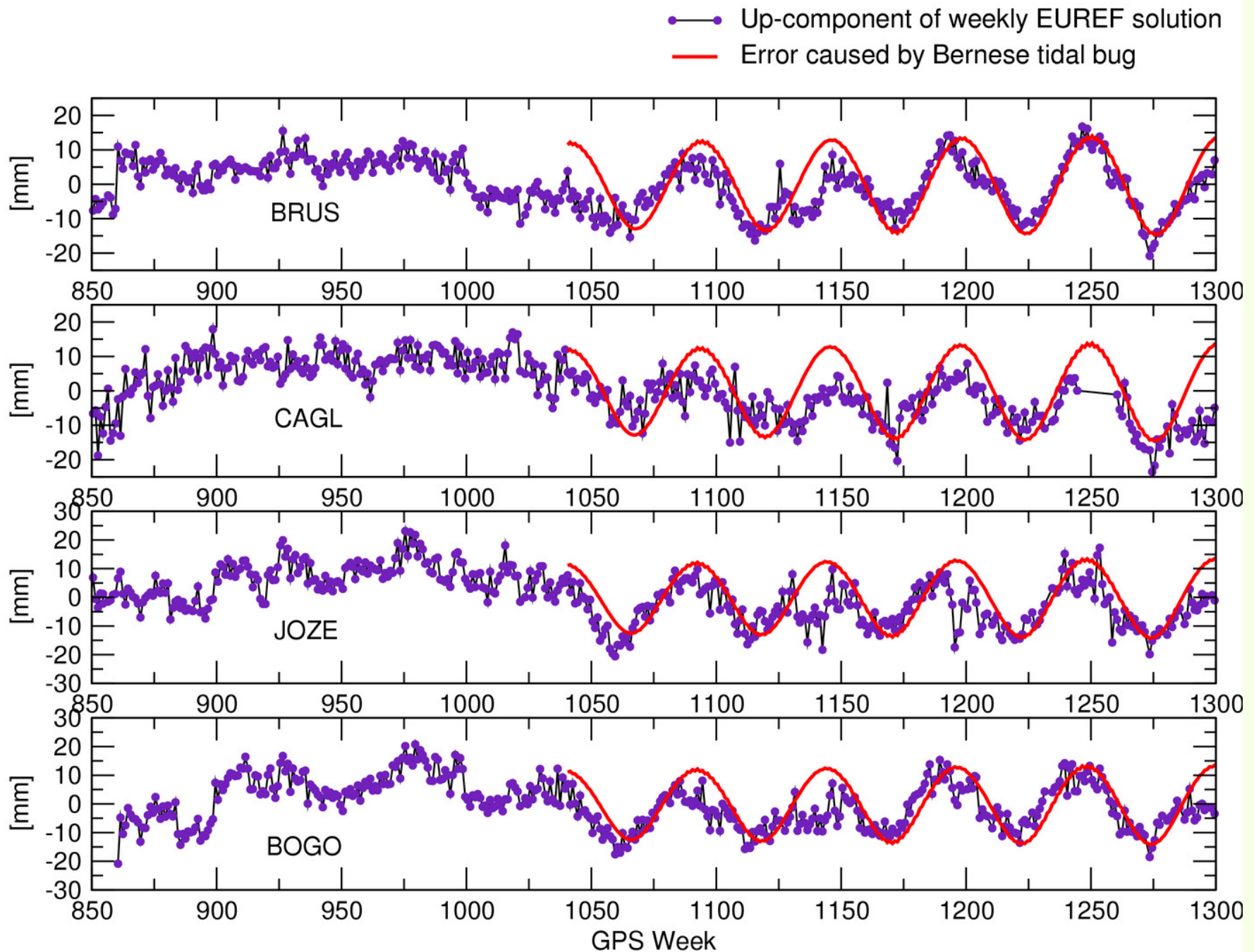
Constraints

Minimum constraints



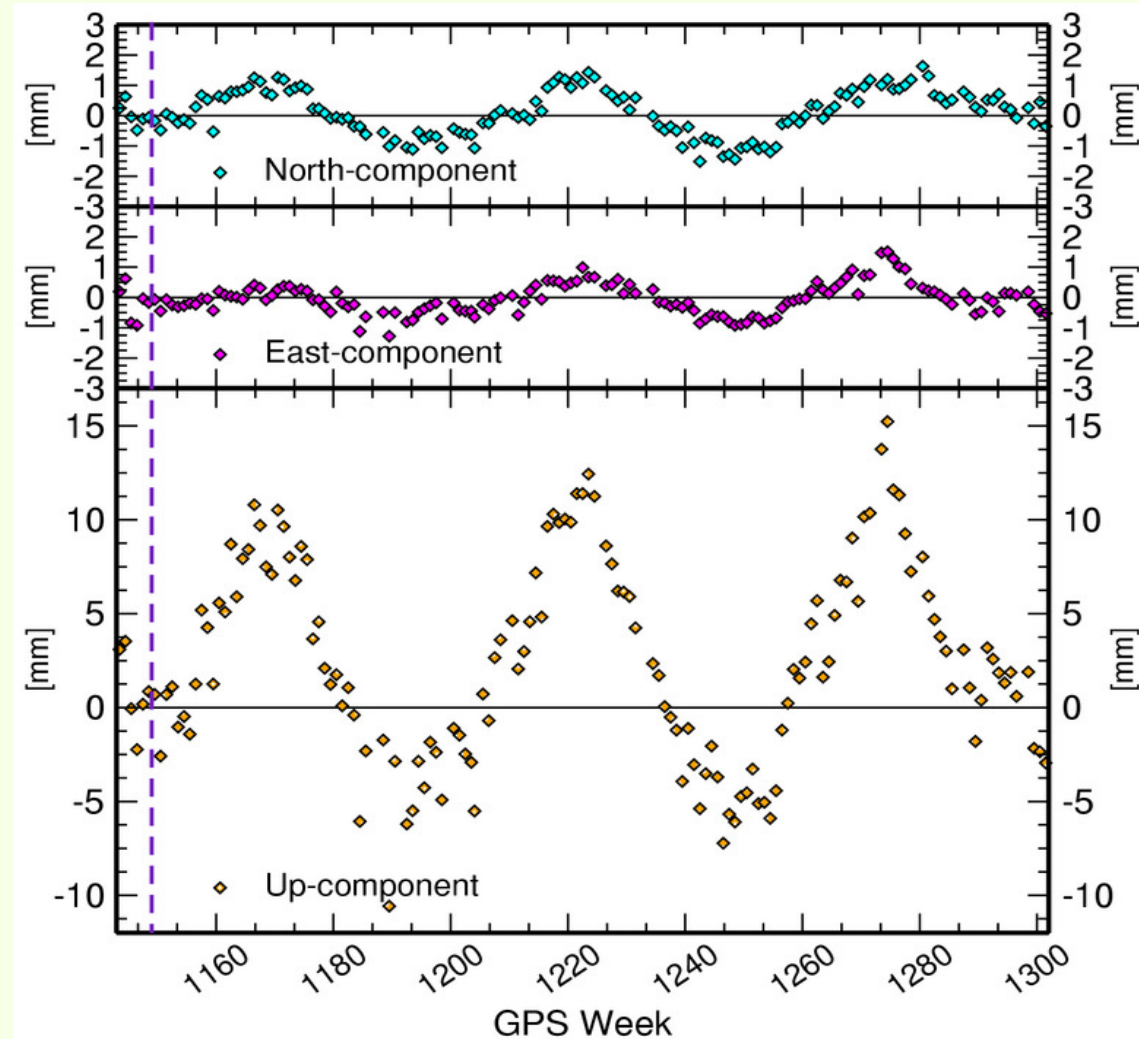




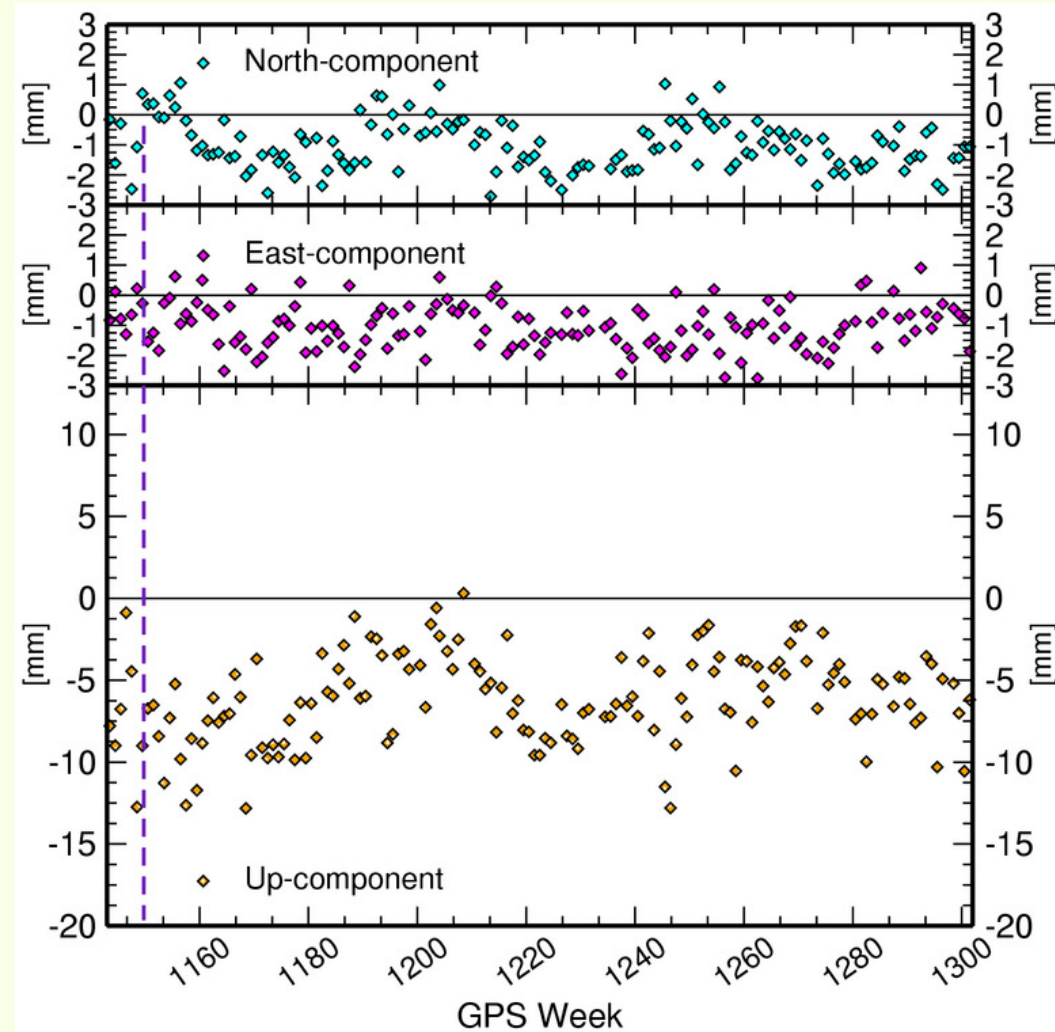


Difference between coordinates from minimally constrained and constrained EUREF solution

BRUS



ONSA



- Weekly EUREF solution degraded since Dec. 1999 due to bug in Bernese (annual period)
- From 14 AC using Bernese, 3 corrected bug in summer 2004
- Annual period is almost gone when
 - Using minimum constraints to tie the solutions to the ITRF because absorbed by Helmert transformation
 - Stacking the weekly normal equation to generate time series
- Consequence: coordinate difference can be expected between constrained EUREF solution and minimally constrained EUREF solution :
 - between -1.5 cm and 1.5 cm in the height
 - few mm horizontallyfor unconstrained stations