Instituto Geográfico Nacional
Ministerio de Fomento

IGE REPORT

Instituto Geográfico Nacional (IGN) - Spain

IGE Local Analysis Centre of EUREF

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4th EUREF LOCAL ANALYSIS CENTRES WORKSHOP – Graz, 18-19 Sept 2003

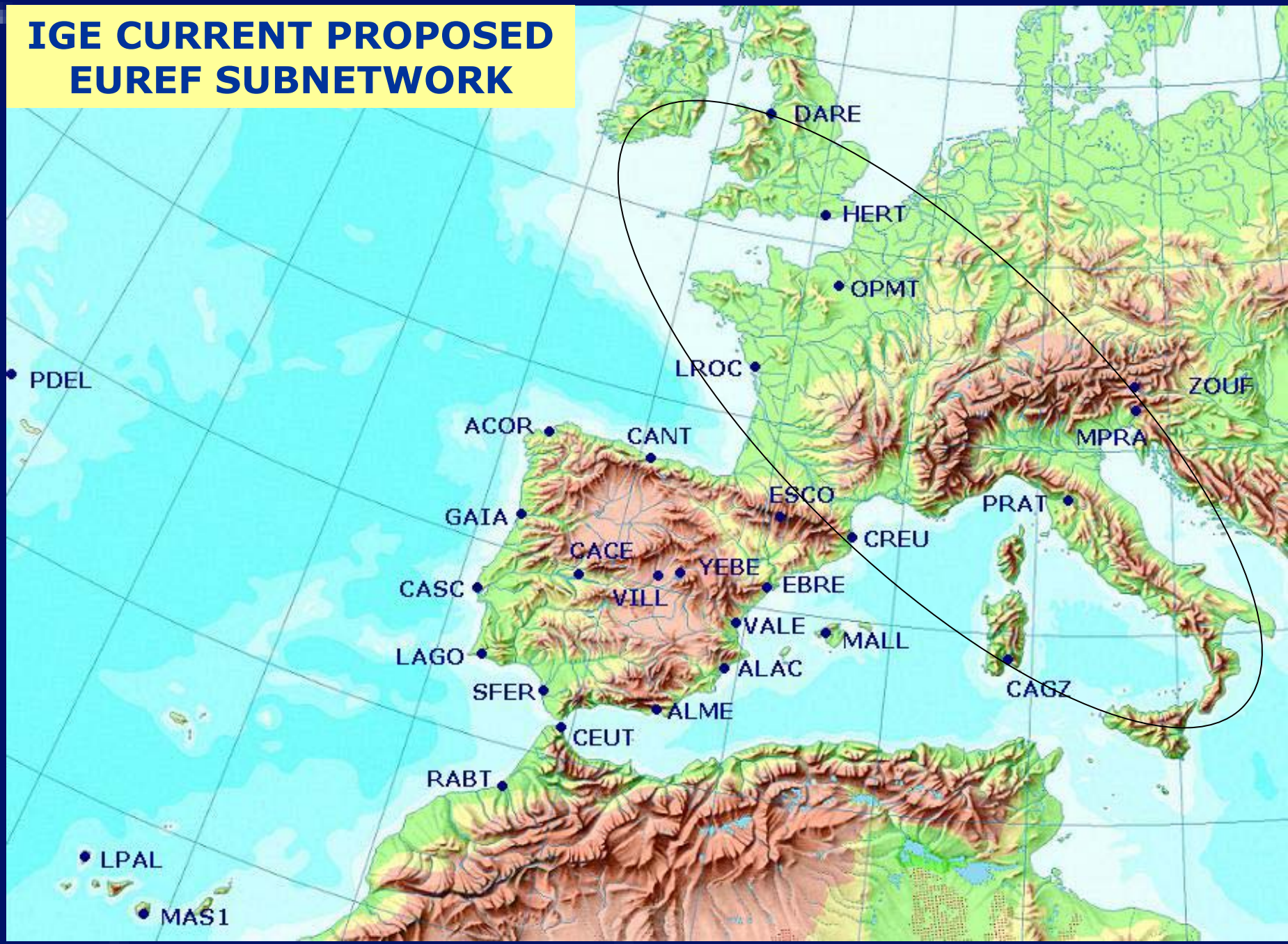
Main activities of IGN in EUREF, 2003

- ✓ Maintenance IGN ERGPS network (16 stations, 10 EUREF, 4 nrt)
  - RF serious problems: ACOR, CANT.
- ✓ Implementation of EUREF IP stations
- ✓ Organization EUREF Symposium (Toledo)
- ✓ Processing networks:
  - EUREF (25 and increasing)
  - HISPANET (29 stations – 6 non EUREF stations)
  - Periodical campaigns
  - Other regional networks for geophysical and geodetic purposes in Spain
  - HISPANET time series obtention

IGE Local Analysis Centre short description

- ✓ Officialy started in Sept 2001 (20 stations)
- ✓ Bernese, BPE 4.2
- ✓ Currently, 29 stations, 25 + 4 proposed (Spain, Portugal, Morocco, France, Italy, GB)
- ✓ Future: new stations in the middle west Europe
- ✓ Change Unix Solaris-> Linux SuSe, 2003 (versatility, economy, efficiency)

IGE CURRENT PROPOSED EUREF SUBNETWORK



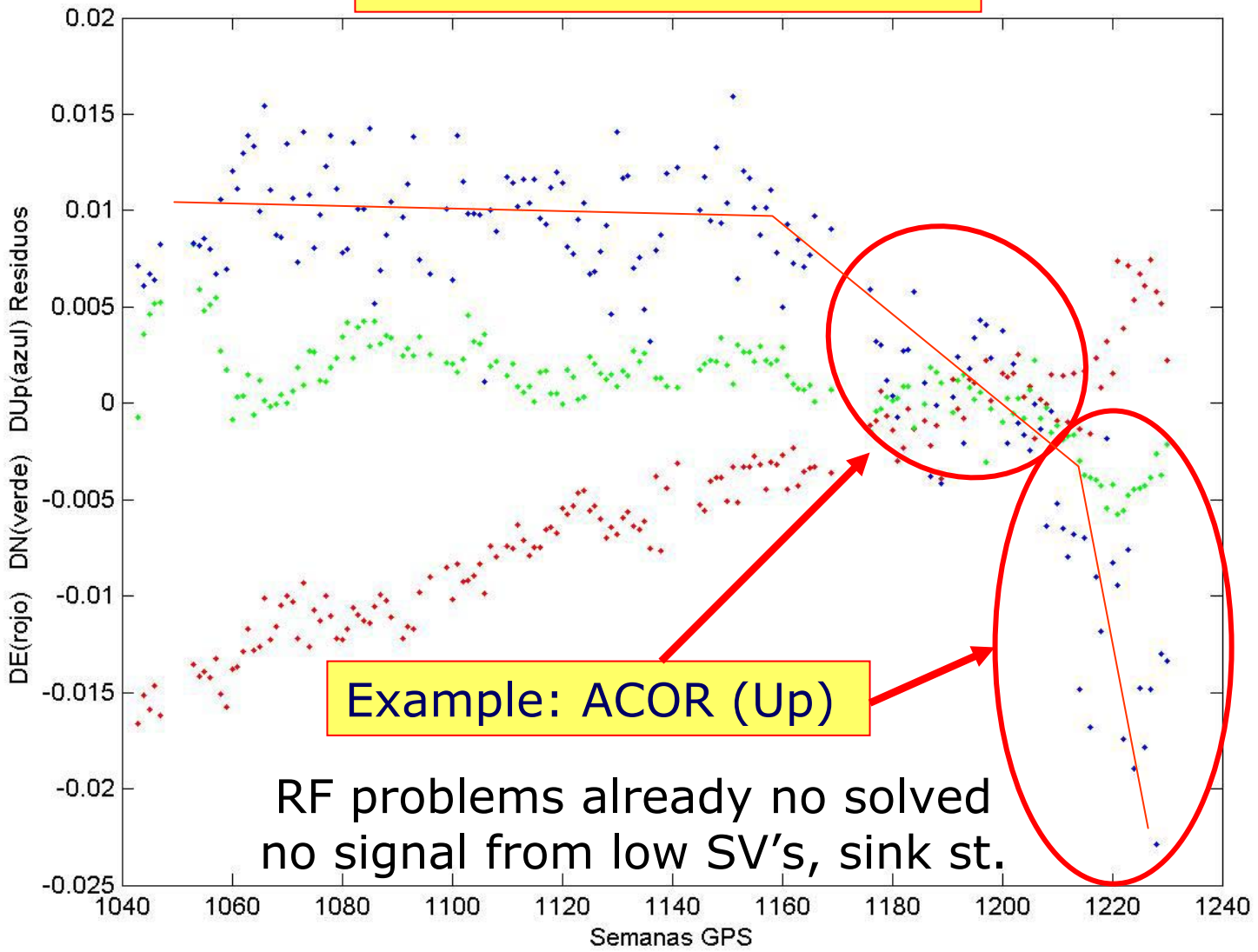
General processing strategy

- ✓ Orbits and ERP's from IGS
- ✓ Solution constrained to YEBE (0.1 mm) – VLBI station
- ✓ Troposphere: final hourly ZTD's estimation, Dry-Niell mapping function
- ✓ Ionosphere: QIF to resolve ambiguities in each baseline and introduced into the final solution
- ✓ DE200 planetary ephemerides, GOT99.2 ocean loading corrections, JGM3 earth potential, IGS PCV's
- ✓ Ambiguity resolution interval: 60 sec, final process: 180 sec.
- ✓ Products: SNX, CRD, ZTD, time series

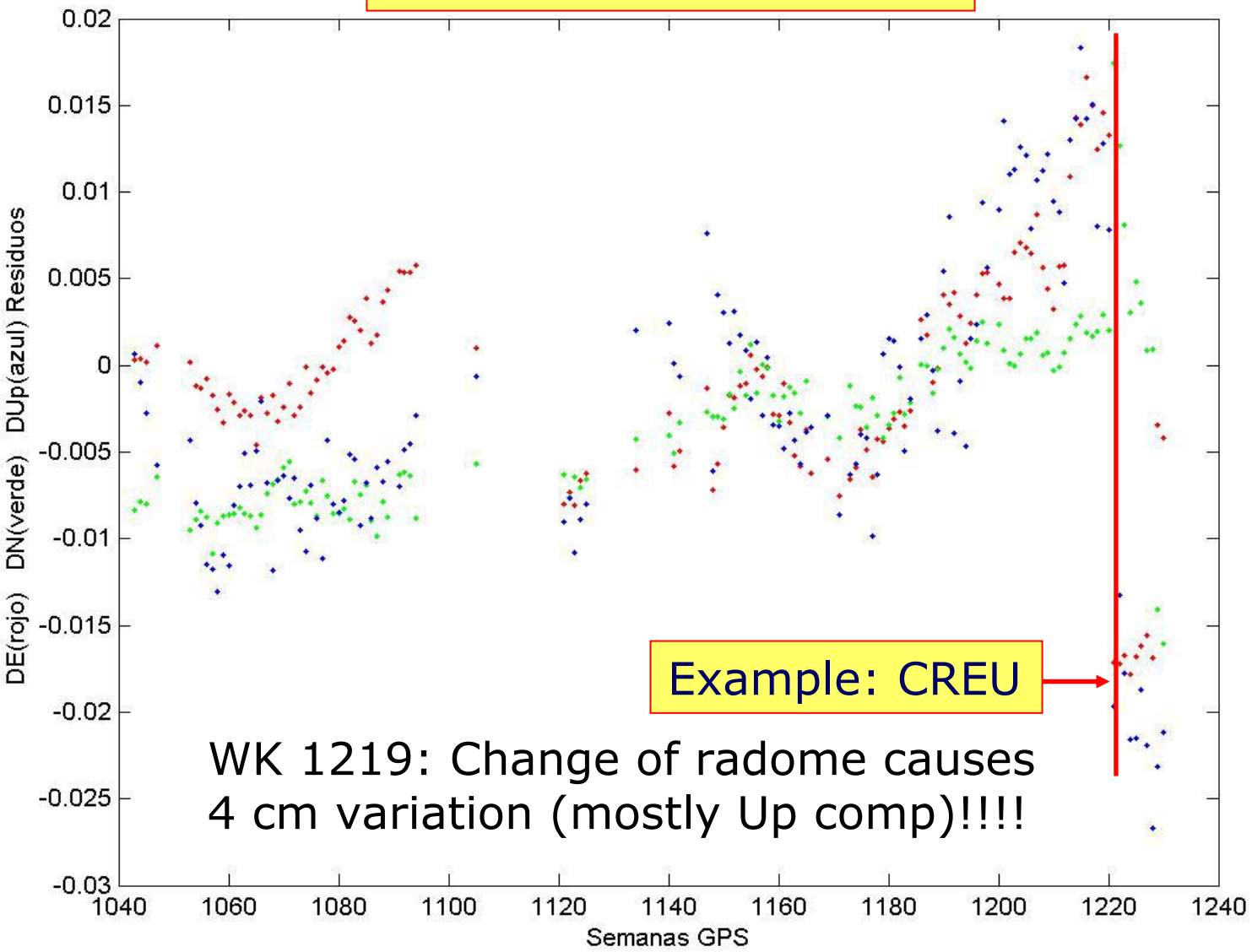
Exclusion criterias:

✓ Automatic detection a priori: size of files	Preprocess
✓ Frequent jumps in the daily file (RABT)	
✓ High rate of ambiguities no solved	Process
✓ Triple differences solution in BPE (MPXTR)	
✓ High standar deviation in SNX file	
✓ High RMS in SUM (>5 mm NE, 10 mm Up, no border stations, long baselines-> Azores, Canary, 1200 km)	
✓ Automatic time series (ITRS, ETRS89, standard Helmert)	Postprocess

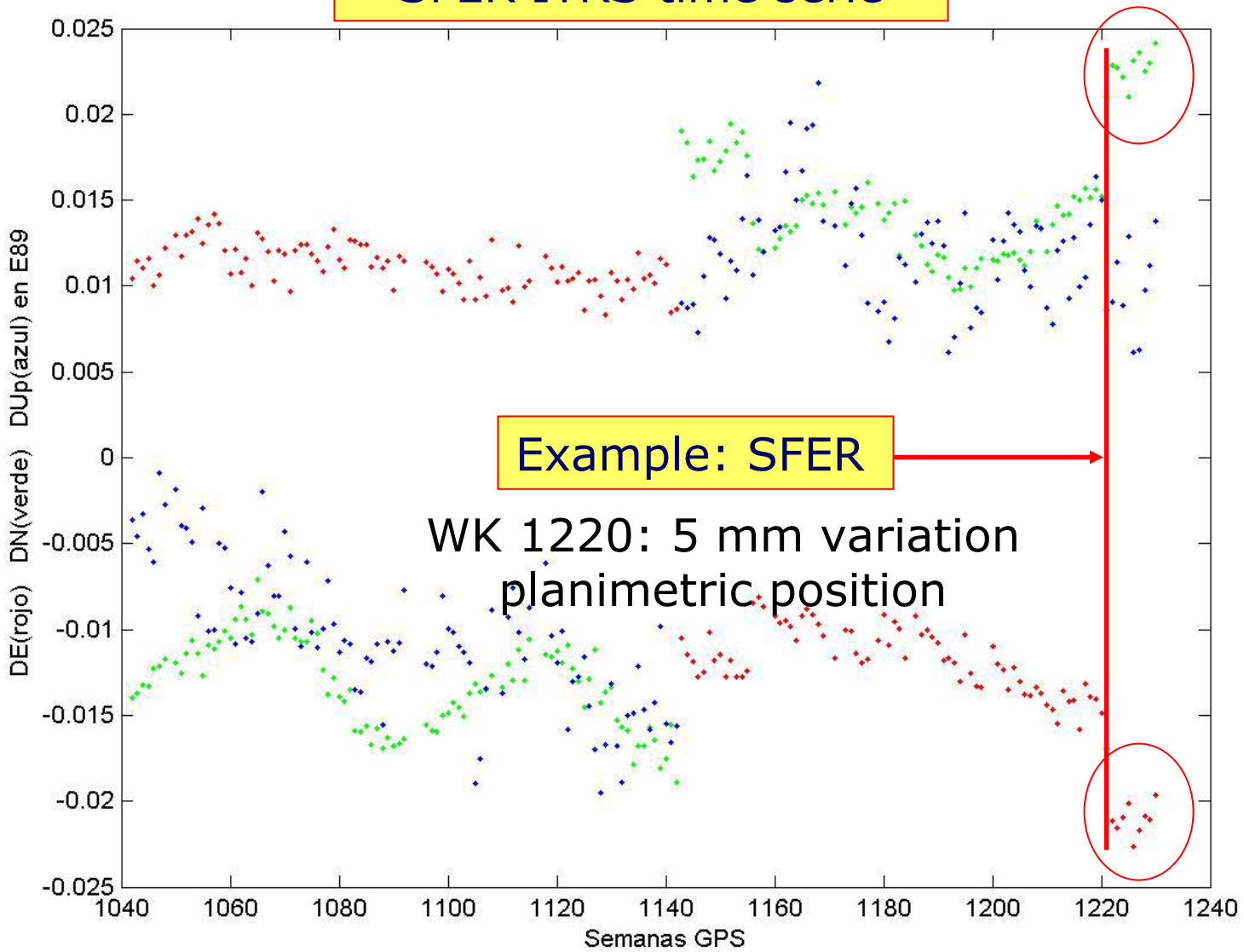
ACOR standar time serie



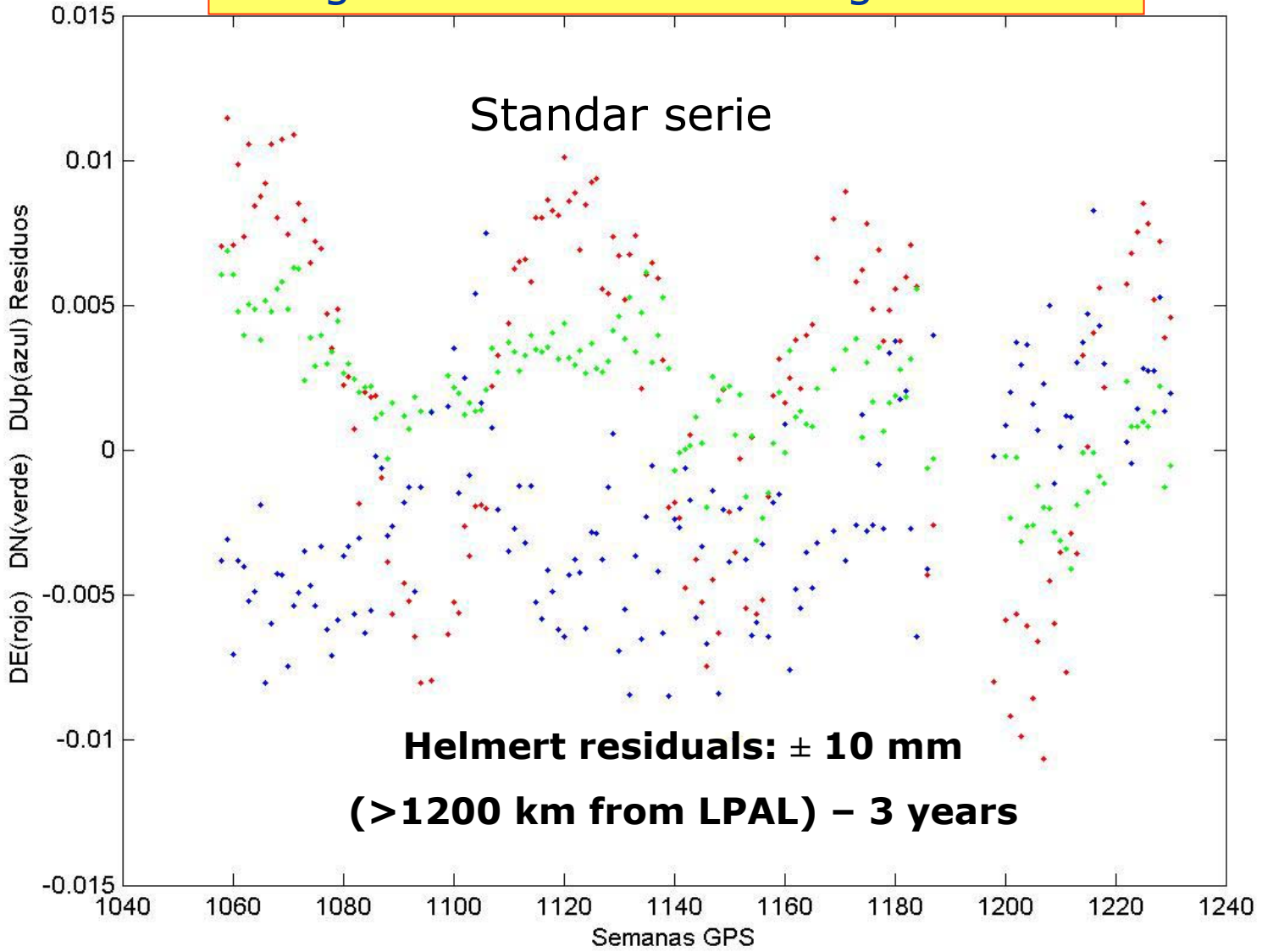
CREU standar time serie



SFER ITRS time serie

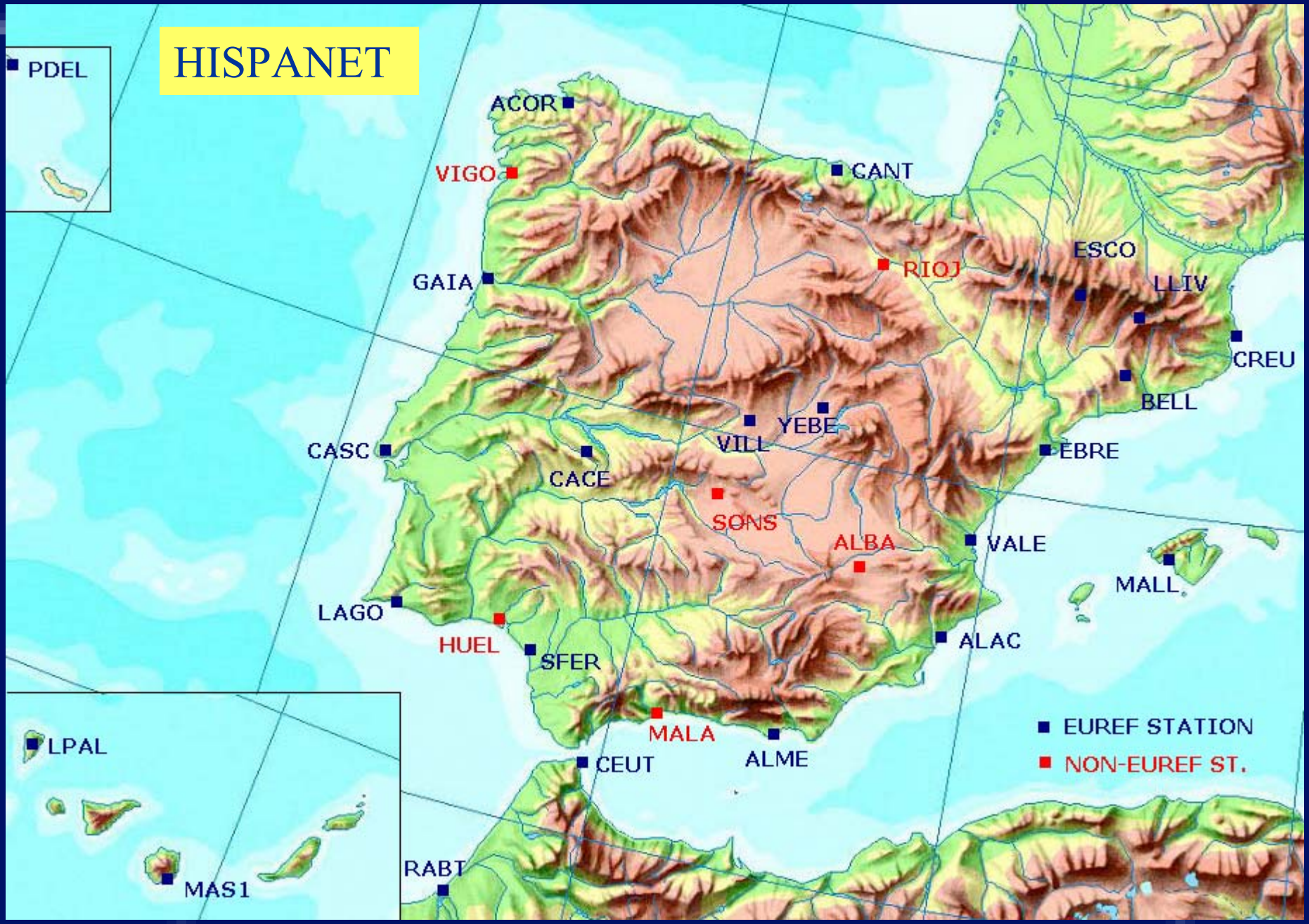


High PDEL Residuals: long baseline

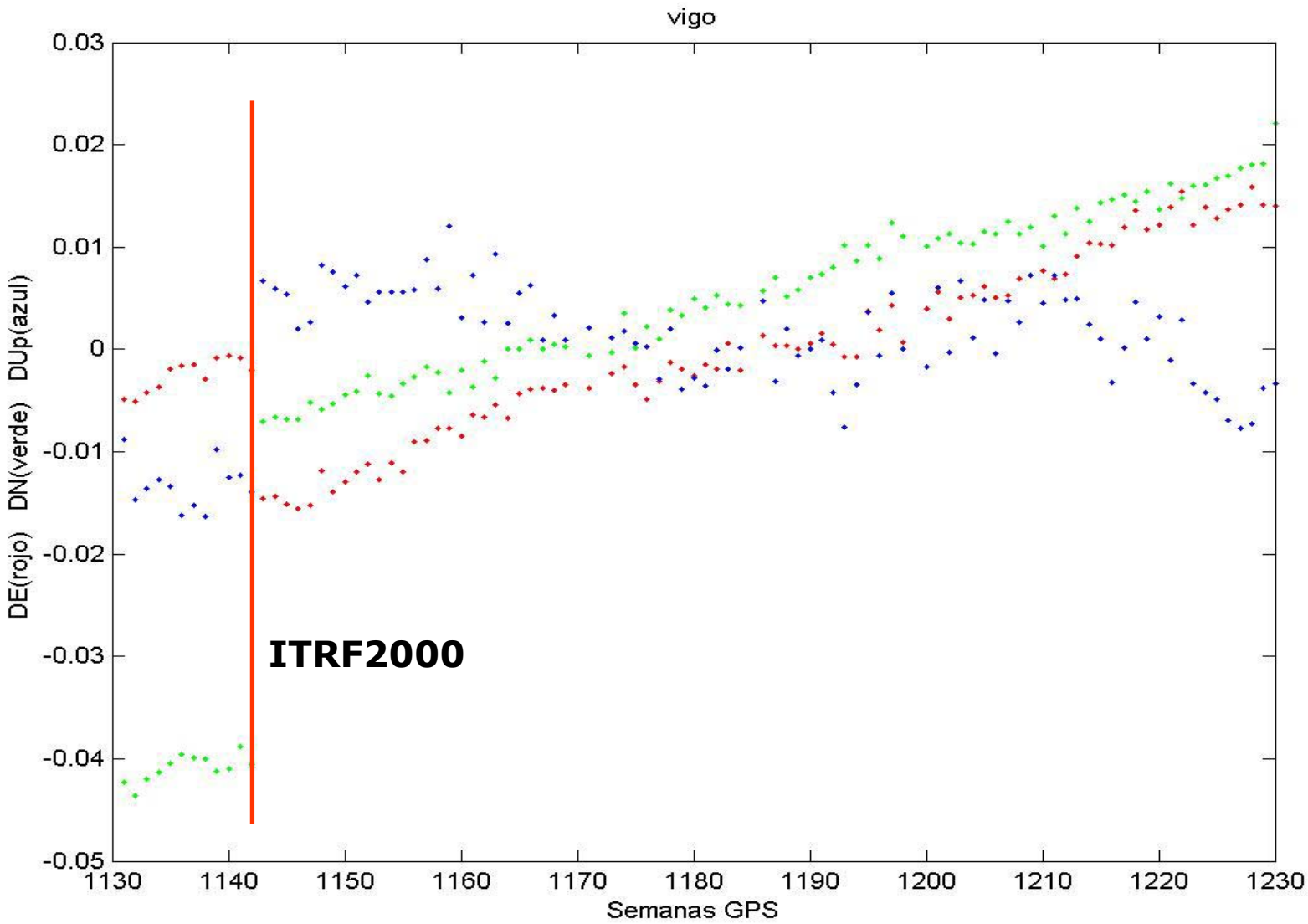


HISPANET processing

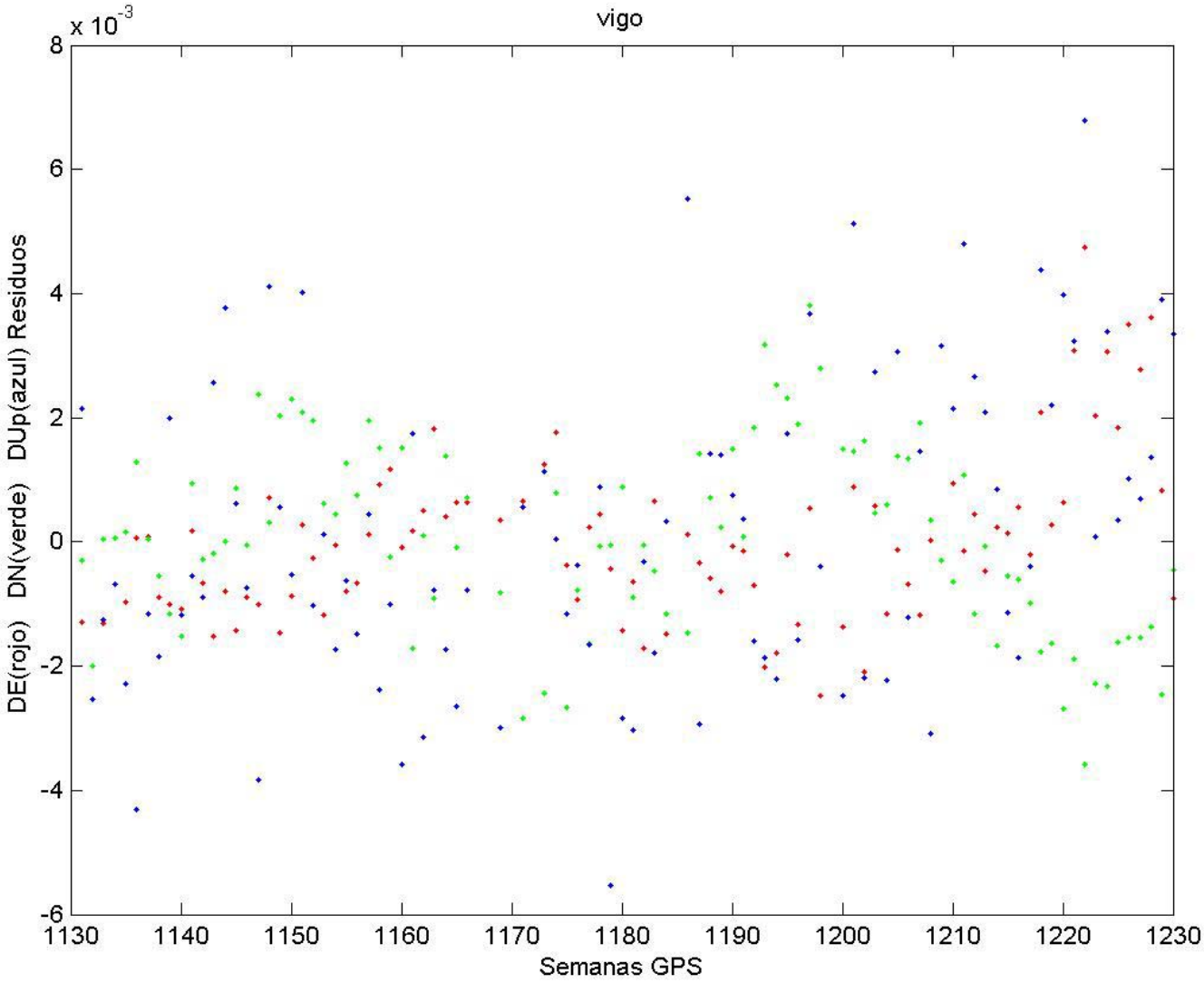
- ✓ Same criterias EUREF subnetwork processing
- ✓ 29 stations in Iberia (6 non EUREF)
- ✓ Since Jan 2000, Wk 1042 (almost 4 years)
- ✓ Automatic time series of the 29 sites:
  - ITRS
  - ETRS89
  - Standar (Helmert)
- ✓ 85% Helmert residuals < 4 mm
- ✓ Non EUREF stations data available:
  ftp://193.144.251.14/ERGPS


HISPANET
PDEL
ACOR
VIGO
CANT
ESCO
RIOJ
GAIA
LLIV
CREU
BELL
YEBE
VILL
CASC
EBRE
CACE
SONS
ALBA
VALE
MALL
LAGO
HUEL
ALAC
SFER
MALA
ALME
CEUT
LPAL
MAS1
RABT
EUREF STATION
NON-EUREF ST.

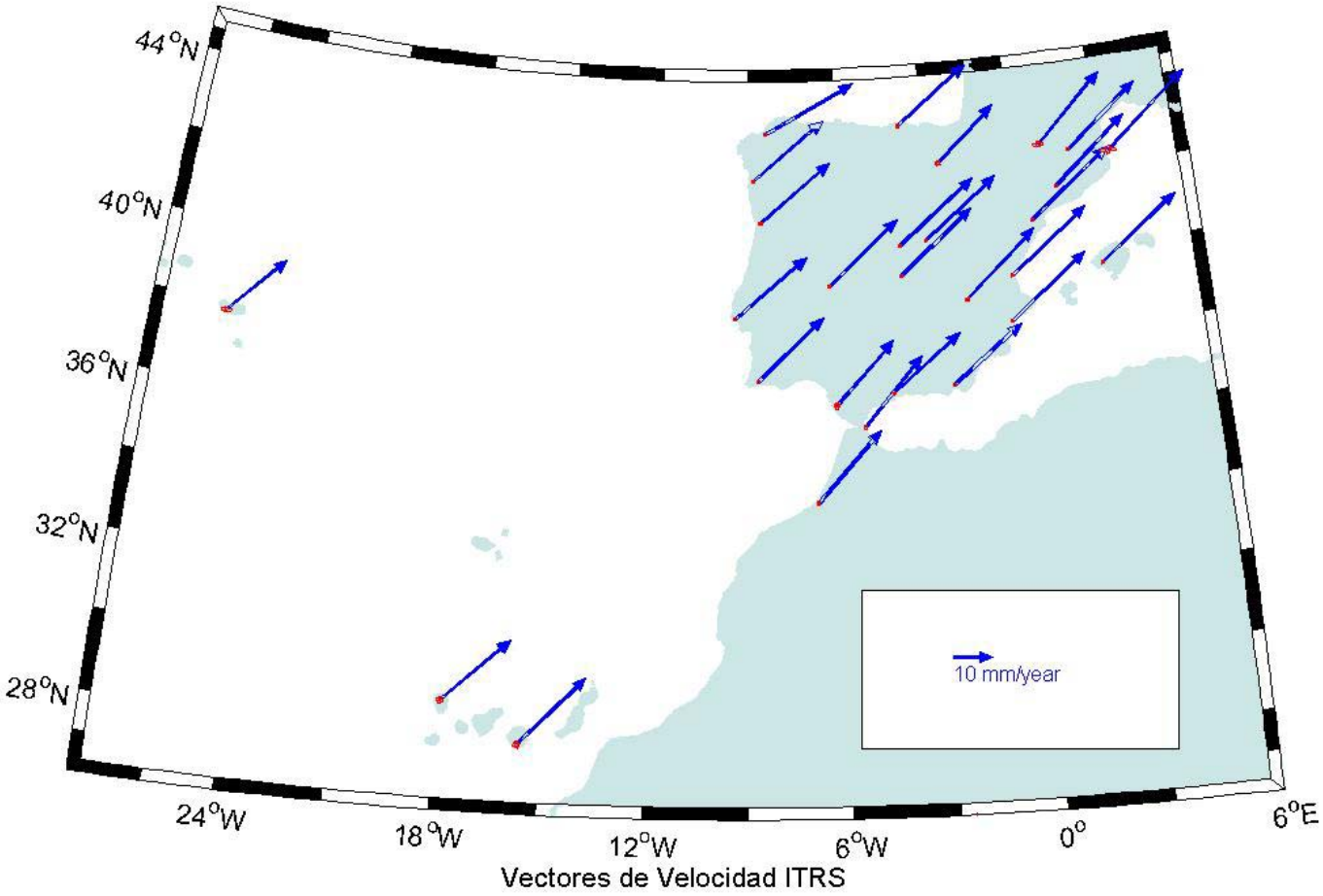
VIGO ITRS serie (non EUREF station)



VIGO Residuals (< 4 mm)

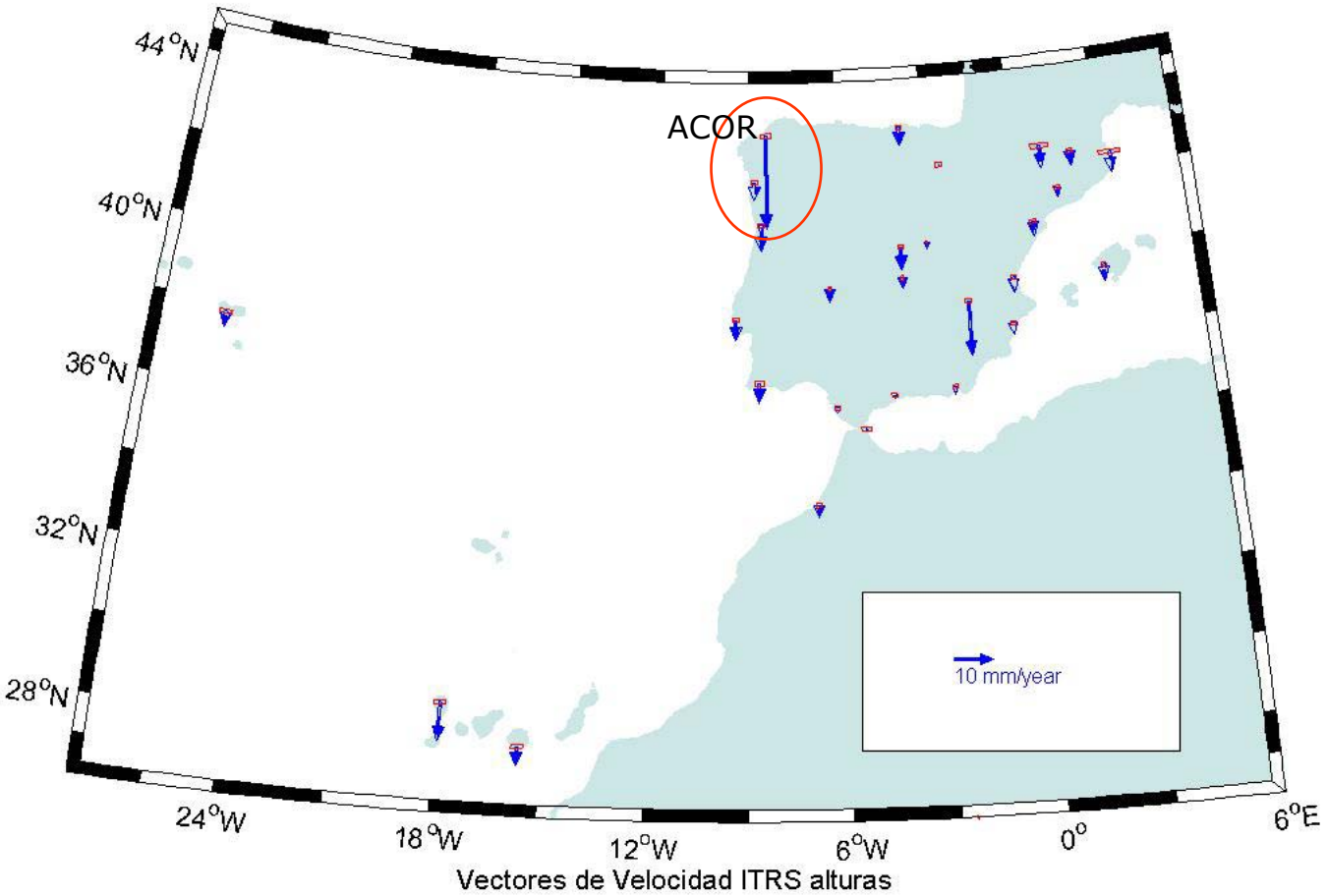


HISPANET – Provisional ITRS Velocities



1142 – 1230 Wk

HISPANET – Provisional ITRS Velocities (Up)



1142 – 1230 Wk

Present work and future purposes

- ✓ Estimation of improved time series -> geodinamic
- ✓ Kinematic series interpretation: singular points, noise vs. field velocities
- ✓ Increase the number of stations EUREF (W Europe)
- ✓ " " " HISPANET from other institutions in Spain
- ✓ Absolutely openned to colaborate in other projects (real time, time series)
- ✓ Automatic detection of suspicious stations -> remove -> processing ->automatic validation of solutions
- ✓ Automatic Web publication of time series
- ✓ First tests with GAMIT