

# **ASI**

# **Local Analysis Center Report**

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## Using IGS FINAL products:

ASI weekly products:     **ASIweek7.SNX**  
                                  **ASIweek7.SUM**

*generally delivered within 1 week from IGS products publication*

ASI daily products:       **ASIweekd.SNX**  
                                  **ASIweekd.TRO**

*generally delivered within 1 week from IGS products publication*

## Using IGS RAPID products:

ASI daily products:       **ASIweekd.SNX**

*generally delivered within 6 hours from IGS products publication*

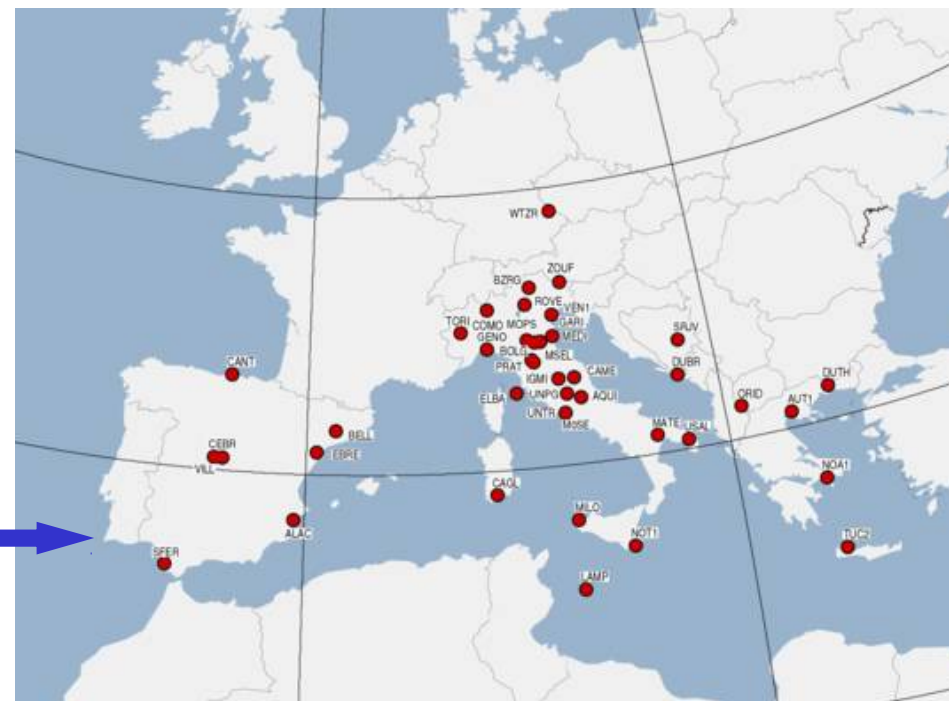
## Using IGS ULTRA RAPID products:

ASI hourly products:     **ASIweekd\_hh.SNX**

*generally delivered within 1 hour from data publication*

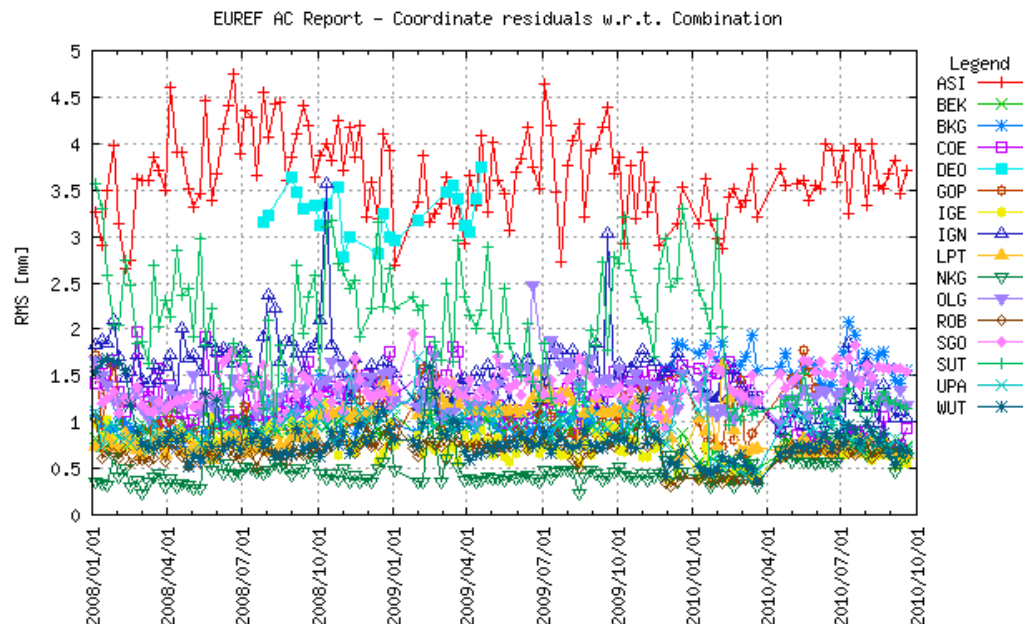
- September 1996 ASI Final solutions combined into EUREF Final weekly solution.
- March 2007 ASI Rapid solutions combined into EUREF Rapid daily solution.
- September 2007 ASI hourly solutions combined into EUREF hourly solution.

	Final	Rapid	NRT
S/W	MicroCosm 2009.0	MicroCosm 2009.0	GIPSY-OASIS II 5.0
Analysis Strategy	network	network	network
Set-up	EUREF recommendations applied	EUREF recommendations applied	EUREF recommendations applied
File RNX	daily	daily	hourly
IGS Products	final	rapid	ultra-rapid
Update	weekly	daily	hourly



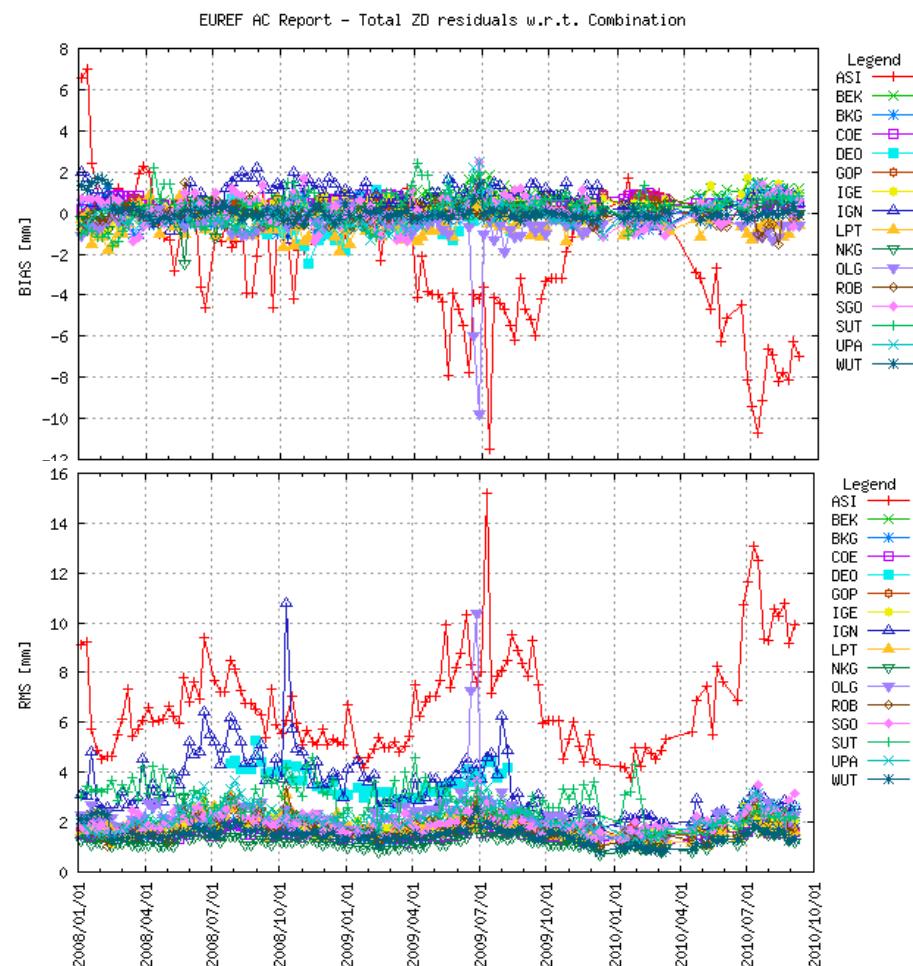
## ASI EUREF sub network

- 41 stations
- 5 (cebr, duth, ven1, gari, usal) added during the last 2 years
- came inactive



Weekly RMS of each LACs' SSC solution w.r.t the combined one, as reported into the weekly combination report.

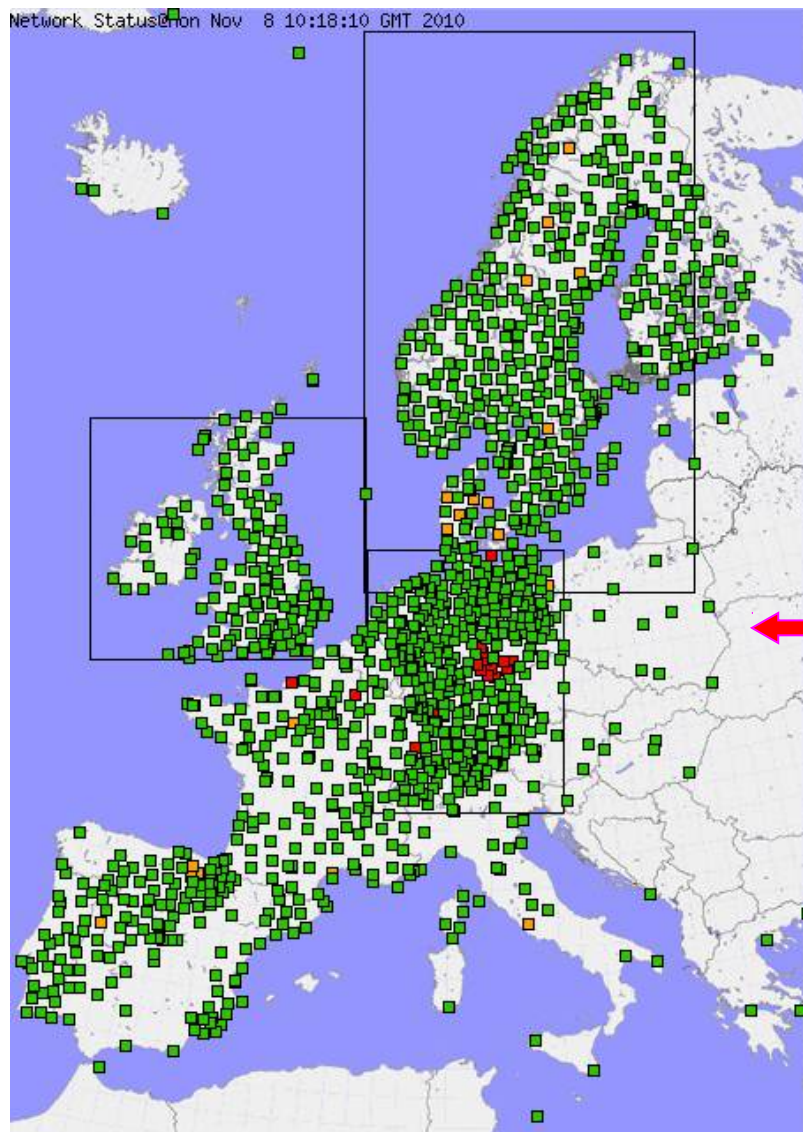
Weekly BIAS/RMS of each LACs' tropospheric solution w.r.t the combined one, as reported into the weekly combination report



# ASI activities beyond EUREF: NRT ZTD Combination (1/3)



NRT ZTD Combined product available @ Meto Database



**E-GVAP**

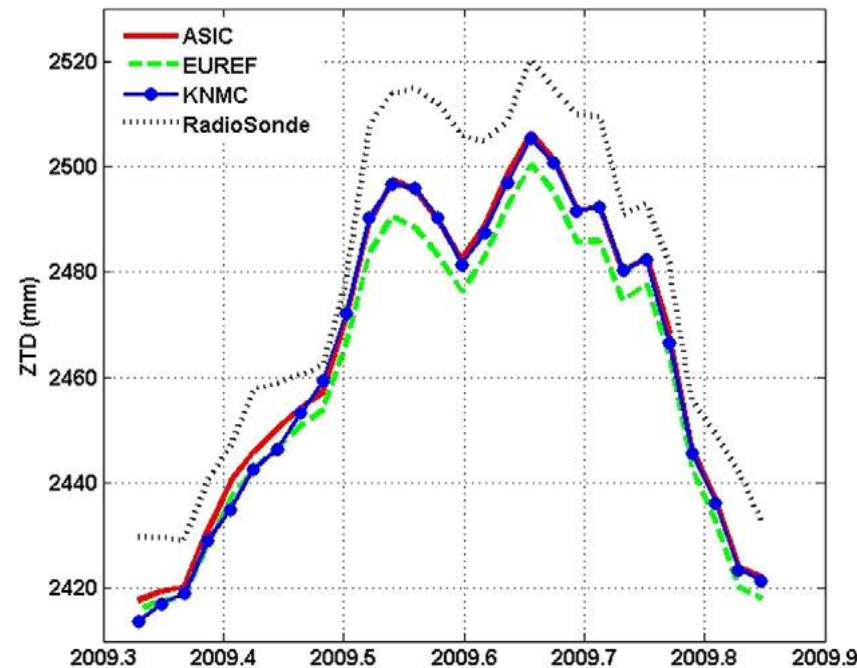
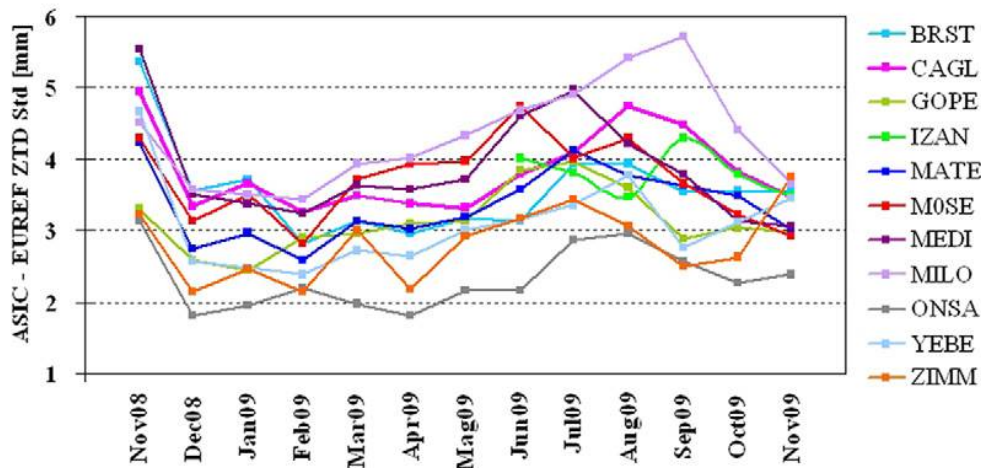
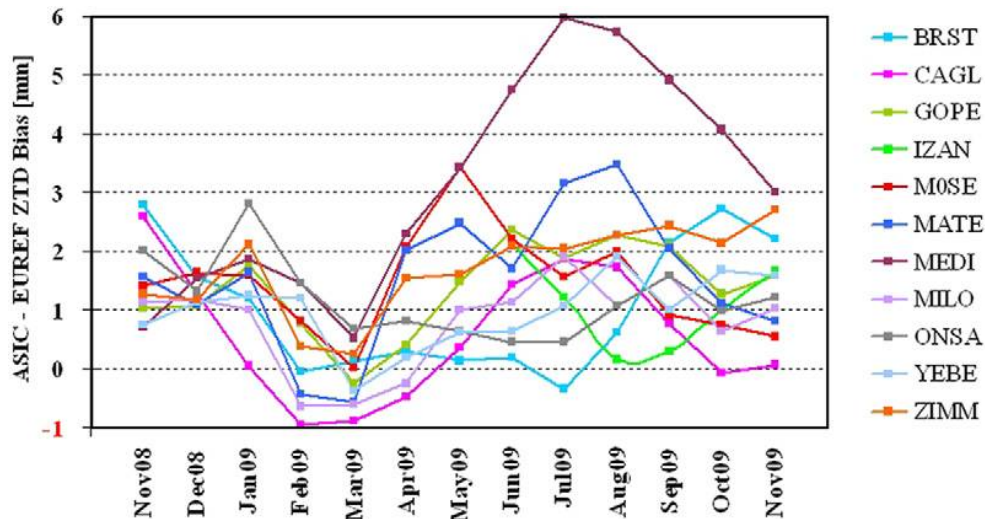
**Network:**

**Operational**

**ASI Combined**



# ASI activities beyond EUREF: NRT ZTD Combination (2/3)



**MEDI ZTD Time series  
April - October 2009**

All the combined (ASIC, KNMC and EUREF) GNSS solutions take smaller values than the radiosonde during the whole period.

*“Combination methods of tropospheric time series”*, R. Pacione, B. Pace, H. Vedel, S. de Haan, R. Lanotte and F. Vespe, *Advances in Space Research*, in Press.

# ASI activities beyond EUREF: NRT ZTD Combination (3/3)

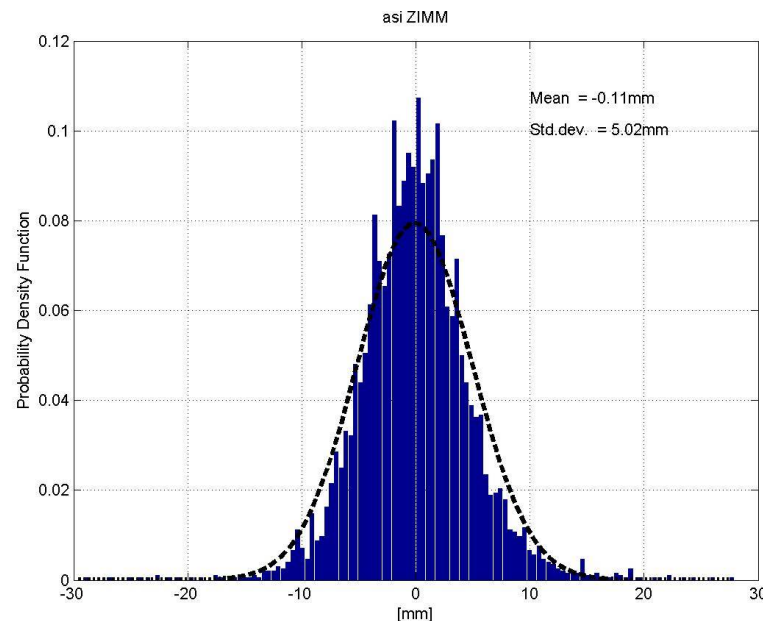
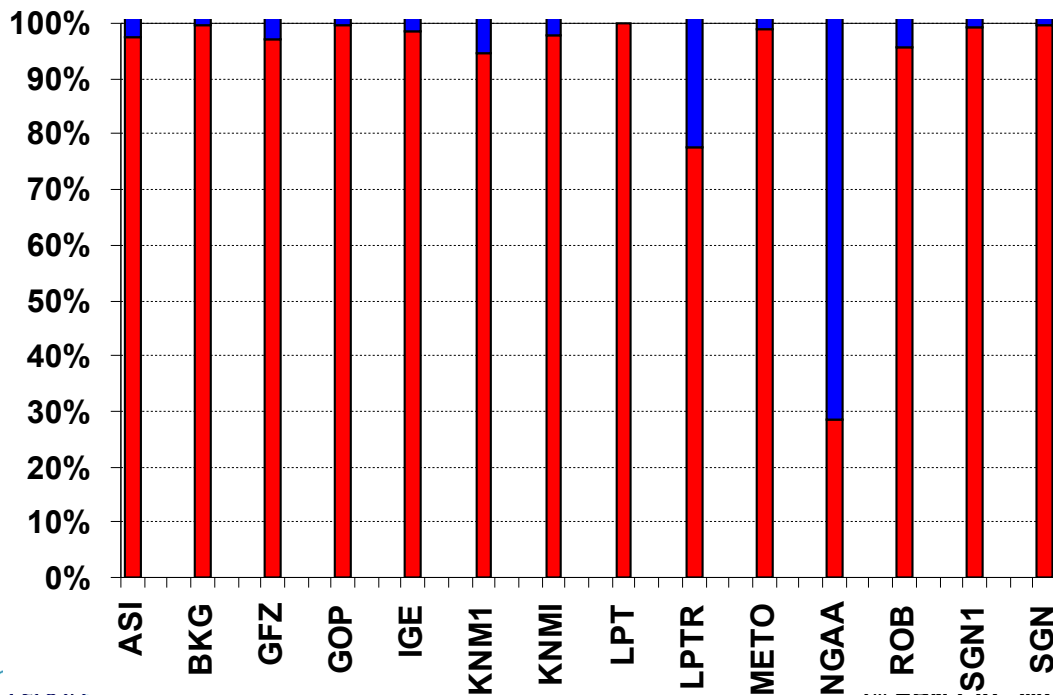


The combined solution is used for Active Quality Control. Warning messages are automatically generated every hour and uploaded on Meto Database. For each AC, the site is flagged if it does not pass the QC test based on:

$$-15\text{mm} < (\text{combi} - \text{estimates}) < 15\text{mm}.$$

All Super Sites

RED=ok BLUE= NOT OK

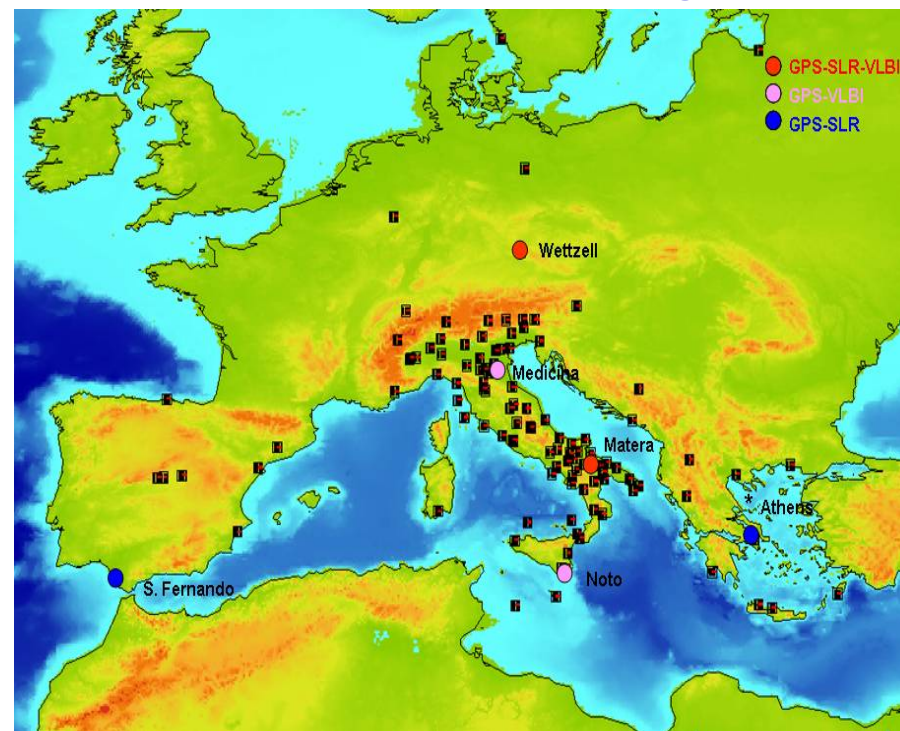


The **ASIMed solution** is a multi-technique crustal velocity field, covering mainly the Central Mediterranean area. It is derived from three independent space geodetic solutions (GPS, SLR and VLBI) delivered at ASI/CGS merged into a common reference frame.

It includes the Italian ASI GPS Fiducial Network, many Italian permanent GPS sites, several EPN GPS stations and the European SLR and VLBI fundamental sites.

The **ASIMed solution** is regularly issued at least **once per year**.

## *Mediterranean Coverage*

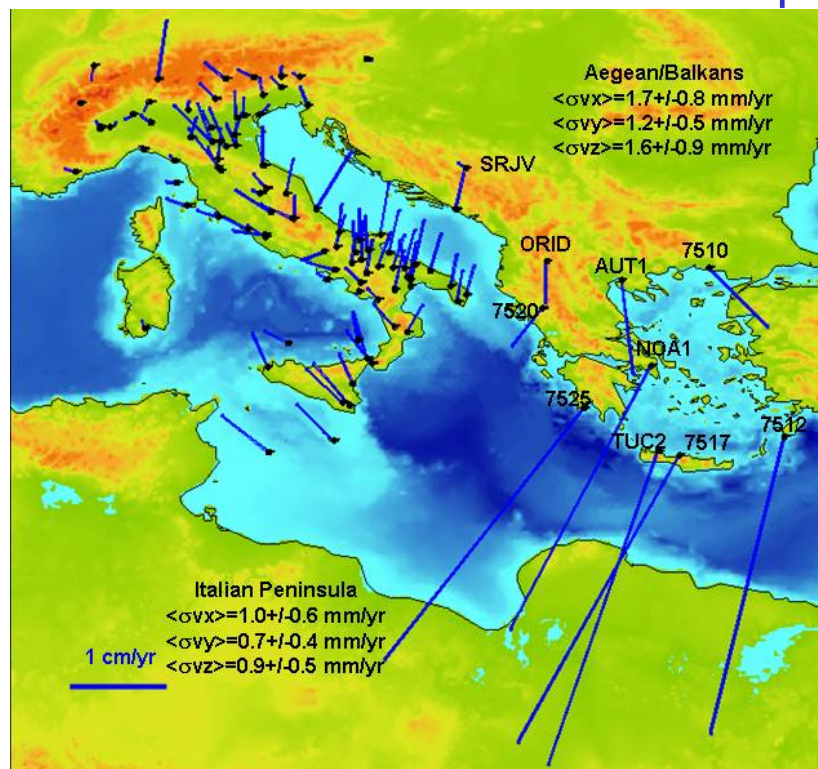


It is available @ [http://geodaf.mt.asi.it/html\\_old/ASIMed/ASIMed\\_06.html](http://geodaf.mt.asi.it/html_old/ASIMed/ASIMed_06.html)

Details in “Velocity field in the Mediterranean area from ASI-CGS GPS, SLR and VLBI solutions: the **ASIMed solution**”, C. Sciarretta et al., WEGENER 2010.

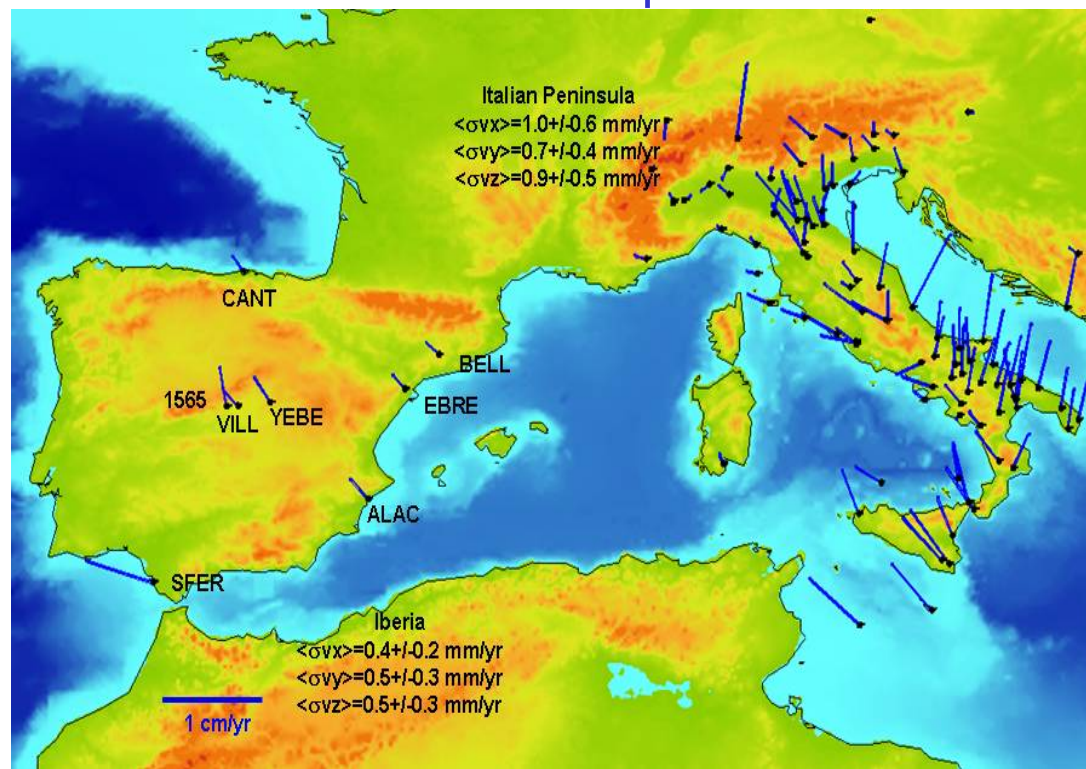


## Residual velocities with respect to the modeled central Europe motion



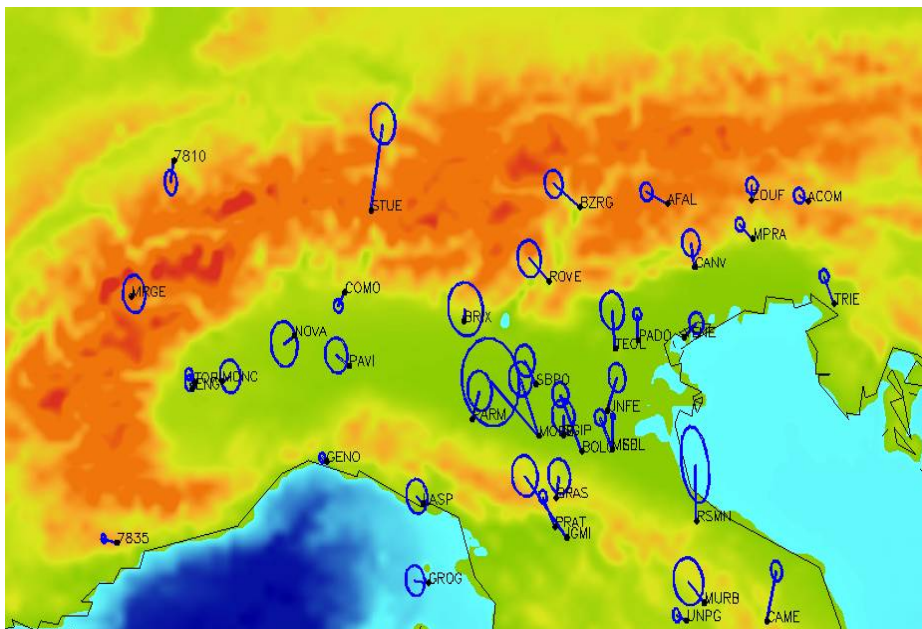
**Eastern Mediterranean**

The Aegean area shows the largest residual motions w.r.t. Eurasian plate of the area under investigation, in agreement with geological model which predict an ongoing spreading of the Aegean sea over the African plate.



**Western Mediterranean**

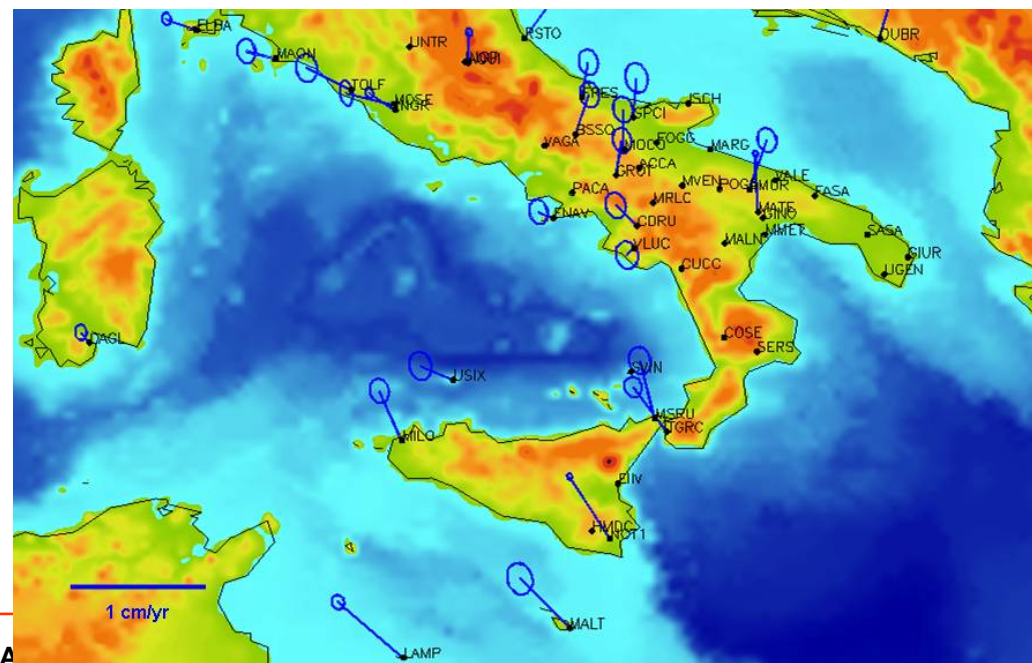
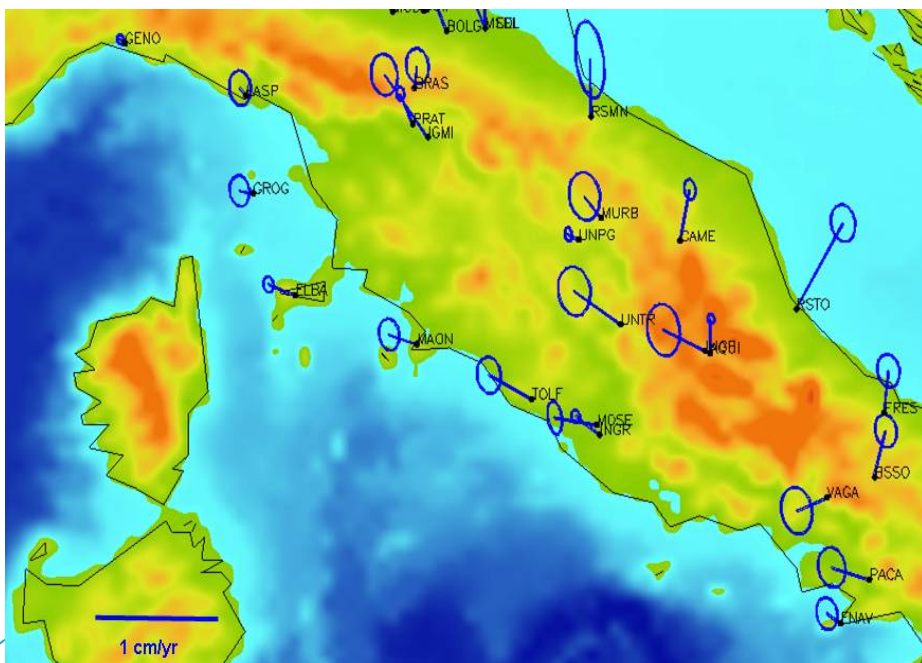
Residual motions w.r.t. Eurasian plate seem generally really small in the Iberian Peninsula. The residuals show a small rigid clockwise rotation, probably due to the reference Eulerian pole which has been derived from Central European sites only, and also to a larger motion in the southern region.



**North Italy:** no significant residual motion w.r.t. Eurasian plate along the Alps chain; small residual motions arise along the Northern Apennines and on the nearby Po valley.

**Central Italy:** different velocity patterns discriminated by the Apennines axis: westwards residuals in the Tirrenian area, north-eastwards residuals in the Adriatic area.

**South Italy:** large residual motions w.r.t. Eurasian plate. CAGL, on the Sardinian block, confirms its stability; Sicily and Lampedusa stations show a residual motion close to African one; MATE, on the Apulian platform, shows a motion with different direction w.r.t. the African one.



We are working on a new release of ASI products for EUREF.

Tests are running in cooperation with the EPN Analysis Coordinator and the chair of the tropospheric working group.

## *Acknowledgments*

- All E-GVAP ACs are acknowledged for providing the NRT ZTD data used in the combined products, and all the GNSS site owners for providing raw data for processing by the ACs.
- ILRS, IVS, IGS and EUREF are acknowledged for the availability of data used in the ASIMed Solution.
- H.Habrich (BKG) and W. Soehne (BKG) are acknowledged for their work in the validation process of the ASI products.