

EPN Time Series Analysis SP

Status report

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UPGRADES I.

- **SW TOOL for cumulative solution:**

BERNESE 4.2  **CATREF**

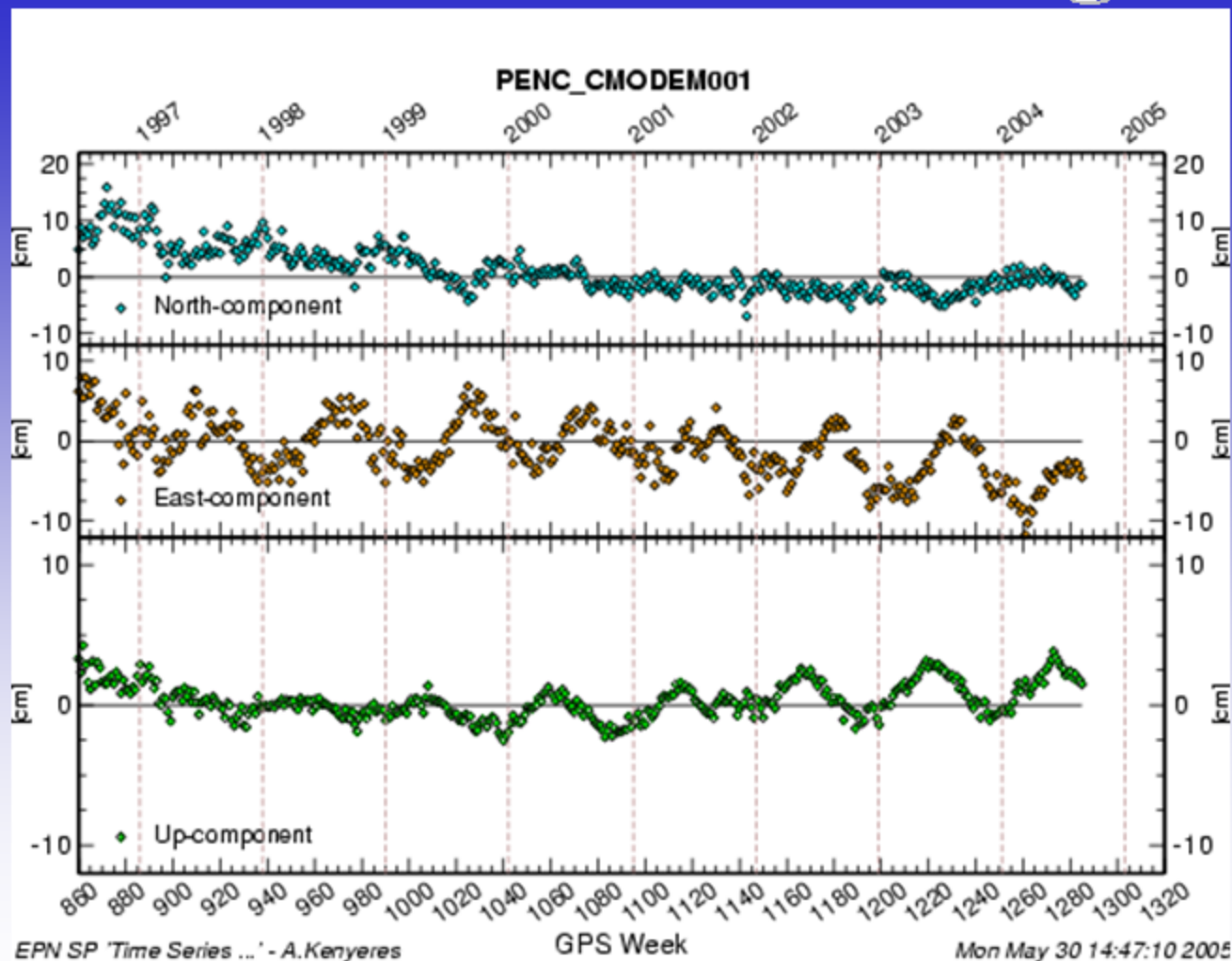
constrained  **minimum constrained**

- **offset and outlier database**

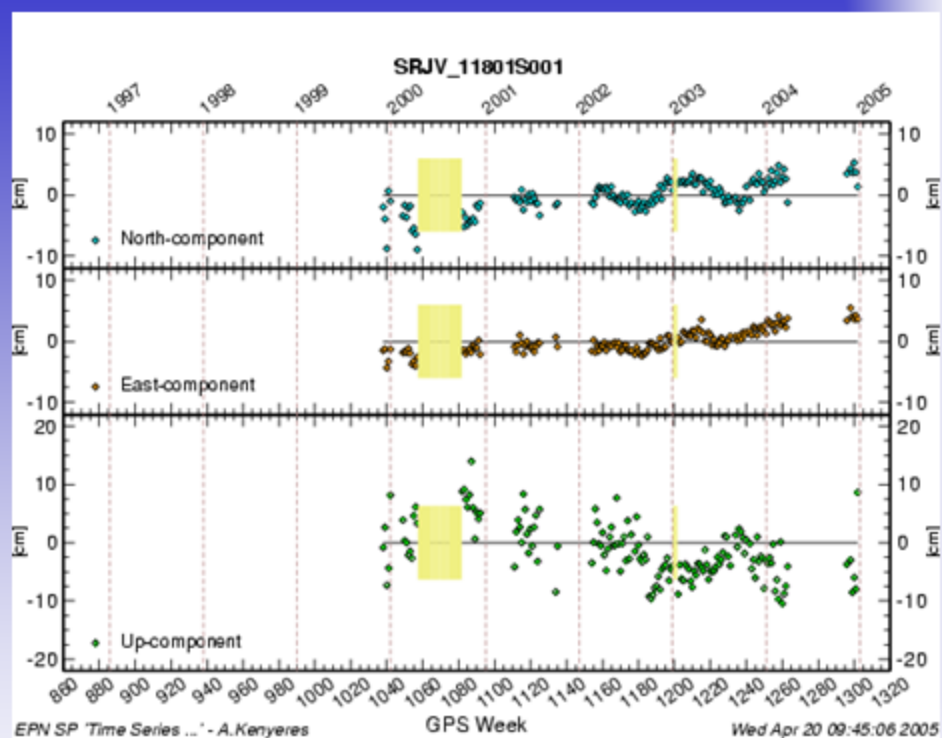
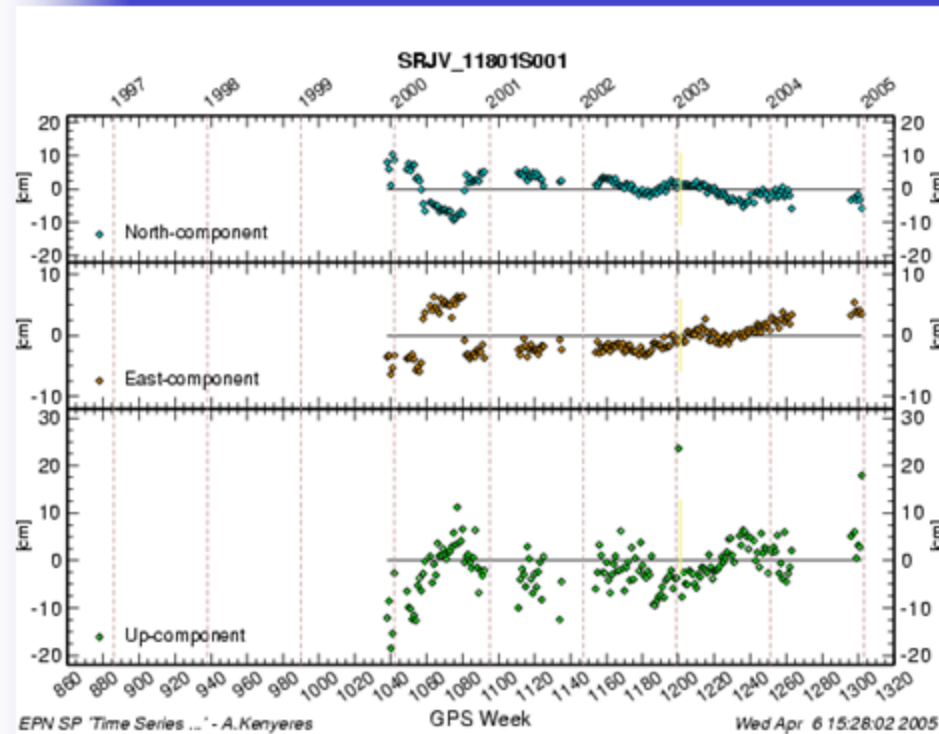
prepared to contribute ITRF2004

- **velocity estimation**

Combination: EPN common mode signal



Combination: importance of outlier removal



UPGRADES II.

NOISE ANALYSIS

$$P(f) = P_0 f^\alpha = P_0 (f_0^{-\alpha} + f^\alpha)$$

white + colored noise

$\alpha = -1$: flicker noise

$\alpha = -2$: random walk (monument

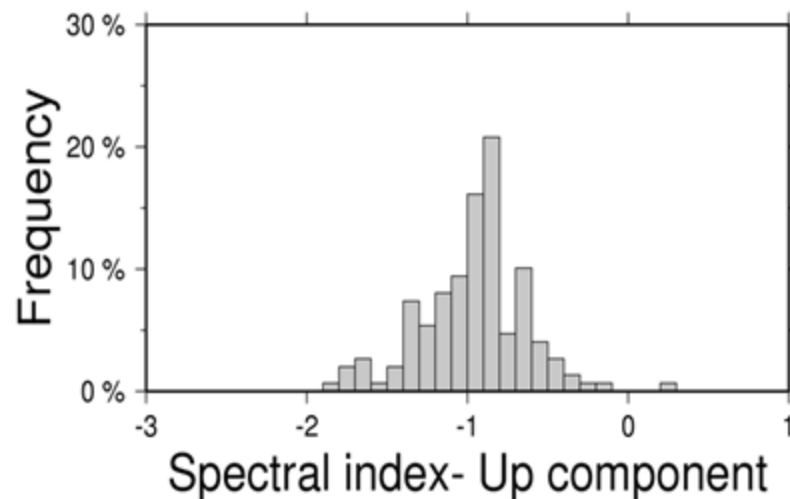
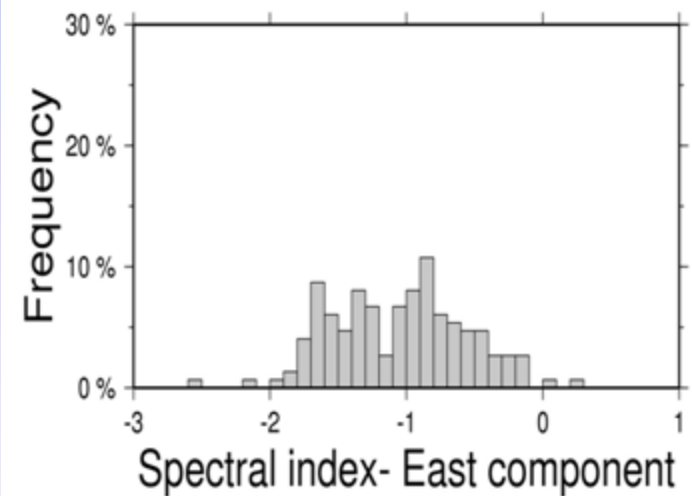
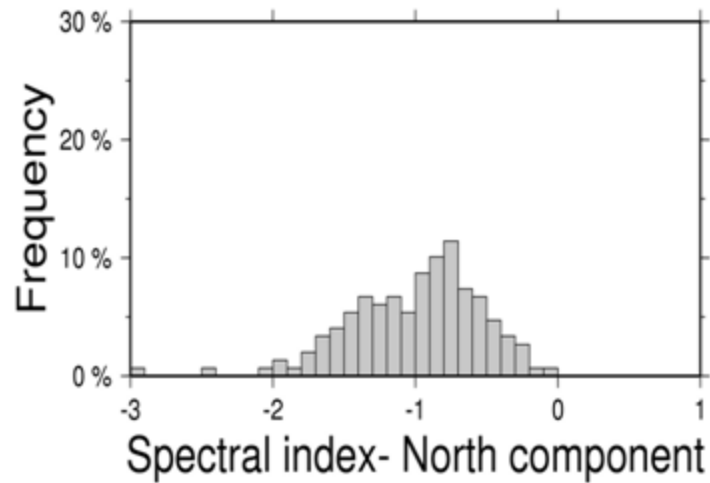
instability)
Spectral index estimation for the EPN stations:

CATS software [SD Williams]

MLE

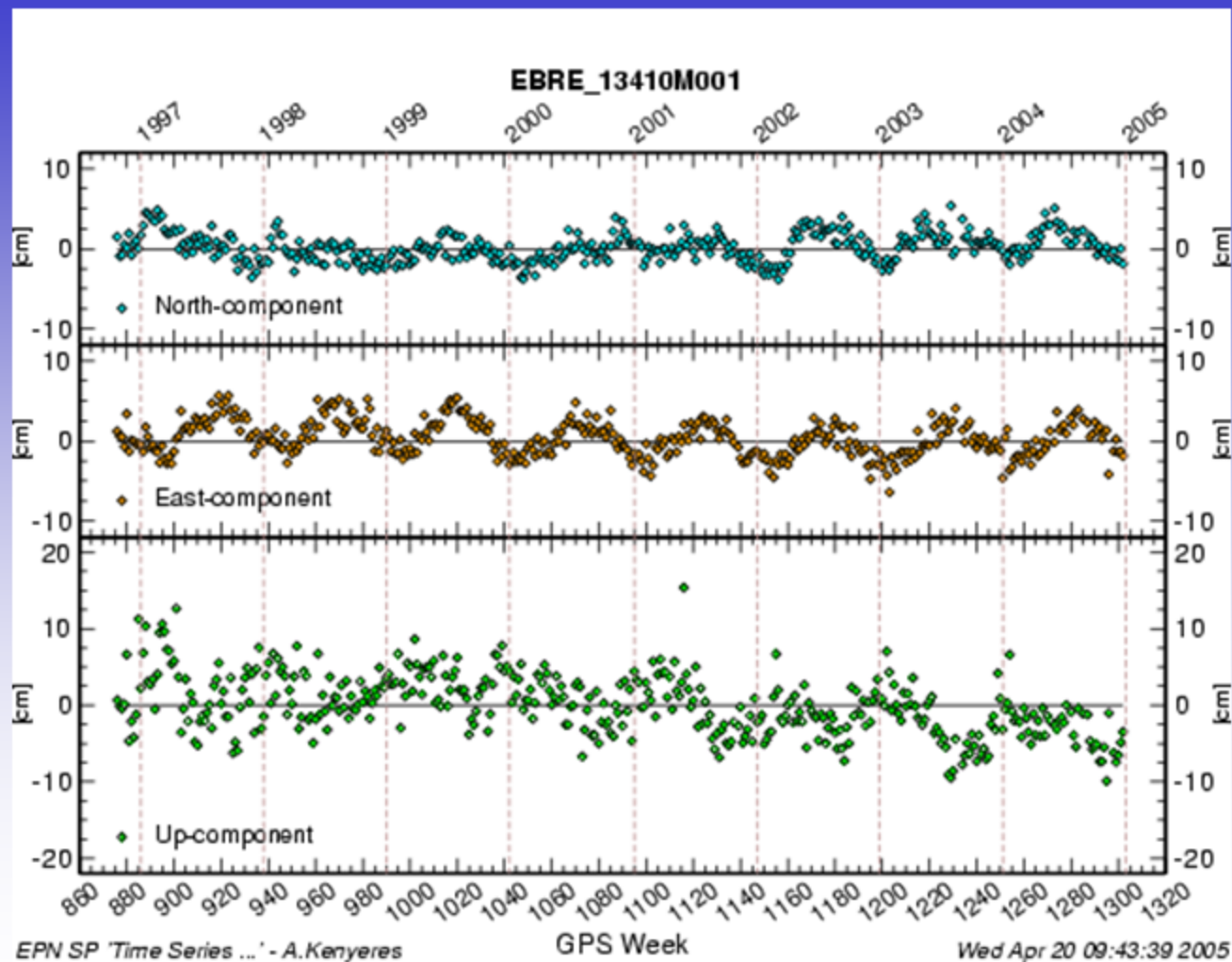
Presence of colored noise/flicker noise/ was proved

Spectral index estimation

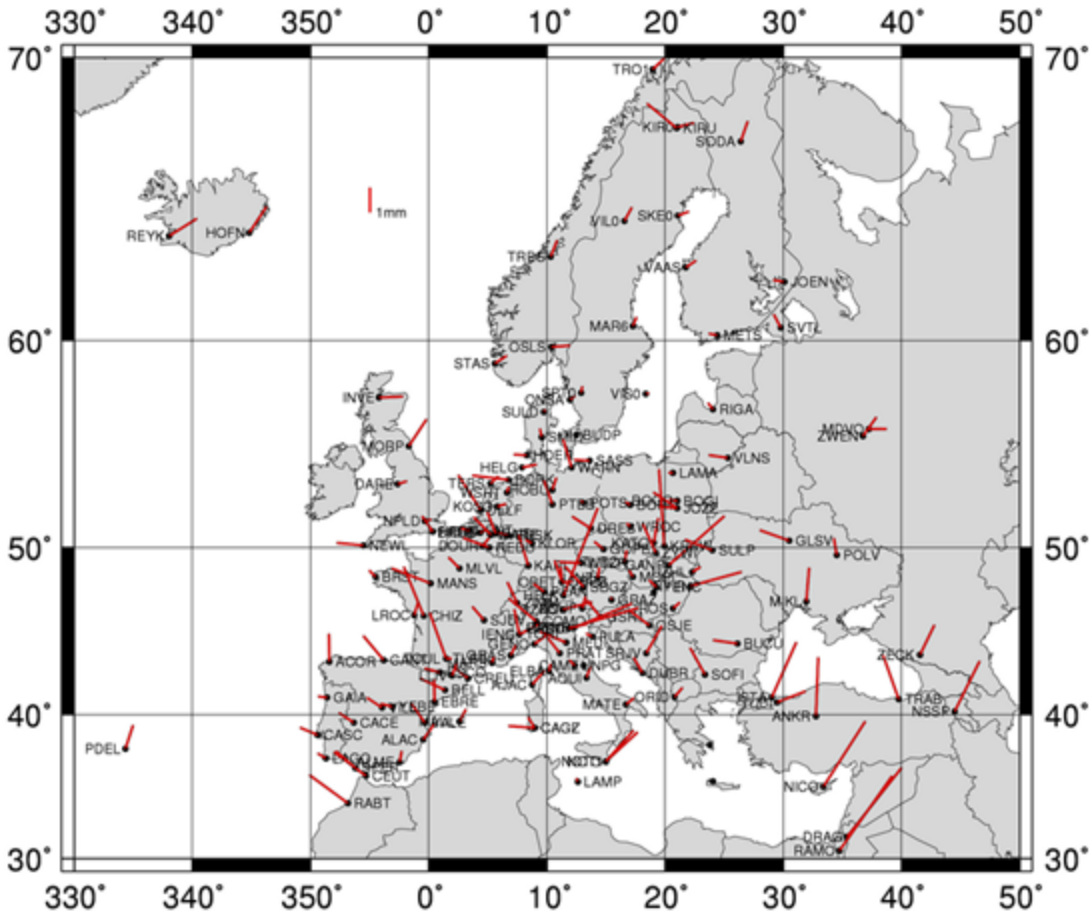


UPGRADES III.

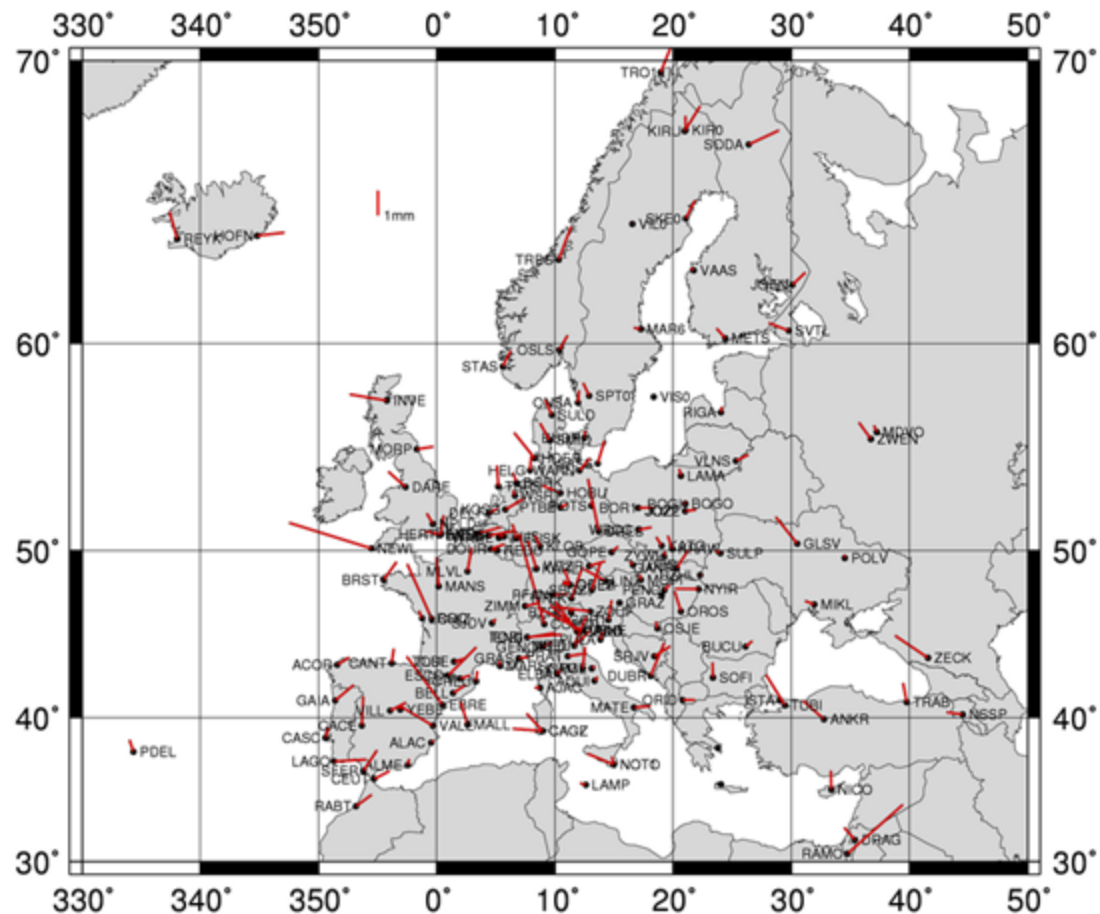
HARMONIC ANALYSIS



North component

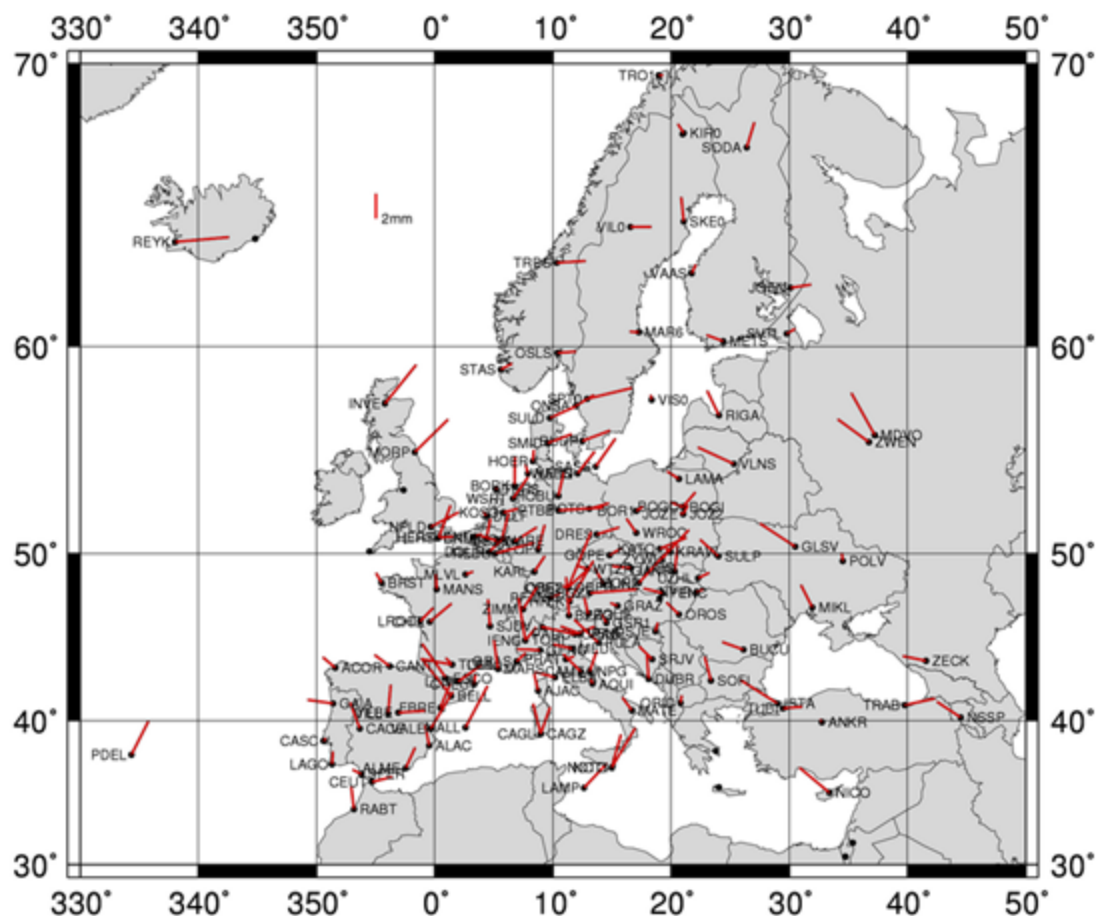


East component

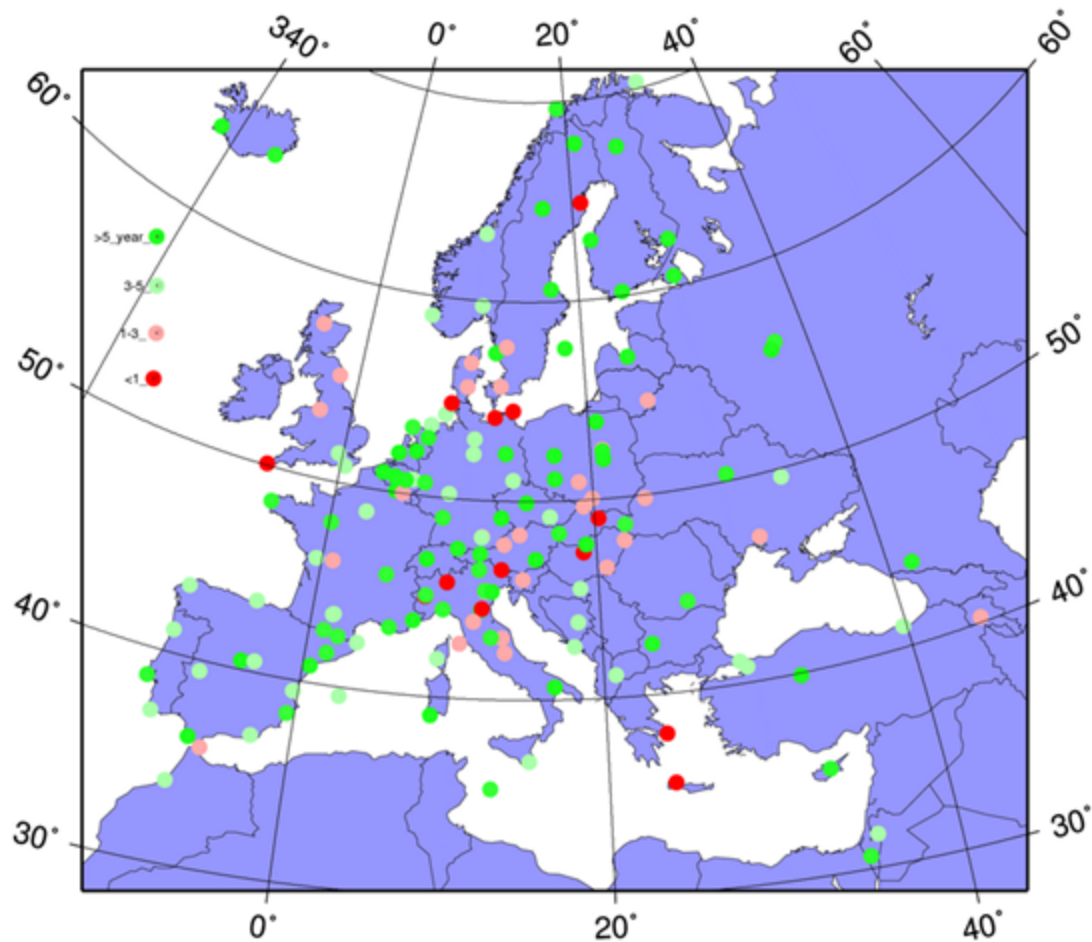


HARMONIC ANALYSIS

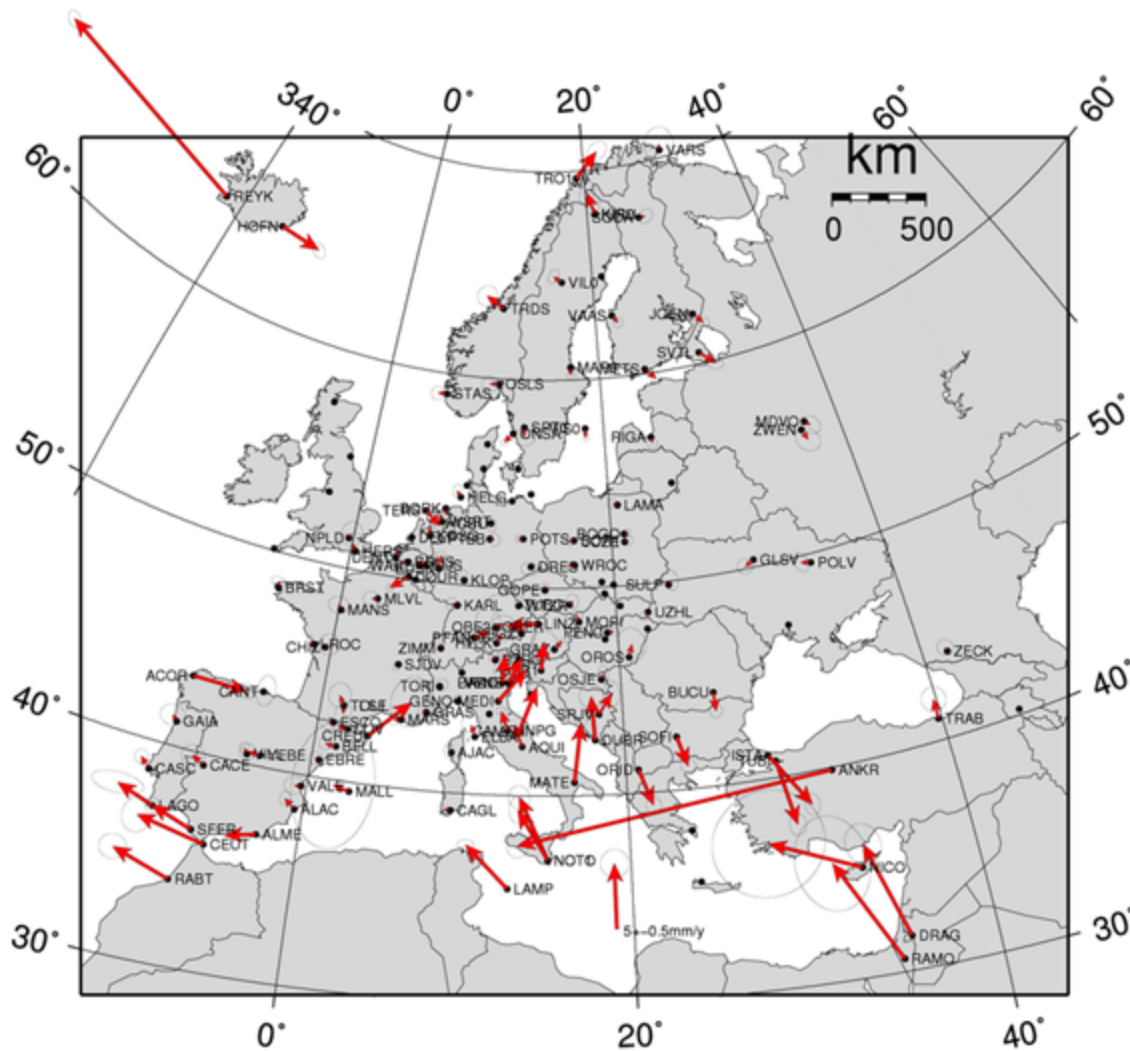
Vertical component



Ability of EPN for velocity estimation



NE-velocity estimation



UP-velocity estimation

