



Swiss status report

E-GVAP meeting 2008/09/16

- Operational activities at MeteoSwiss : going on
- Short progress report of MeteoSwiss and ETH Zürich on the tomography project
- Progress report of swisstopo
- Research activities at the University of Bern: going on
- E. Brockmann was active in the E-GVAP expert group meeting in May 2008, as well as in the EUREF annual meeting in June 2008

Pierre Jeannet, MeteoSwiss



GPS tomography project (MeteoSwiss+ETH)

- Water vapour along profiles computed from different data sources (GPS-tomography, NWP model COSMO-7 and radio soundings at Payerne) have been compared. Based on these comparisons, the main deficiencies were identified with respect to the requirements of the assimilation process. New algorithms are developed and tested for their feasibility to get rid of the major deficiencies. The most promising ones are implemented. Up to now, several tests and evaluations have been carried out and algorithms have been adequately adapted.
- A framework simulating input data for the tomography was developed. Thereby, the data can be calculated from given functions or directly from the output of the NWP model COSMO. This allows analyzing the new tomography algorithms for a broad variety of configurations in detail.
- The wet refractivity field was investigated on statistical properties. Based on these investigations, a statistical model was developed. It is used for configuring the tomography software and for the assessment of the new tomography algorithms

Other work at MeteoSwiss:

- Presently no special research project is ongoing on GPS IWV at the model group of MeteoSwiss.
- COSMO-2 has been put in operation (COSMO-7 still working).
- The water vapour measurements of the Payerne radiosonde will be improved next year (replacement of the humidity sensor). It is expected that the comparison between the GPS and radiosonde IWVs during winter low level stratus will be improved.
- The measurements of water vapour profiles at Payerne have been extended with a radiometer (RPG Hatpro) and a tropospheric water vapour Raman Lidar.
- Payerne is a candidate site for the GCOS Global Reference Upper Air Network (GCOS-GRUAN). Good for validation work!



Status report swisstopo

- E. Brockmann took part to the Joint E-GVAP expert team meeting on the processing and usage of GNSS data in NWP and now-casting, May 6-7, 2008, GFZ, Potsdam (see presentation for a complete progress report) and is acting very efficiently in the liaison between geodesy and meteorology.
- He was co-author of a paper prepared for the EUREF annual meeting (June 2008, Brussels) that is finished but not yet published. The article emphasizes the good results of the EUREF - EUMETNET collaboration and shows how meteorological data may be used at the geodetic side.

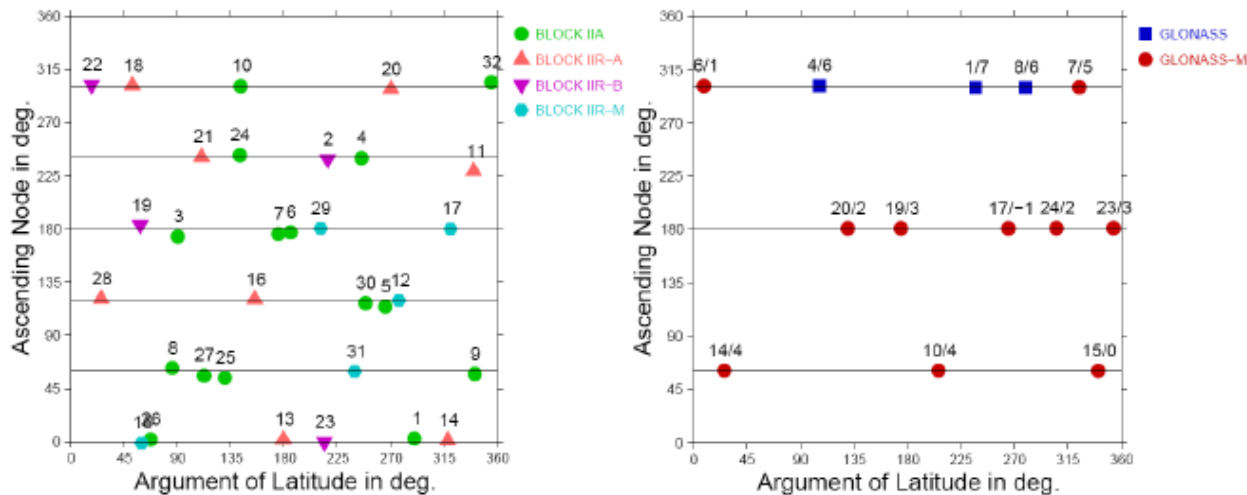
http://www.swisstopo.admin.ch/swisstopo/geodesy/pnac/presentations/EUREF2008_EUREF_EUMETNET_MoU_Final.pdf

- The last two main improvements at swisstopo are the inclusion of the GLONASS satellites and a new computer facility working more than twice as fast as the previous one and meeting now the E-GVAP deadlines for the products.

swisstopo upgraded the national GPS network AGNES to GPS+GLONASS combined receivers.

Satellite Constellation

January 06, 2008

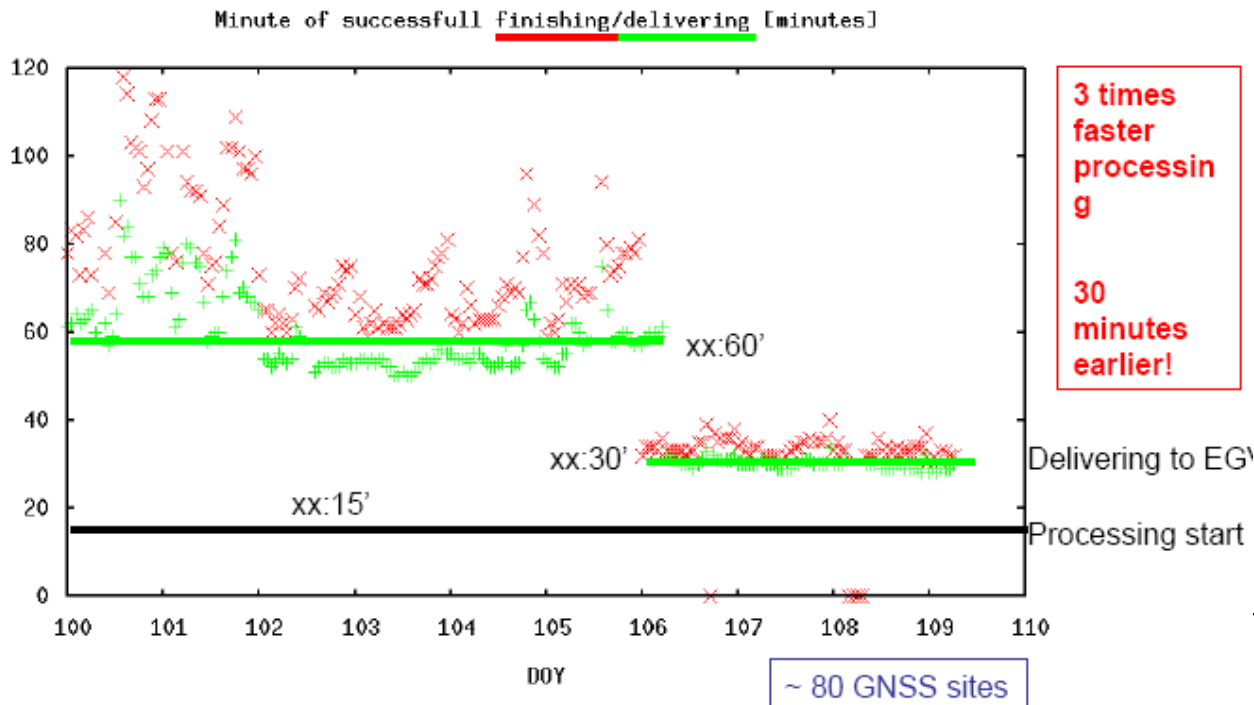


Status end of April 2008

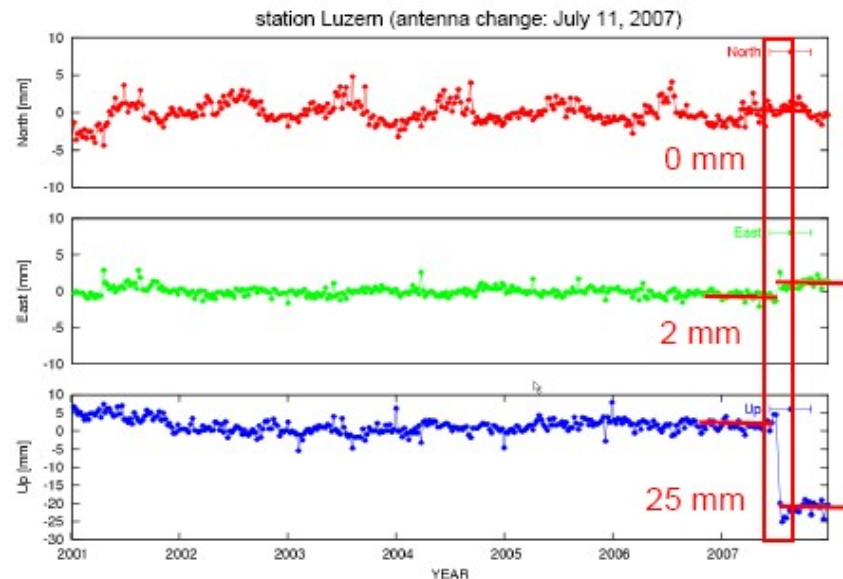
32 GPS-satellites

16 GLONASS-satellites

Since Mid-April 2008 swisstopo switched the processing of the operational computation of the hourly ztd estimates to a new computer. The processing procedure and the used models were not changed. Due to the fastness of the computer swisstopo delivers the results now every hour at approximately x:30-x:35 (instead of x:45-x:60 as it was the case before). The total processing time for the analysis of about 80 stations is now approximately 15 minutes (instead of about 45 minutes).



- Aug. – today: double station setup (4 sites still missing)
- 18. Dec.: new site coordinates and new web system (CMS)



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http://www.swisstopo.admin.ch/swisstopo/geodesy/pnac/resplt/pay_e_.jpg

