COST Action ES1206 - GNSS4SWEC

Advanced GNSS Tropospheric Products for monitoring Severe Weather Events and Climate

GNSS for climate monitoring, Status and Plans

WG meeting, Varna, 12 Sep 2014

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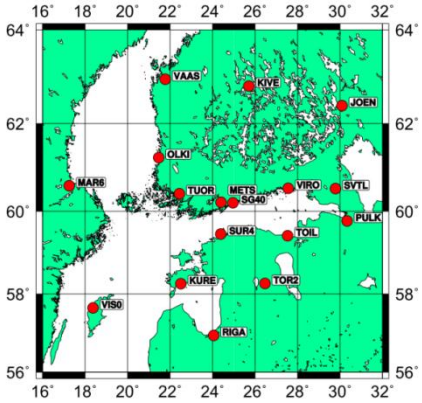
Work plans for WP3, 2013-2014 and status Sept. 2014



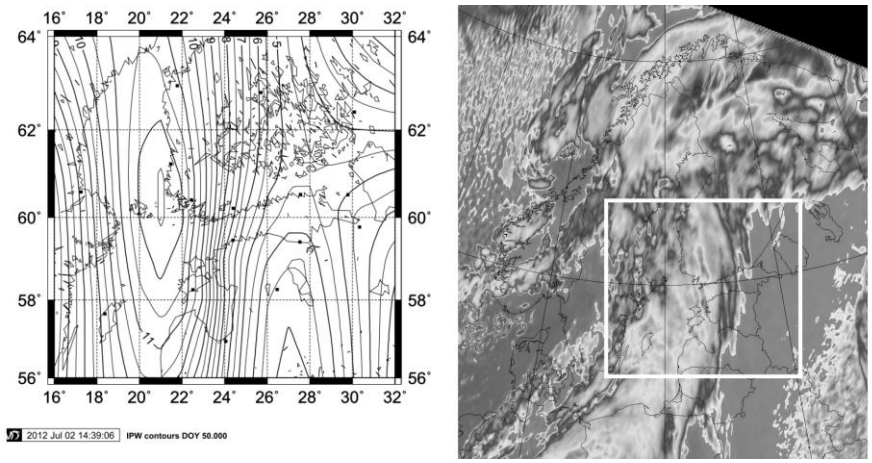
- planning work on IWV trends in Estonia (4 EUREF sites from 2008 -…) **continued**
- continuing with comparing GNSS-IPW with IPW from RS, MWR, FTIR, AERONET;
- continuing with collocation issues; **should be finished practical work, foreseen in COST_ES1206_STSM_1573**
- Finding variations of yearly IPW at Estonian sites, starting to investigate the IPW trends; **needs more effort**
- start with the IWV trend and variability assessment in Finland **in starting phase**
- continuing with latitudinal dependencies (diurnal variations of IPW, usage of mapping functions and the mean temperature of the atmosphere); **continued**

Work plans for WP2, 2013-2014 and status Sept. 2014:

Ongoing analysis of similar case studies (snowing events) using both GNSS data, Meteosat IWV maps and precipitation data from ground stations (searching new attractive events).

Searching collaborators from Russia (it is noticed, that missing observational data from the East and South-East direction deteriorates the quality of IPW maps). Unformal collaboration started, some experimental work made with Russian data, improvement of IPW-maps noticed. The future depends on motivation from both sides.
Searching for collaborators for assimilating GNSS-data into NWP models, to estimate the improvement of operational weather forecast and analyzing severe weather Events.

Still searching for partners.
Finland, Latvia etc.



IPW 19.02.2012 00:00 UT

more about ongoing work

- **... and plans**:
  - Find the optimum elevation cut-off angle giving the best agreement between GPS-radiosonde and GPS-AERONET at two stations (Suurupi and Tõravere) in Estonia
  - Estimate IPW trends and the impact of elevation cut-off angle to the value of the trend

    Reference station: Sodankylä (Finland), results presented in paper by T.Ning and G.Elgered (2012)
  - Processing historical data from Harku/Suurupi, comparing

    GNSS and RS IPW time-series, checking the trends
  - Making simlar historical data analysis for Jokioinen site (Finland), comparing RS and GNSS-IPW. Comparing the results with Harku/Suurupi.

Outlook for 2014-2015

Limited power and resources should be (will be) concentrated on WP3, collaborative work with partners would be the most effective.

Hoping to integrate students (MSc & PhD) from Math Depertment to work on algorithms and methods.

Regarding intercomparison experiments and theoretical issues:

We should find consensus on methods and share the work. If no central data processing (like for GRUAN-GNSS-data) then the work can be shared between the groups (institutes), but the methods should be identical (also the tools, if possible).

Proposal for a special issue

- Special education system like International Space University (ISU) in Strasbourg
- Explore different modern numerical and optimization methods like metaheuristics for use in the Project
- Assessing the relative performance of different climate policy scenarios when accounting for their long-term economic, social and environmental impacts
- Searching collaborators from Russia to get some data from the other side of EU
- Attempt to formulate the final „big“ questions to be answered in this Project
- Issues connected with the Ethics of Big Data Problems