Activities at NKG EPN LAC

NKG = Nordiska Kommissionen för Geodesi

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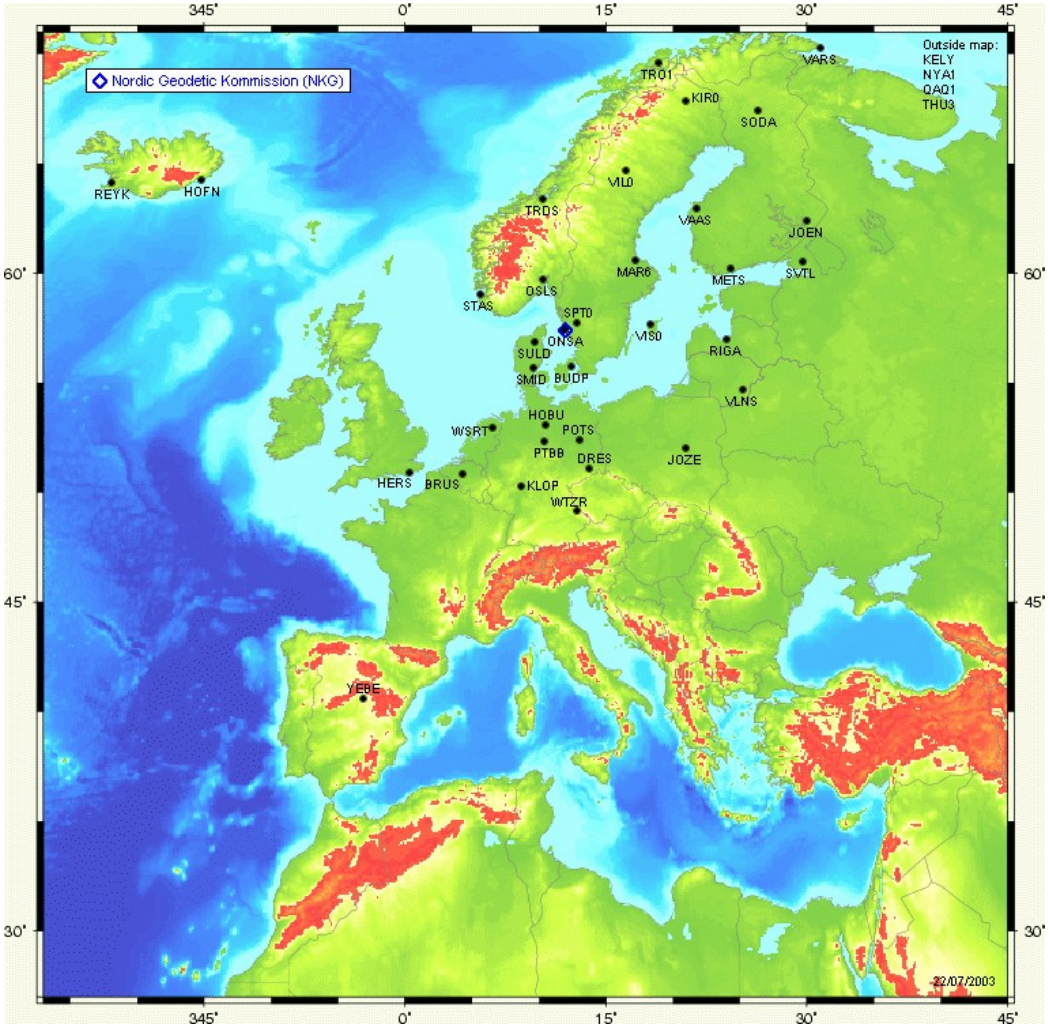
Nordic Geodetic Commission

- Regional Analysis centre contributing to the continues daily processing of EPN
- Near real-time processing based on hourly data from EPN and other stations
- Other activities related to EPN and EUREF

Daily EPN processing, NKG AC sub-network

Today 38 stations in Northern Europe

From Gweek 1235
40 stations



Changes since may 2001

GPSweek 1130 new parameters according to EPN directive
in final solution
(old standard solution with 15 deg continue
GPSweek 1147 processing moved from Onsala to LMV
GPSweek 1167 new parameters in all steps except 15 deg
GPSweek 1205 pole parameters extrapolated for the last
12 hours of the week
(GPSweek 1225 a preliminary solution based on rapid orbits
is processed before the final one to ensure
final one to be in time)

Change from Onsala to Lantmäteriet

GPSweek1147 (dec 2001/jan 2002), LINUX => WIN98

Quality Measures						
GPS Week	1141		1142		1143	
AC	OSO	LMV	OSO	LMV	OSO	LMV
Resolved amb %	68	69	82	83	69	71
rms final sol	1,3	1,2	1,3	1,2	1,3	1,2

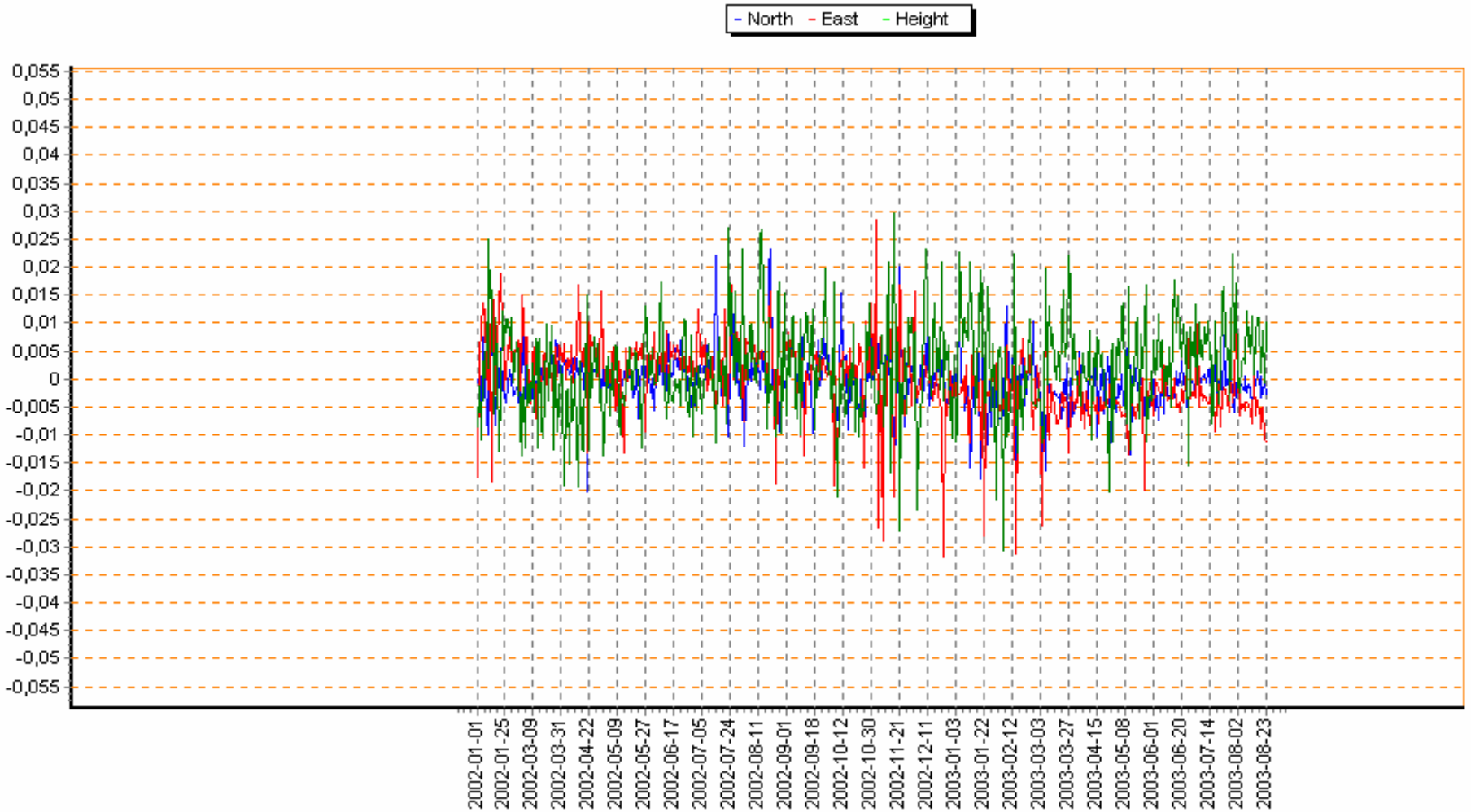
Coordinate comparison rms			
GPS Week	1141	1142	1143
N (mm)	1	1	1
E (mm)	1	1	1
U (mm)	2	3	2

Problems

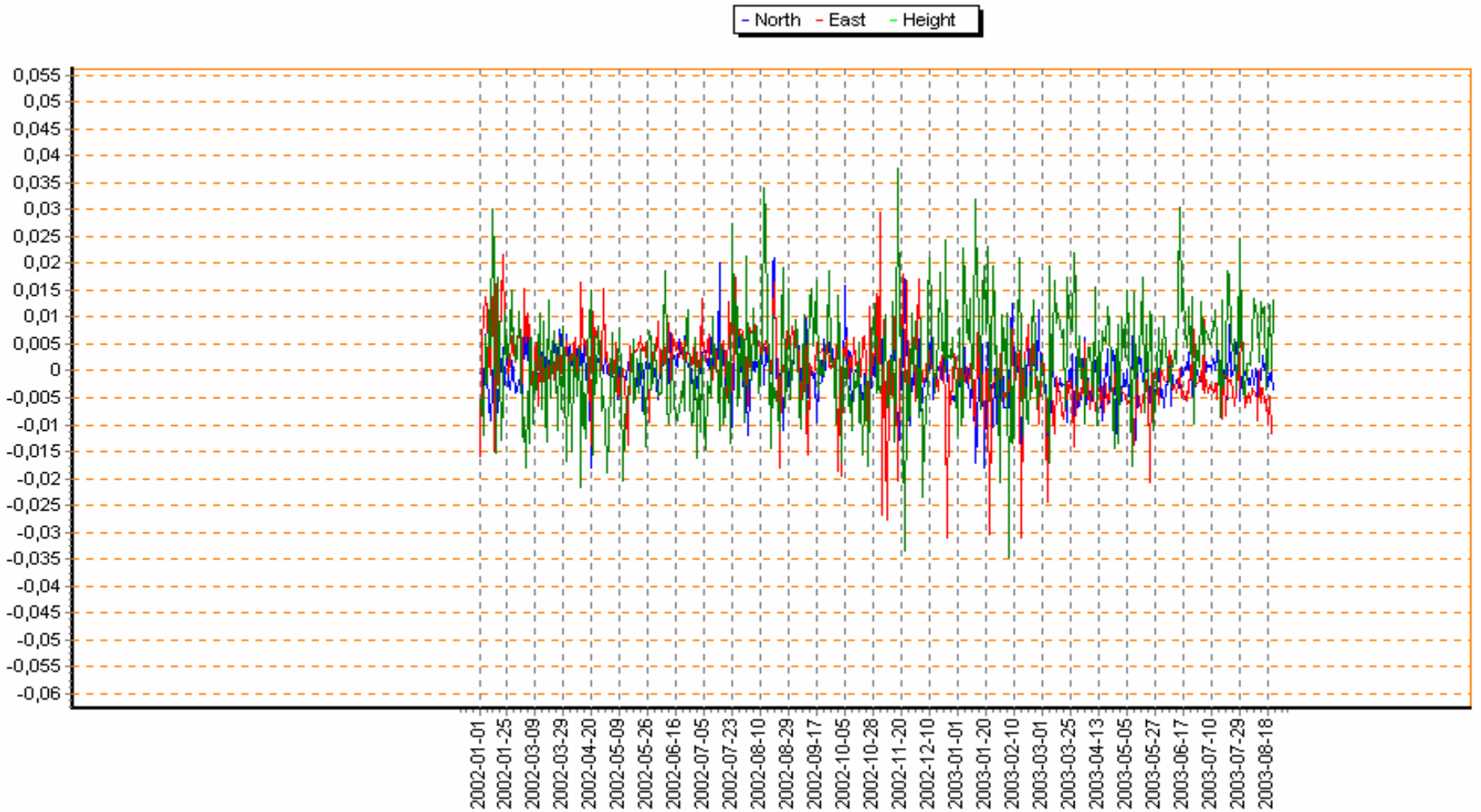
•No serious problems

•Data access at BKG
•Some files compressed or transferred in a wrong way causing extra LF, e.g. SVTL
• some files for QAQ1 and THU3 missing at BKG although available in “station inconsistencies” report
•stations with lower quality: KELY, SVTL
•snow

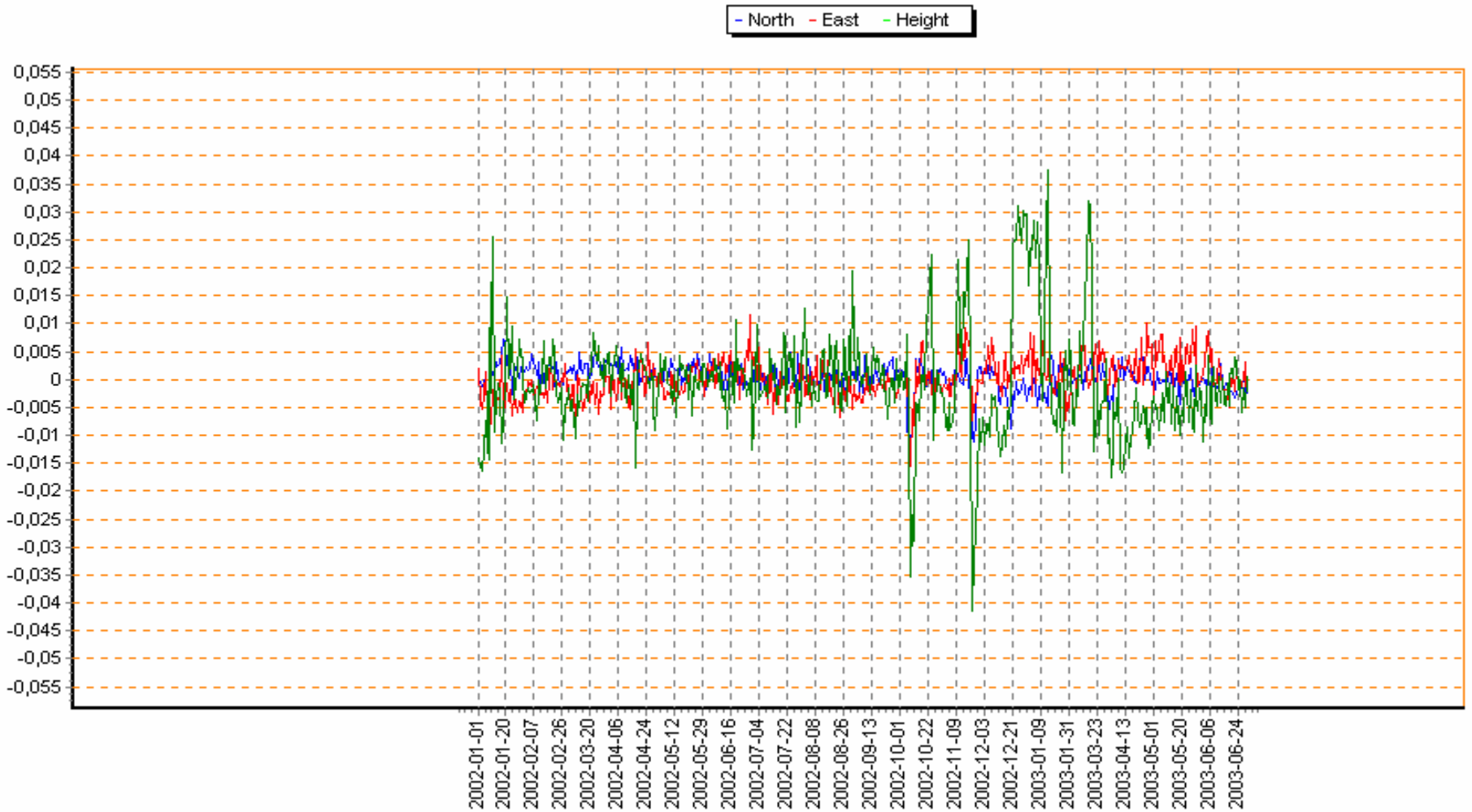
KELY daily sol elw



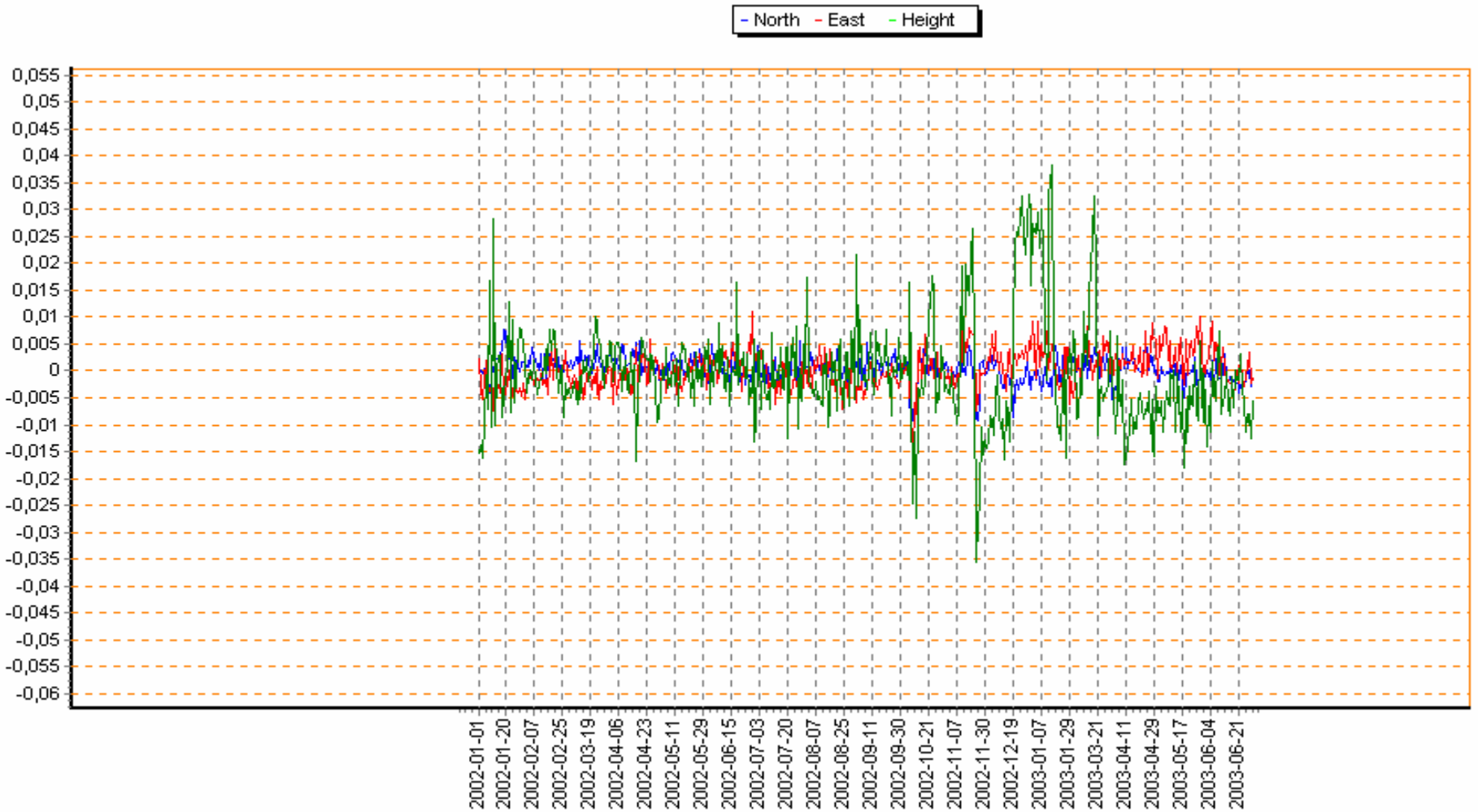
KELY daily sol 15 deg



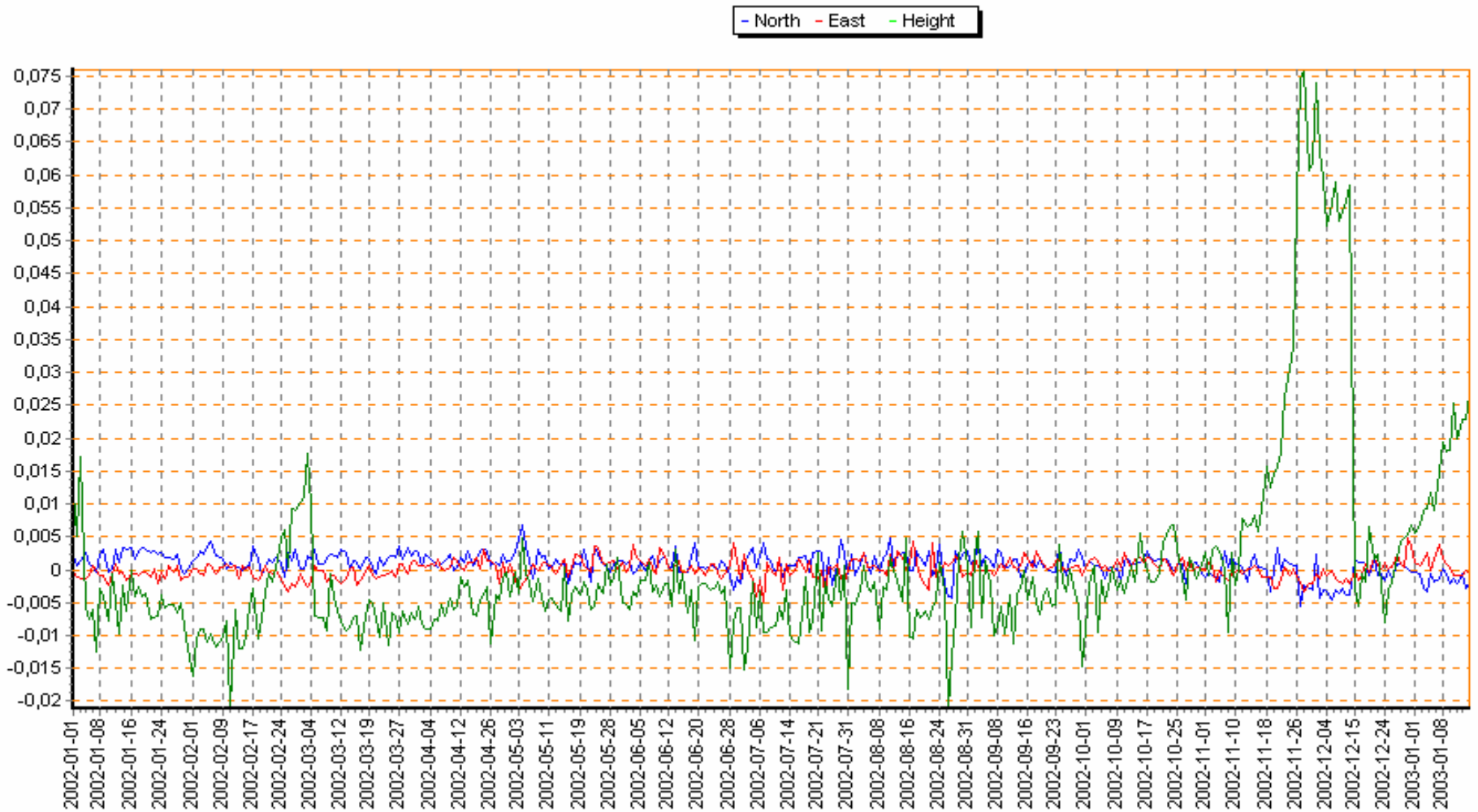
SVTL daily sol elw



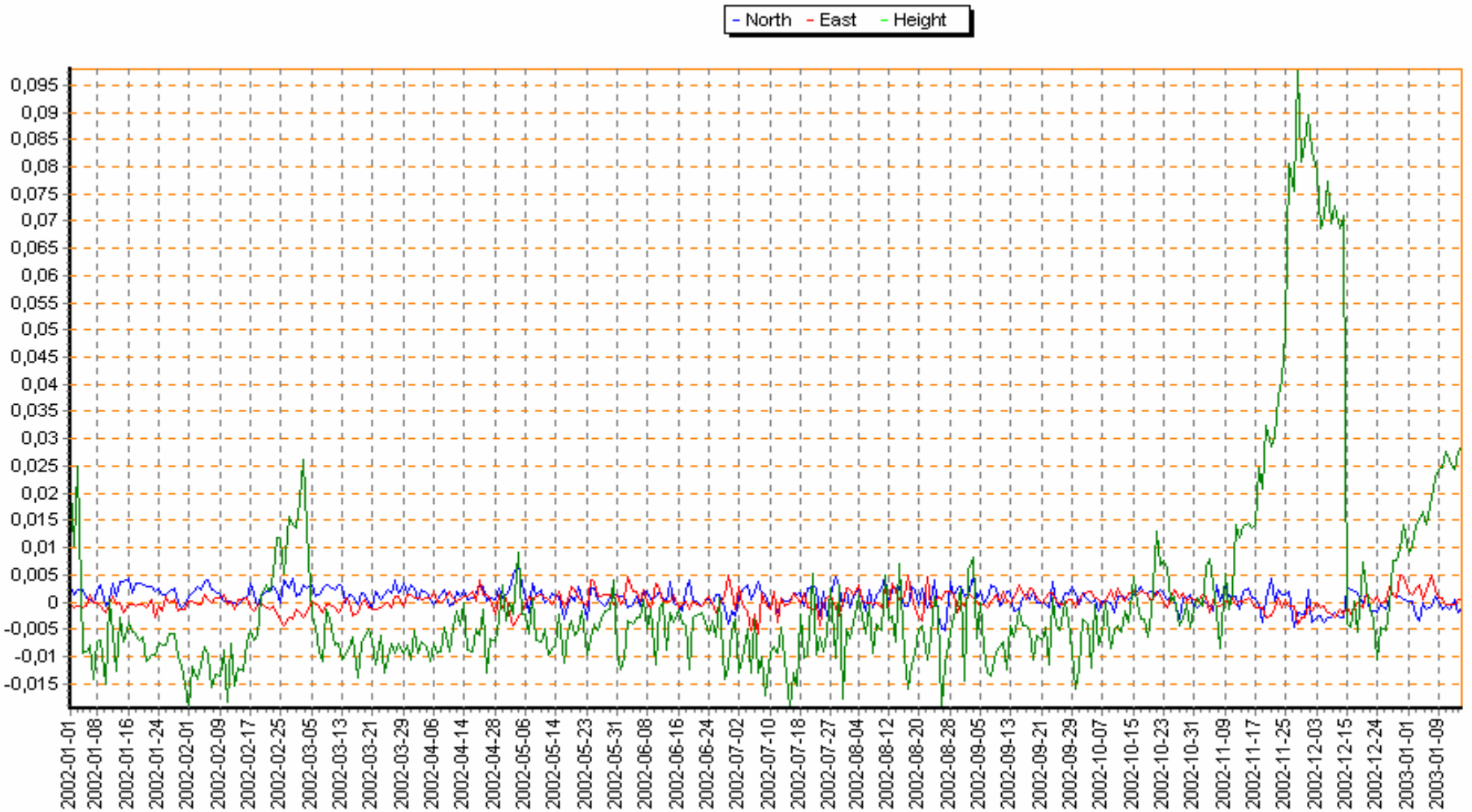
SVTL daily sol 15 deg



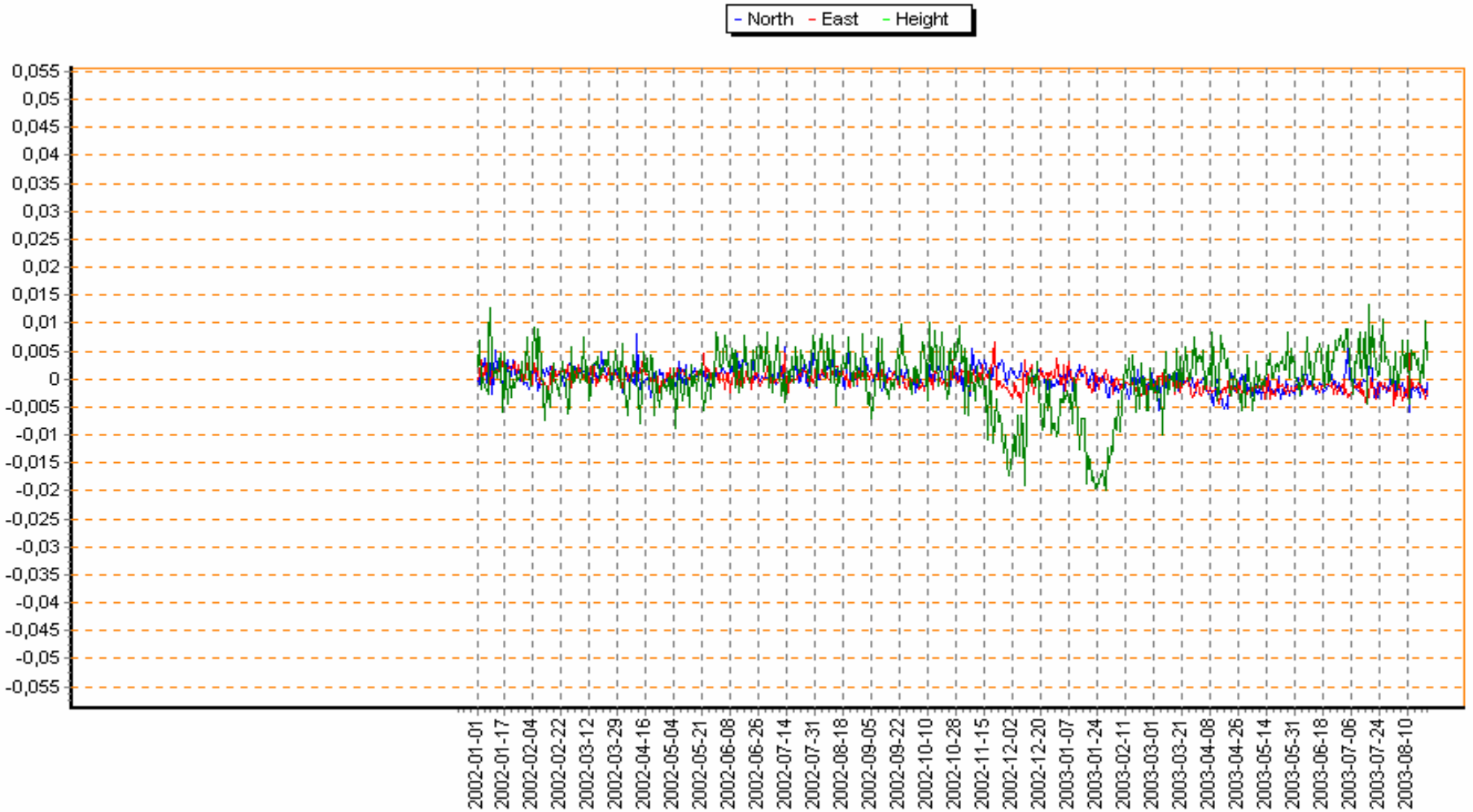
VAAS daily sol elw



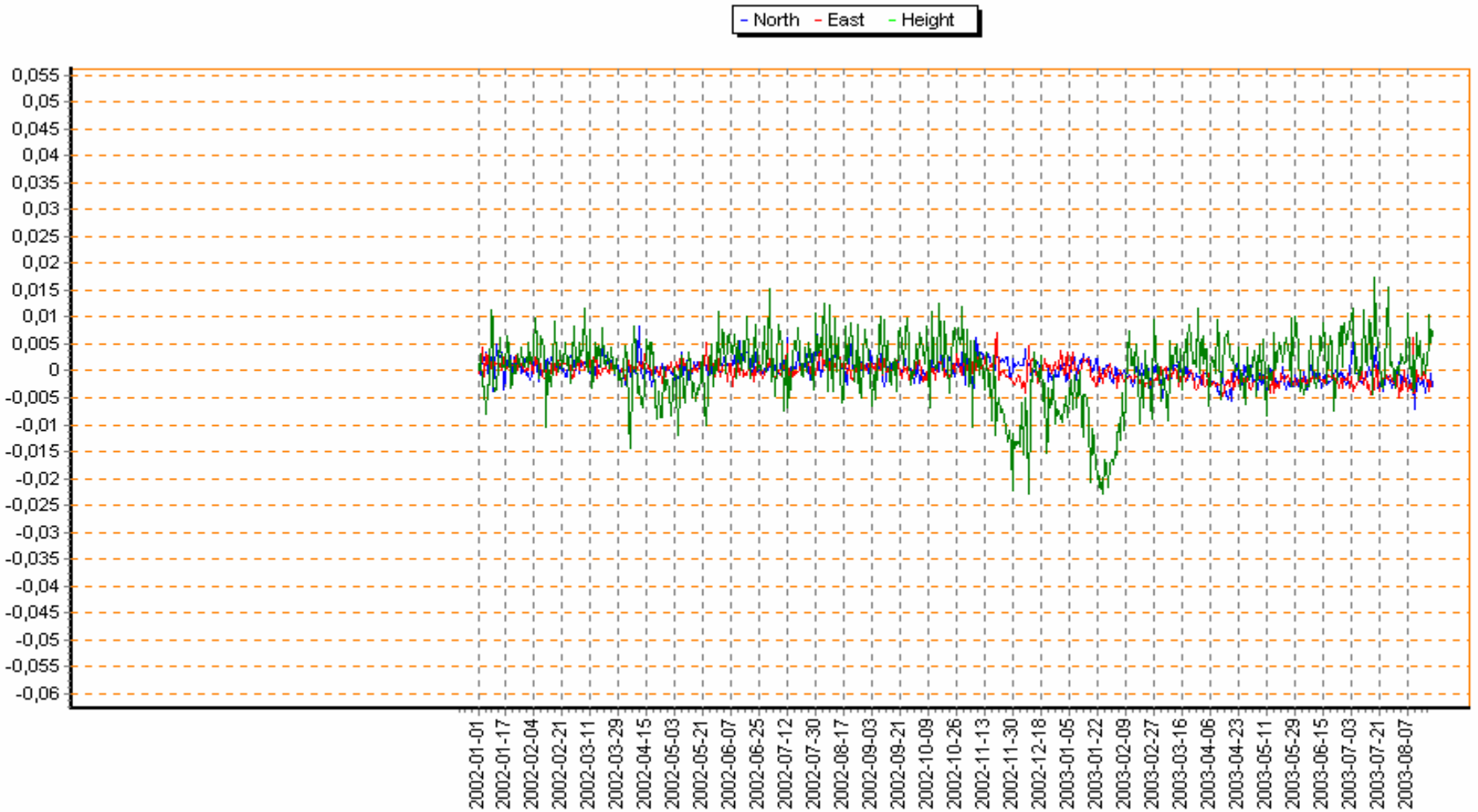
VAAS daily sol 15 deg



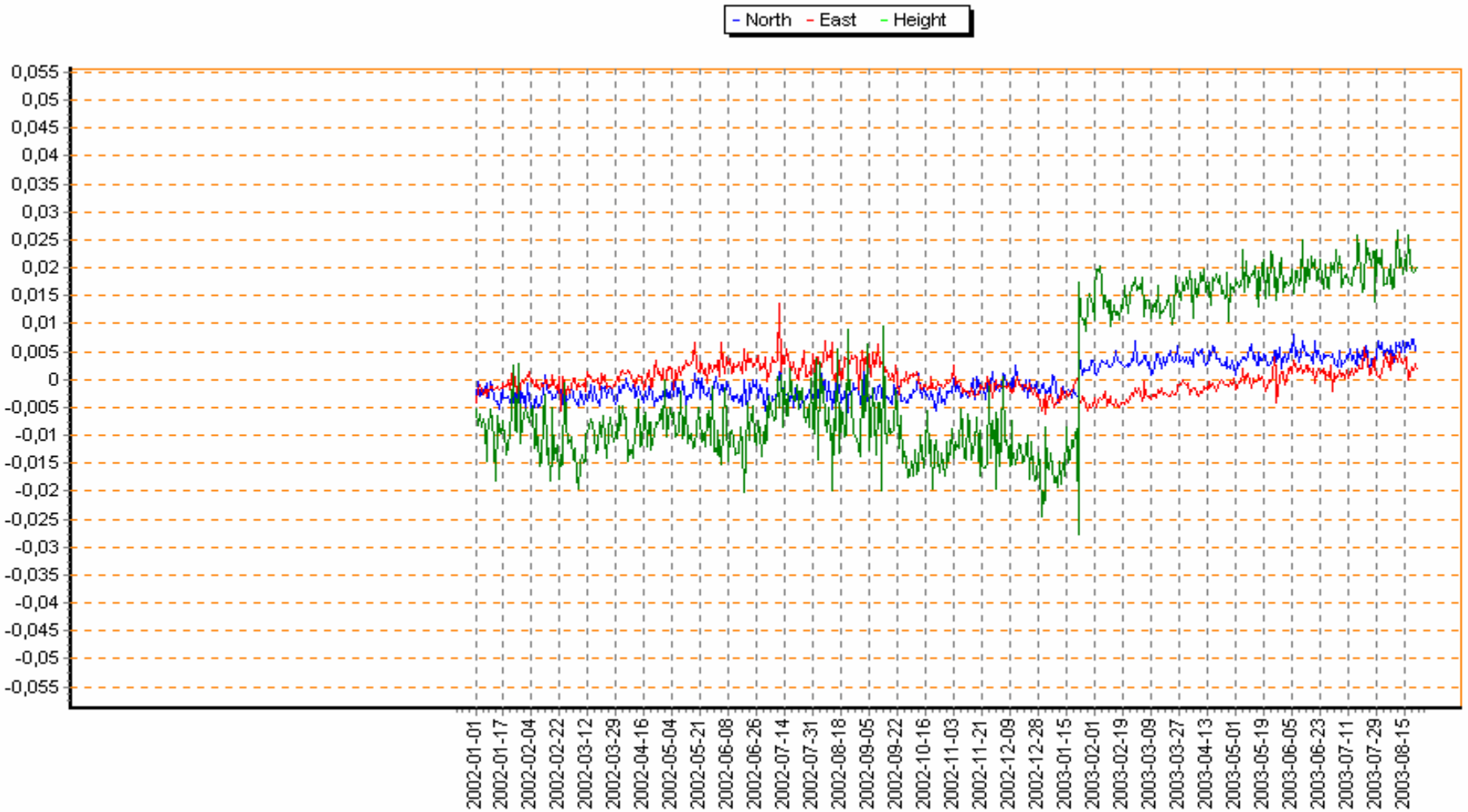
KIR0 daily sol elw



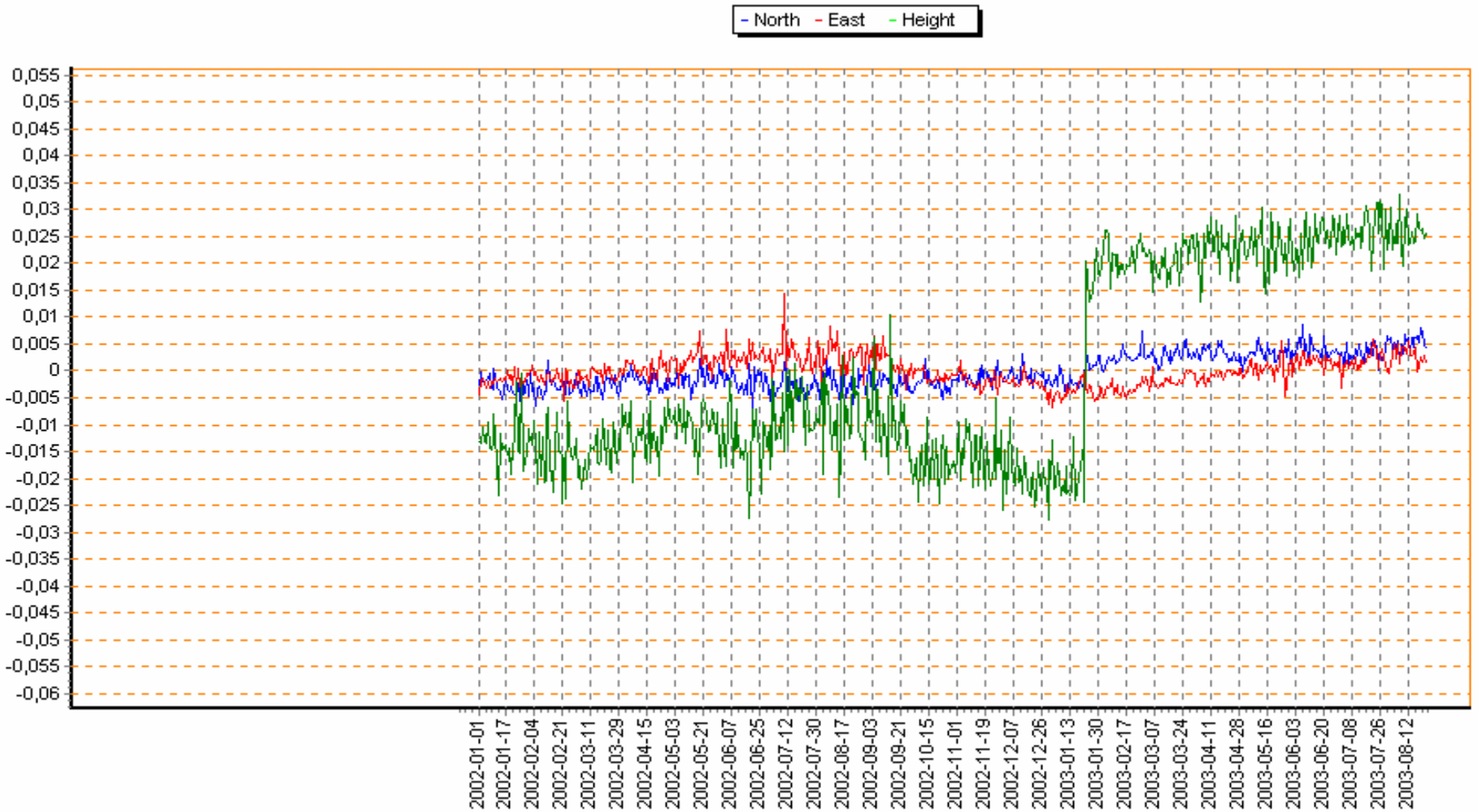
KIR0 daily sol 15 deg



DRES daily sol elw



DRES daily sol 15 deg



Near Real-time processing

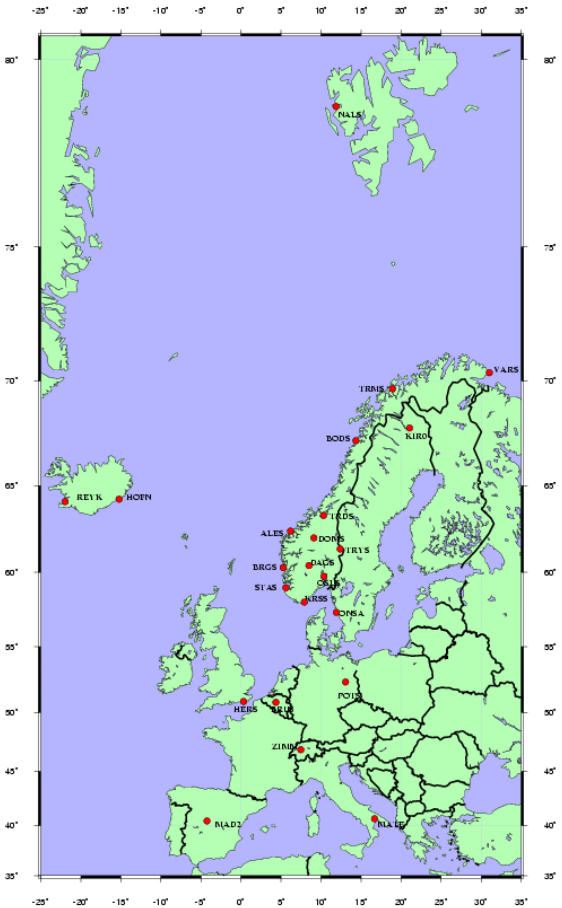
Solutions based on hourly data contributing to the COST 716 and TOUGH projects, estimation of atmospheric propagation path delay. Delivery within 1 h 45 m.

•NKG (NMA Oddgeir) :
Norwegian stations (13) + 10 EPN-stations

•NKGS (OSO Jan J):
Stations in Sweden (57), Denmark (3+26) + 25 IGS (10-15 EPN)

•Results available at
http://www.oso.chalmers.se/geo/cost716.html

Near Real-time processing - NKG



NKG (NMA Oddgeir) :

- Norwegian stations (13) + 10 EPN-stations
- previous strategy with global orbit solution too slow (2 h 55 min)
- new strategy 2 April 2003 using JPL very rapid orbits, solving for clocks and ZTD,12 hour window, 15 min
- GIPSY/Oasis II
- delivery after 1 h 20 min in average
- plan to add 10-15 stations in Norway
- plan to investigate need for orbit improvement

Near Real-time processing - NKGS

NKGS (OSO Jan J):

Stations in Sweden (57), Denmark (3+26) + 25 IGS (10-15 EPN)
aug 2002-jan 2003, 22 sept 2003 -

1. Global solution (25 IGS) with orbit improvement,
JPL very rapid or broadcast as apriori, 24 h window

2. GIPSY PPP-solution solving for ZTD and station clocks 15 min,
gradients 1 h, 24 h window

Other activities related to EPN and EUREF

- Recomputation of nordic permanent stations (Swe, Nor, Fin)
- Station calibration at SWEPOS-stations, autumn 2003 ONSA, SPT0, VIL0 and HASS
- Common Nordic campaign
- NGGOS

Common Nordic Campaign

Will result in a common Nordic reference frame in ITRF 2000

- to verify differences between national ETRS 89 realisations
- to tie national defining stations to permanent stations (Denmark)
- to enable computation of e.g. Danish ETRS 89 coordinates in Sweden and
  Norway
- the new reference frame will **not** replace existing ETRS 89 realisations!!

Observations (KMS):

GPS week 1238, all permanent stations in the Nordic Countries + defining ETRS 89 stations in at least Denmark + ev stations in the Baltic

Common Nordic Campaign, cont

Data Analysis (LMV)

5 centres, LMV, NMA, FGI, KMS, OSO
Bernese, Gipsy, Gamit

Coordinate analysis and trasformation (NMA)

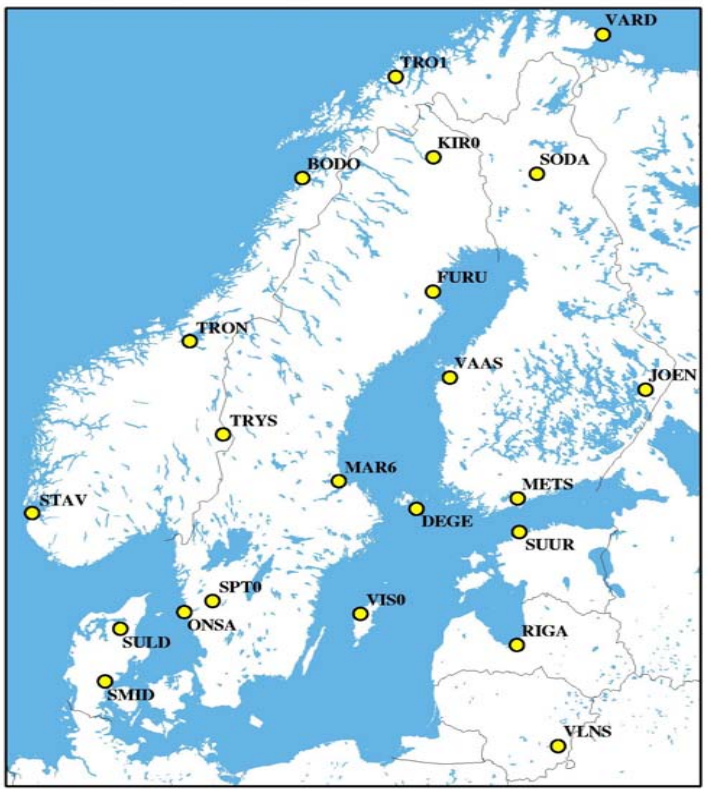
common ITRF 2000 (GW1238) -> national ETRS 89

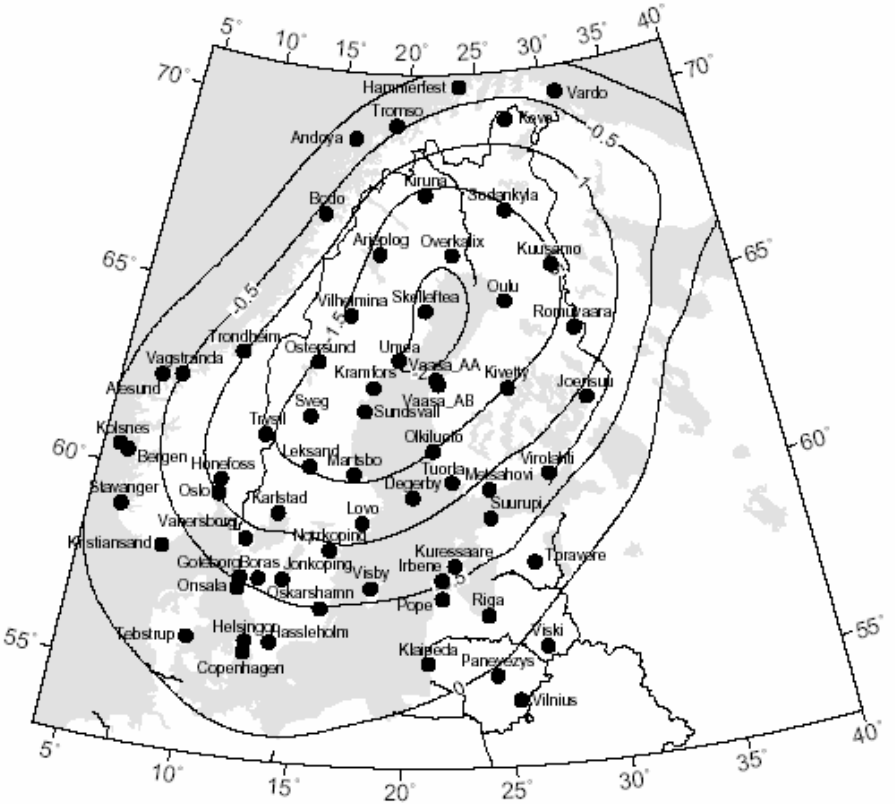
NGGOS

Nordic Geodetic and Geodynamic Observing System

- The basis of the NGGOS is the Nordic permanent GPS network with a number of other sites
- NGGOS is a regional implementation and Nordic contribution to the ECGN
- There are more NGGOS sites than those Nordic points proposed for the ECGN

NGGOS





● old absolute stations, permanent GPS, other candidates