

Fennoscandian campaigns realised by IfE, Institut fuer Erdmessung in June and August/September 2003

Absolute Station	Date of AG measurem.	φ [°]	λ [°]	H [m]	drops	additional measurements	remarks
Copenhagen Buddinge BUD100	03.-04.06.03	55.7389	12.5019	45	1387	vertical gradient centring to DK's network point	marker exists GPS station
Copenhagen Vestvolden VEST100	05.-06.06.03	55.6869	12.4350	24	1296	vertical gradient levelling to river/bridge → water level	no AGP marker no GPS station
Helsingør HEL100	07.-08.06.03	56.0453	12.5797	32	2088	vertical gradient centring to DK's network point (marked)	no AGP marker no GPS station
Tebstrup TEB100	10.-11.06.03	55.9683	9.8725	84	1788	vertical gradient centring to DK's network point (marked)	no AGP marker no GPS station
Onsala AS ONS_AS	13.-14.06.03	57.3956	11.9276	6	2320	vertical gradient centring to AG point AN (marked) levelling to national benchmarks and wetland	also occupied by BKG in 2003 marker exists GPS station
Borås BOR100	15.-16.06.03	57.7159	12.8895	163	1599	vertical gradient levelling to GPS benchmarks	no marker GPS station

Metsähovi AB MET_AB Metsähovi AC MET_AC	18.-19.08.03 19.-21.08.03	60.2172	24.3983	55	AB: 2965 AC: 2410	vertical gradients groundwater (manually)	parallel registration with FG5 221, FGI markers exist GPS station groundwater well
Vaasa AA VAA_AA	22.-23.08.03	63.0847	21.6458	3	2433	vertical gradient	parallel registration with FG5 221, FGI marker exists no GPS station
Vaasa AB VAA_AB	24.-25.08.03	62.9611	21.7706	36	2385	vertical gradient levelling to GPS benchmarks	parallel registration with FG5 221, FGI no AGP marker GPS station
Skellefteå SKE100	28.-30.08.03	64.8792	21.0483	53	3940	vertical gradient levelling to GPS benchmarks	also occupied by BKG in 2003 marker exists GPS station
Arjeplog ARJ100	01.-03.09.03	66.3180	18.1249	450	3337	vertical gradient levelling to GPS benchmarks, lake and wetland/swamp	new AG station no AGP marker GPS station
Kramfors KRA100	06.-07.09.03	62.8754	17.9277	120	2247	vertical gradient levelling to natural height markers (rocks)	new station no AGP marker permanent GPS still not available
Östersund OST100	10.-12.09.03	63.4428	14.8581	453	3189	vertical gradient levelling to GPS benchmarks	new AG station no AGP marker GPS station

Trondheim AA TRO_AA	14.-16.09.03	63.4642	10.4458	30	4441	vertical gradient levelling to natural height markers (rocks)	also occupied by BKG in 2003 marker exists GPS station not close to
Ålesund ALE100	18.-20.09.03	62.4762	6.1985	140	4884	levelling to GPS benchmarks groundwater (manually) rainwater (manually)	new station in old bunker no marker GPS station groundwater well rainwater tube inside station
Trysil AC TRY_AC	22.-24.09.03	61.4230	12.3830	688	3938	vertical gradient levelling to GPS benchmarks groundwater (manually)	also occupied by BKG in 2003 marker exists GPS station groundwater well
Hønefoss AC HON_AC	26.-28.09.03	60.1439	10.2489	116	4047	vertical gradient	also occupied by BKG in 2003 no marker no GPS

- AGP = absolute gravity point
- absolute gravity measurements with FG5 220
- relative gravity measurements with two relative gravimeters Scintrex and LaCoste&Romberg G709 with the feedback system by Hannover
- **instrument comparisons:**
 - parallel registrations with FG5 221, FGI, at four stations (two AGPs in Metsähovi and two stations in Vaasa)
 - Five stations were also occupied by BKG in 2003 (Onsala, Skellefteå, Trondheim, Trysil, Hønefoss).
 - International Comparison of Absolute gravimeters in Luxembourg, 03.-07. November 2003
 - Participants: BKG with FG5 301
 - FGI with FG5 221
 - IfE with FG5 220
- **Reference measurements** before and after campaigns at Clausthal/Harz (May, June, October 2003) and Bad Homburg (January 2003) show good results. Next reference measurements in Bad Homburg will follow in November 2003 after the International Comparison of Absolute gravimeters in Luxembourg.
- **summarized additional measurements:**
 - vertical gradient measurements at all stations except at Ålesund
 - centring measurements to AG network points (at Copenhagen Buddinge, Helsingør, Tebstrup) and at Onsala to AGP Onsala AN
 - to control the local variations → levelling to GPS benchmarks, if GPS is available at the station; if not then levelling to natural height markers (rocks) like at Kramfors and Trondheim
 - to monitor the water level nearby the stations → levelling to river in Copenhagen/Vestvolden, to wetland/swamp at Onsala, to lake at Arjeplog
 - groundwater level measurements at Ålesund, Trysil and Metsähovi
 - rainwater level measurements inside station in Ålesund

The measurements at the **new stations** in Sweden were executed successfully, although the huts were not already finished by carpenters like in Arjeplog and Kramfors → but without big heating and other problems. The piers are stable. The day before we came, the station at Kramfors got power supply by a 350m long cable (thanks Peter Wiklund). So we did not need a generator for the power.

