REPORT FROM

Height Determination Group

2006 - 2010

NORDISKA KOMMISSIONEN FÖR GEODESI
Nordic Geodetic Commission Height Determination Working Group
Chairman
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Meetings

- April 2007 Masala
- April 2008 Hønefoss
- April 2009 Copenhagen
- March 2010 Gävle

Connections to the tide gauges

- EVRF2007 was realized in December 2008
- The Nordic and Baltic countries have/will have national height system that differ only 1-2 cm from this European height system
- How are the tide gauges connected to the new height systems?

Data sources

- European Mean Sea Level Service (ESEAS) (http://www.eseas.org/)
- Estonian Meteorological and Hydrological Institute (EMHI) (http://www.emhi.ee/)
- Norwegian Mapping Authority's home web page (http://vannstand.statkart.no/main.php)
- Permanent Service of Mean Sea Level (http://www.pol.ac.uk/psmsl/psmsl_individual_stations.html) 'RLR'-data
- Swedish Meteorological and Hydrological Institute (SMHI)
- TUT Marine Systems Institute (http://www.msi.ttu.ee/)

Connection data

Tide Guage						
Name	**Sea level reference below a bench mark**		**Sea level reference below a height system referance surface**		**Sea level reference above the GRS80-ellipsoid**	
	Bench mark	**Datum height (m)**	**Height system**	**Datum height (m)**	**Rreference frame**	**Height (m)**
Andenes	L07N0042	4,585	NN1954/NN2000	1,340/1,451	EUREF89	34,139
Bergen	B33N0202	3,853	NN1954/NN2000	0,890/0,952	EUREF89	44,039
Bodø	K13N0047	24,851	NN1954/NN2000	1,800/1,753	EUREF89	29,556
Hammerfest	U03N0025	8,432	NN1954/NN2000	1,770/1,877	EUREF89	23,623
Harstad	M08N0012	9,054	NN1954/NN2000	1,410/1,509	EUREF89	31,712
Heimsjø	E24N0001	4,434	NN1954/NN2000	1,500/1,489	EUREF89	40,246
Helgeroa	F38N0029	1,879	NN1954/NN2000	0,570/0,542	EUREF89	39,803
Honningsvåg	W02N0001	6,821	NN1954/NN2000	1,764/1,855	EUREF89	21,249
Kabelvåg	K10N0053	7,558	NN1954/NN2000	1,614/1,787	EUREF89	33,280
Kristiansund N	D25N0040	10,769	NN1954/NN2000	1,350/(1,338)	EUREF89	42,648
Måløy	A29N0026	6,614	NN1954/NN2000	1,160/(1,207)	EUREF89	44,292
Narvik	N09N0028	8,798	NN1954/NN2000	1,900/1,908	EUREF89	29,242
Oscarsborg	G35N0138	3,248	NN1954/NN2000	0,760/0,627	EUREF89	38,586
Oslo	G35N0349	4,583	NN1954/NN2000	0,810/0,652	EUREF89	38,472
Rørvik	H20N0062	5,604	NN1954/NN2000	1,660/1,575	EUREF89	37,082
Stavanger	B38N0037	9,396	NN1954/NN2000	0,680/(0,753)	EUREF89	42,940

Land uplift model

- Danish 1st and 3rd precise leveling
- More data from Norway
  - Railway leveling
  - Leveling 2006-2009
  - Short term tide gauges

Improved NKG2005UP

Improved Update minus NKG2005LU