FIG WORKING WEEK 2017
Surveying the world of tomorrow -
From digitalisation to augmented reality
Helsinki Finland 29 May - 2 June 2017

Improving the Geoid Model for Future GNSS-based Navigation in the Baltic Sea

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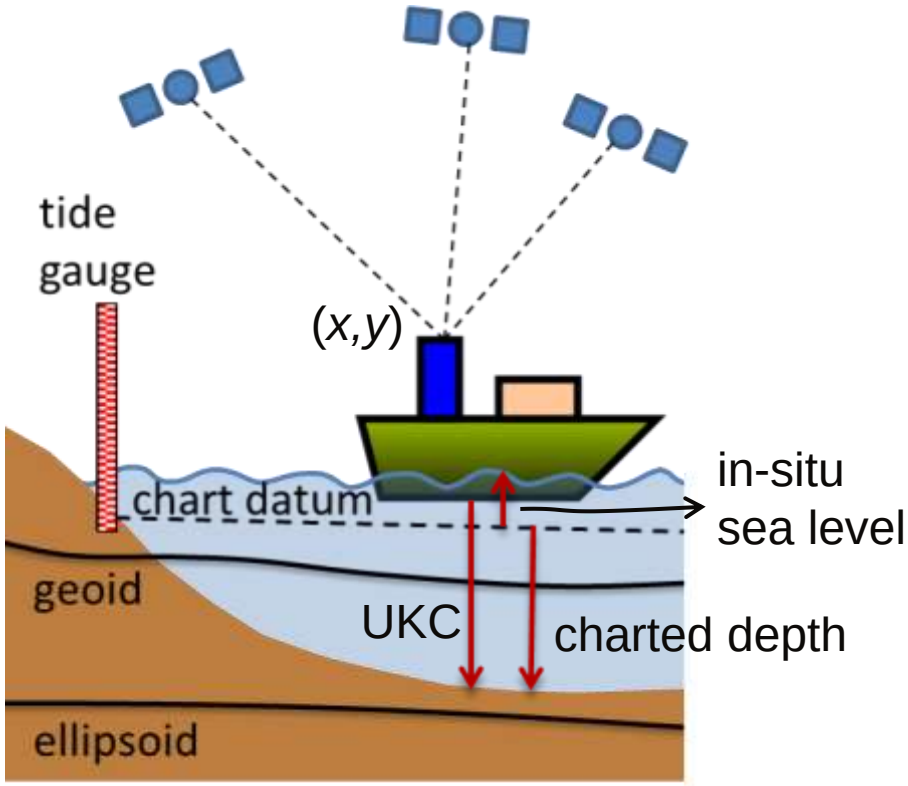
Navigation now

Large uncertainties (dm) in:

- Datum height
- In-situ sea level
- Dynamic draft

Result:

Large safety margins are used



UKC = Under Keel Clearance

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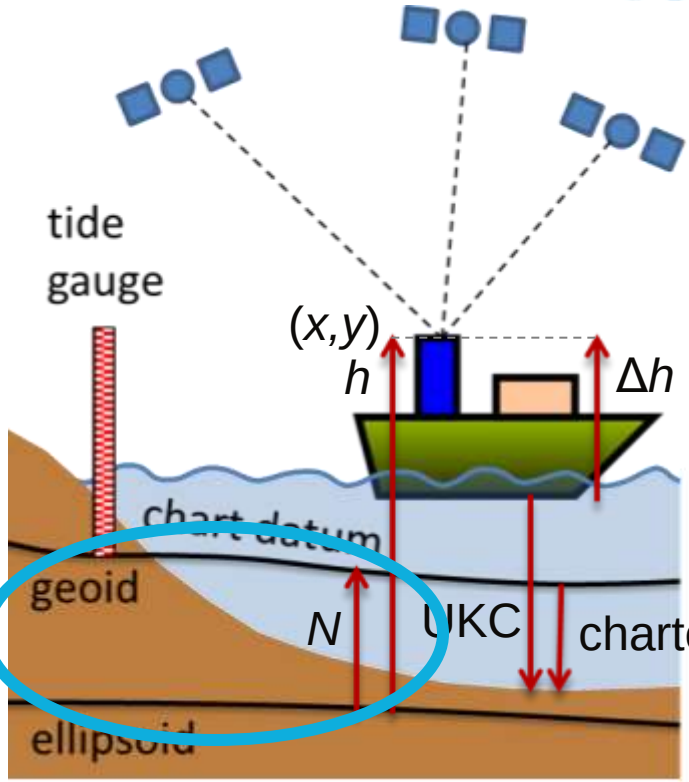
Navigation in the future

- Chart depths related to accurate geodetic datum
- Accur
- No ne
- Sea level information only for route planning

Gravity surveys to improve geoid model

Better accuracy

→ smaller safety margens



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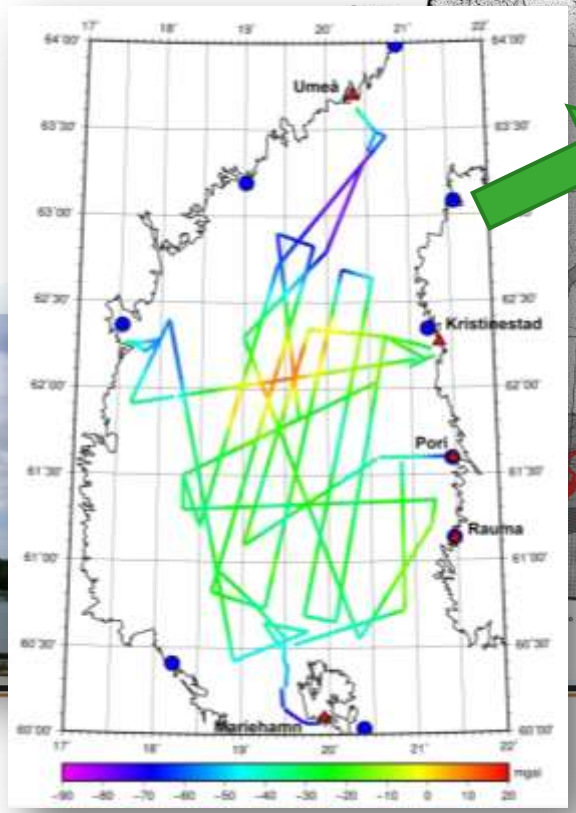
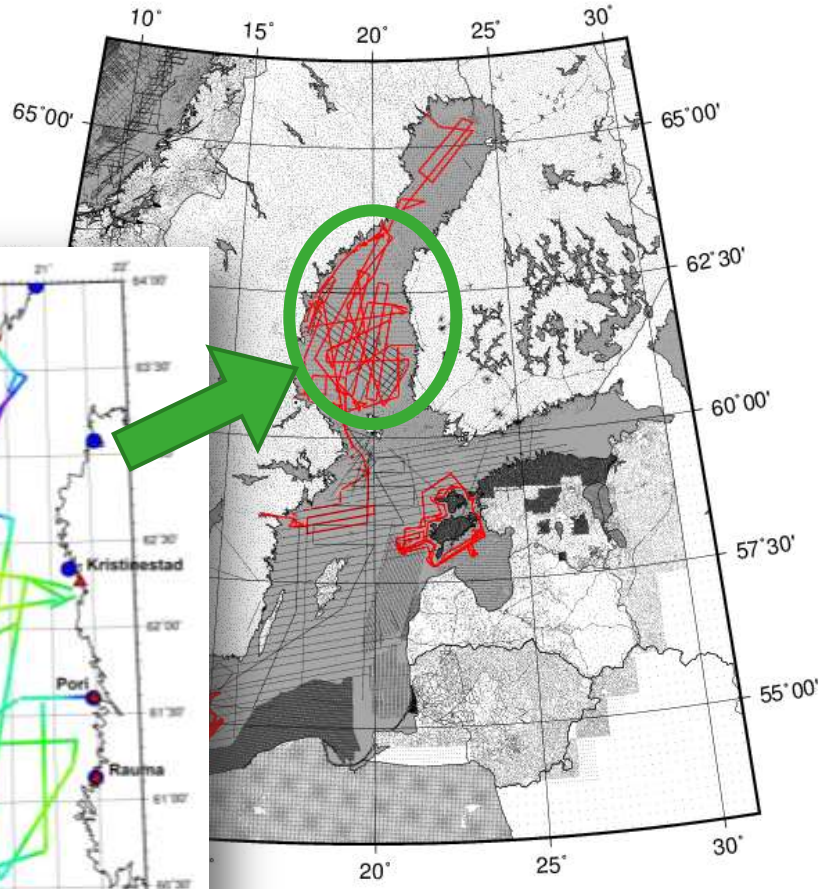
2015 Airisto gravity campaign

- Autumn 2015
- Survey vessel Airisto (Meritaito Oy)
- GFZ Chekan-AM gravimeter

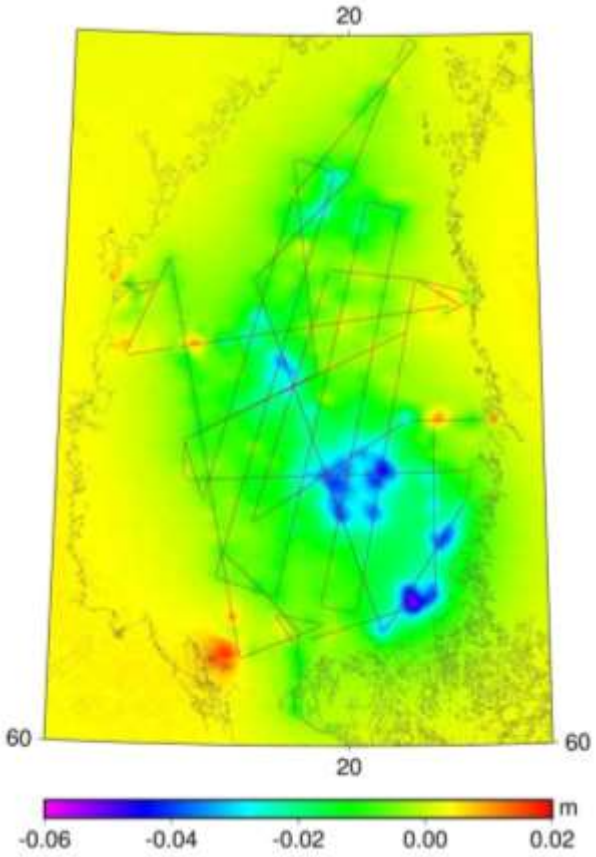




Airisto 2015 campaign – gravity and geoid

	All old	ice1980	ice1985	ice1986	ice1987	i
n	146423	736	11389	12542	7138	
av	**1.419**	**1.114**	**0.018**	**0.138**	**-0.726**	
stdev	5.087	0.470	1.371	2.421	1.196	

- Offset of 1996 Håkon Mossby ship data confirmed
- Also offset of other 1990's data
- Effect of new gravity data on geoid model up to 5 cm



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