



Decimeter differences in water level between 26GHz and 80GHz radars

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The new stations



Sandnes

Træna (okt. 23)

Improved water level model
More knowledge ocean-coast

Bruravik (nov. 22)

Improved water level model

Leirvik (nov. 22)

Improved water level model

Sandnes (nov. 21)

Test site
Municipal needed more data

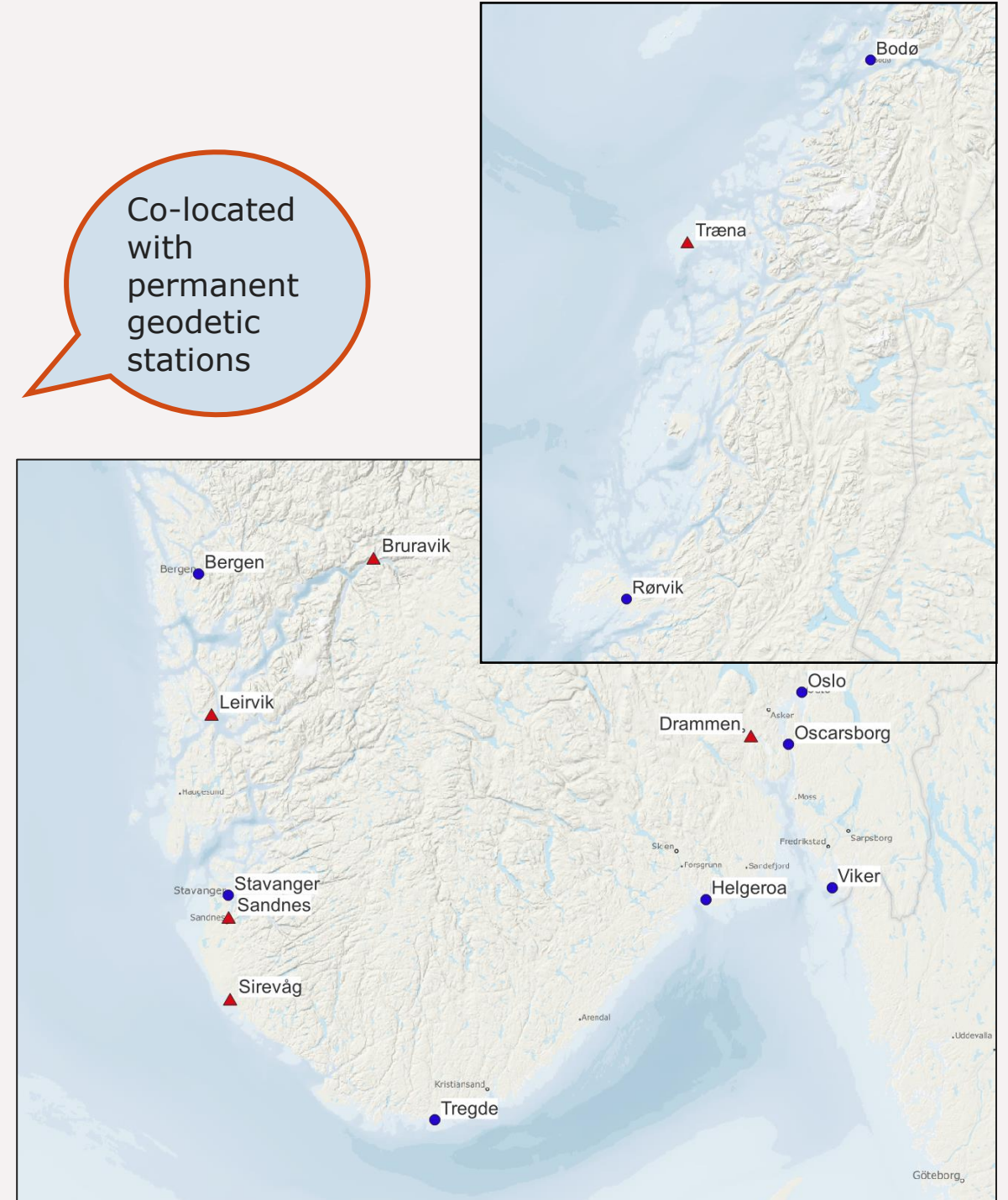
Sirevåg (sep. 22)

Improved water level model

Drammen (nov. 23/sept. 24)

Improved water level model
Municipal needed more data

Co-located
with
permanent
geodetic
stations



Radars

Vega Vegapuls C23

- 80 GHz
- 4° beam angle



Vega Vegapuls 61

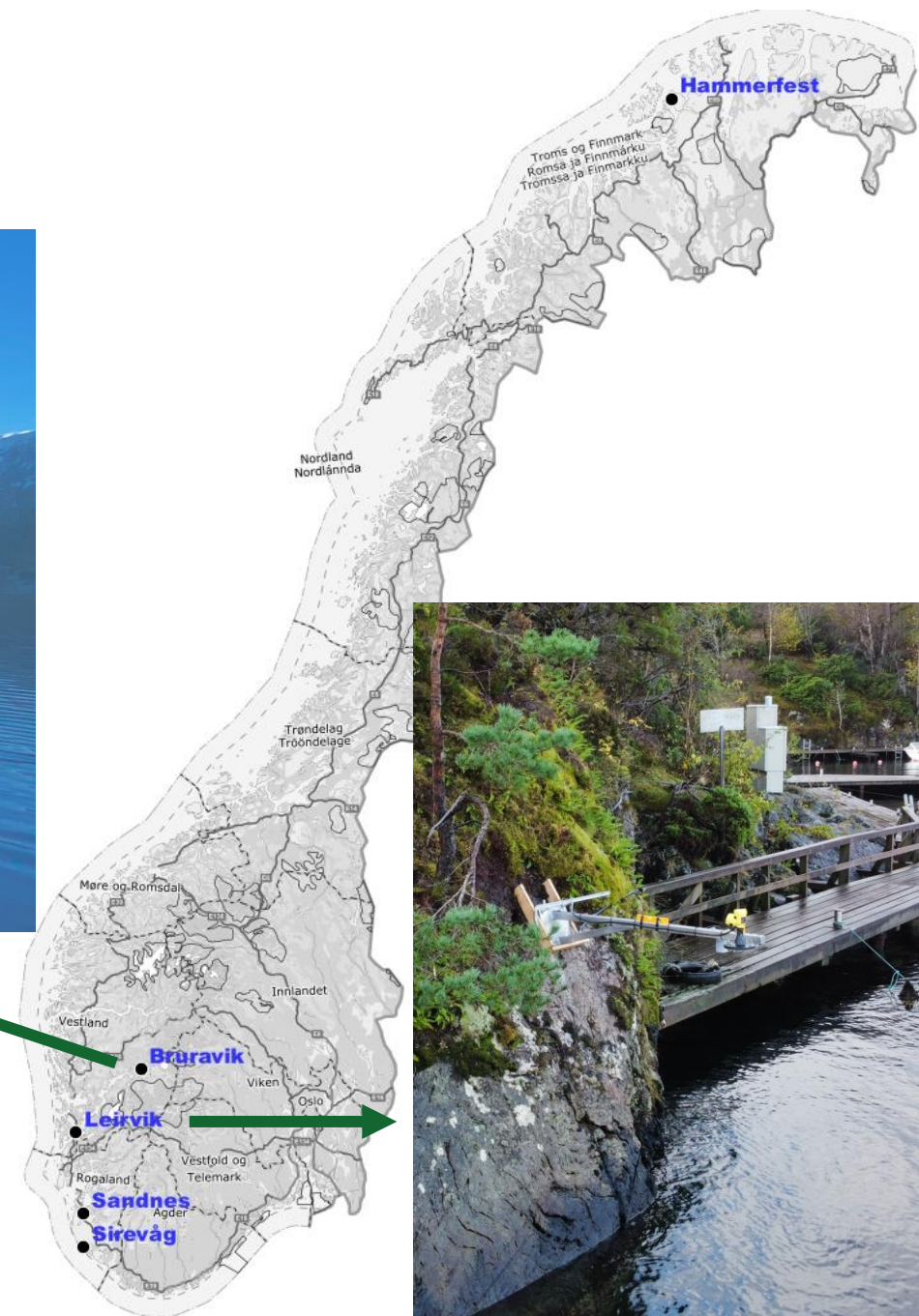
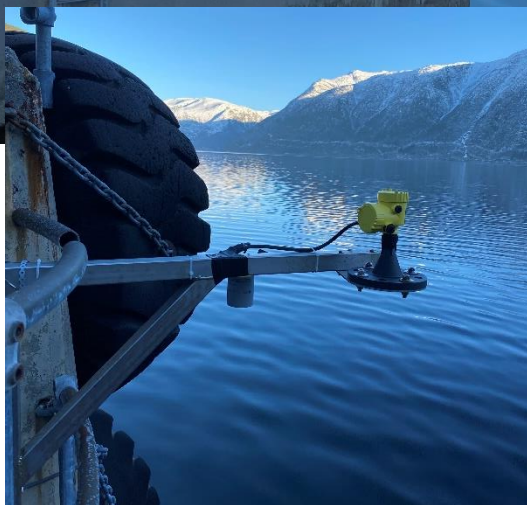
- 26 GHz
- 10° beam angle
- Flange for mounting on stilling tube



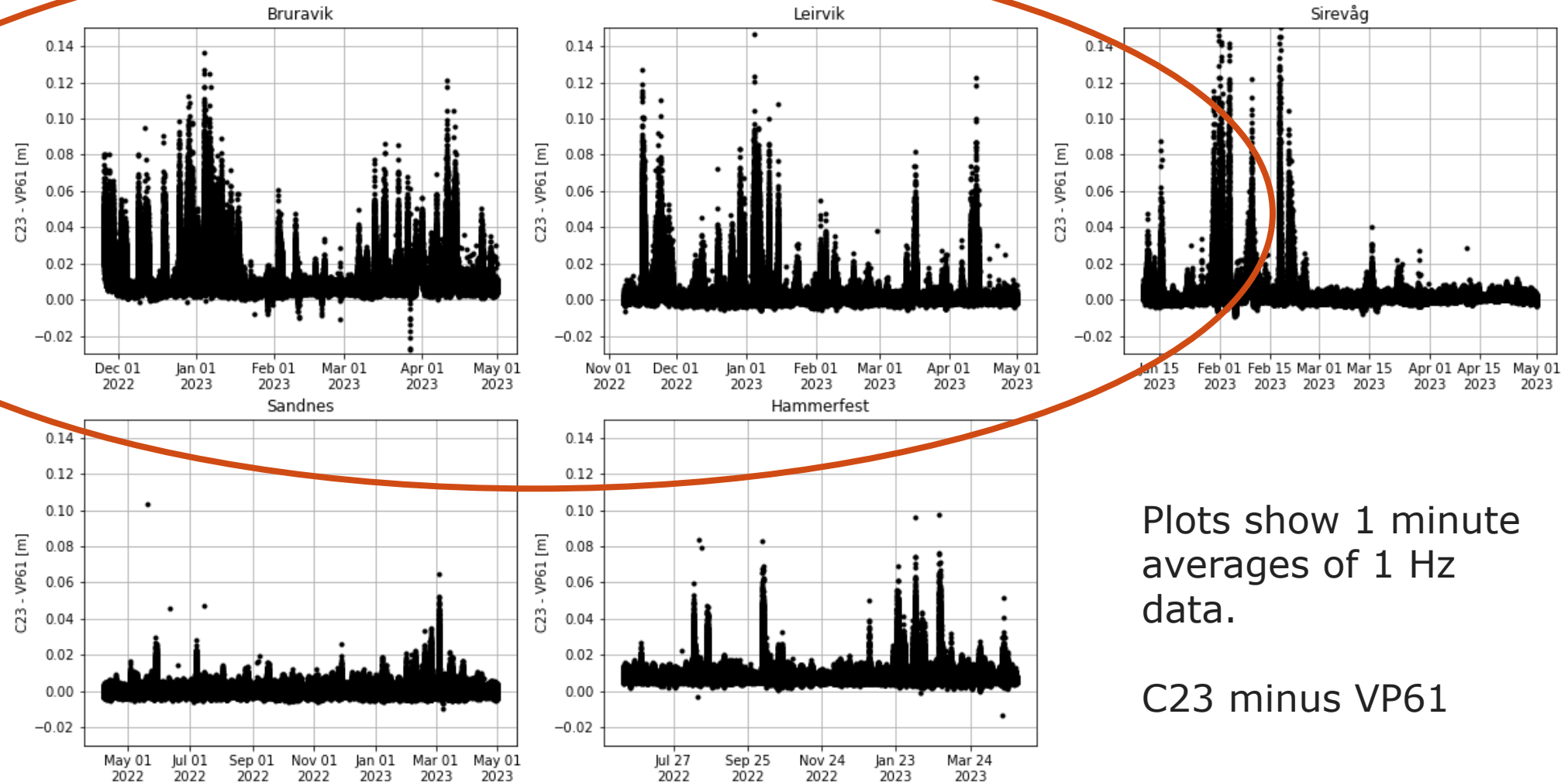
Logging

- Radars sampled by data logger every second
- Average values saved every minute

Stations



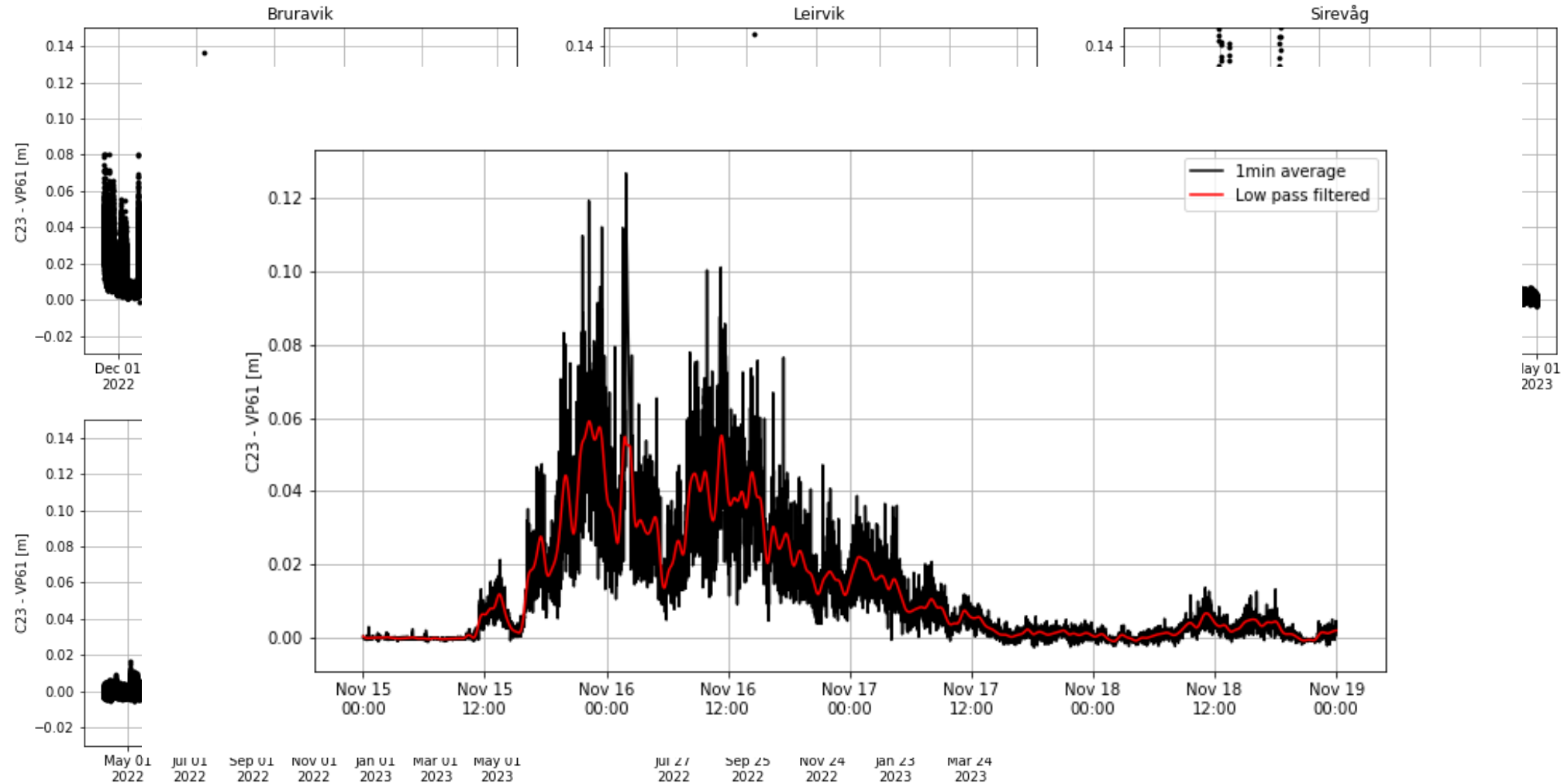
Difference in measured water level



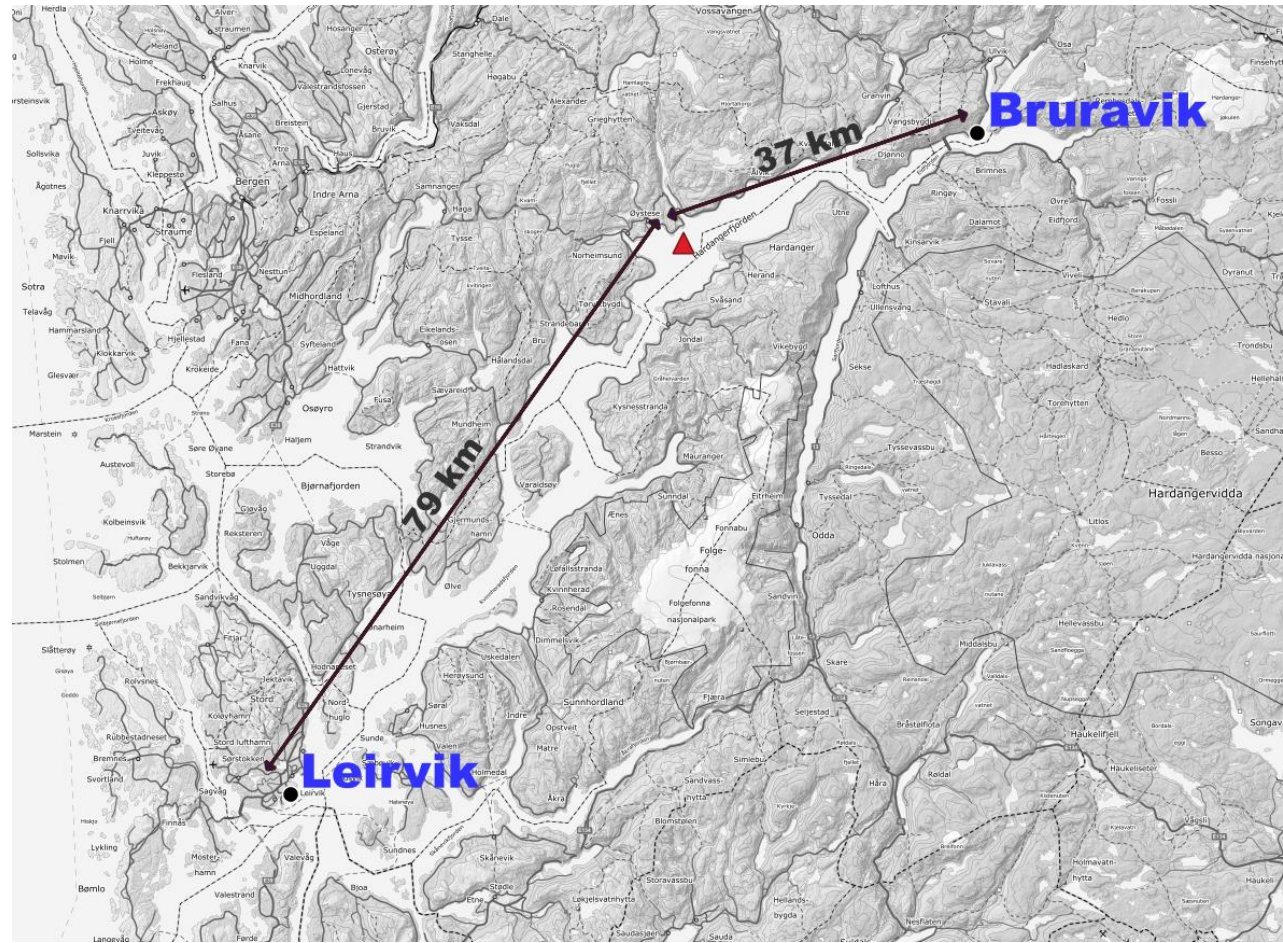
Plots show 1 minute averages of 1 Hz data.

C23 minus VP61

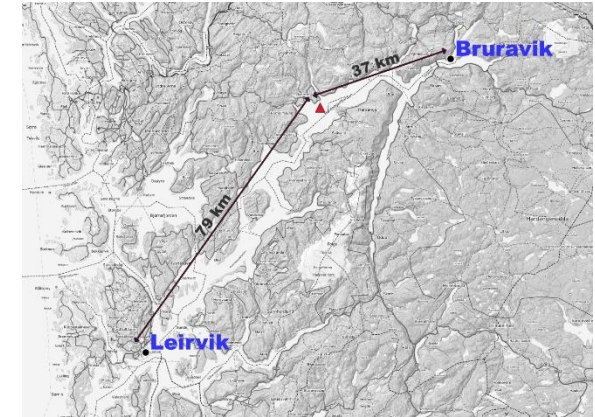
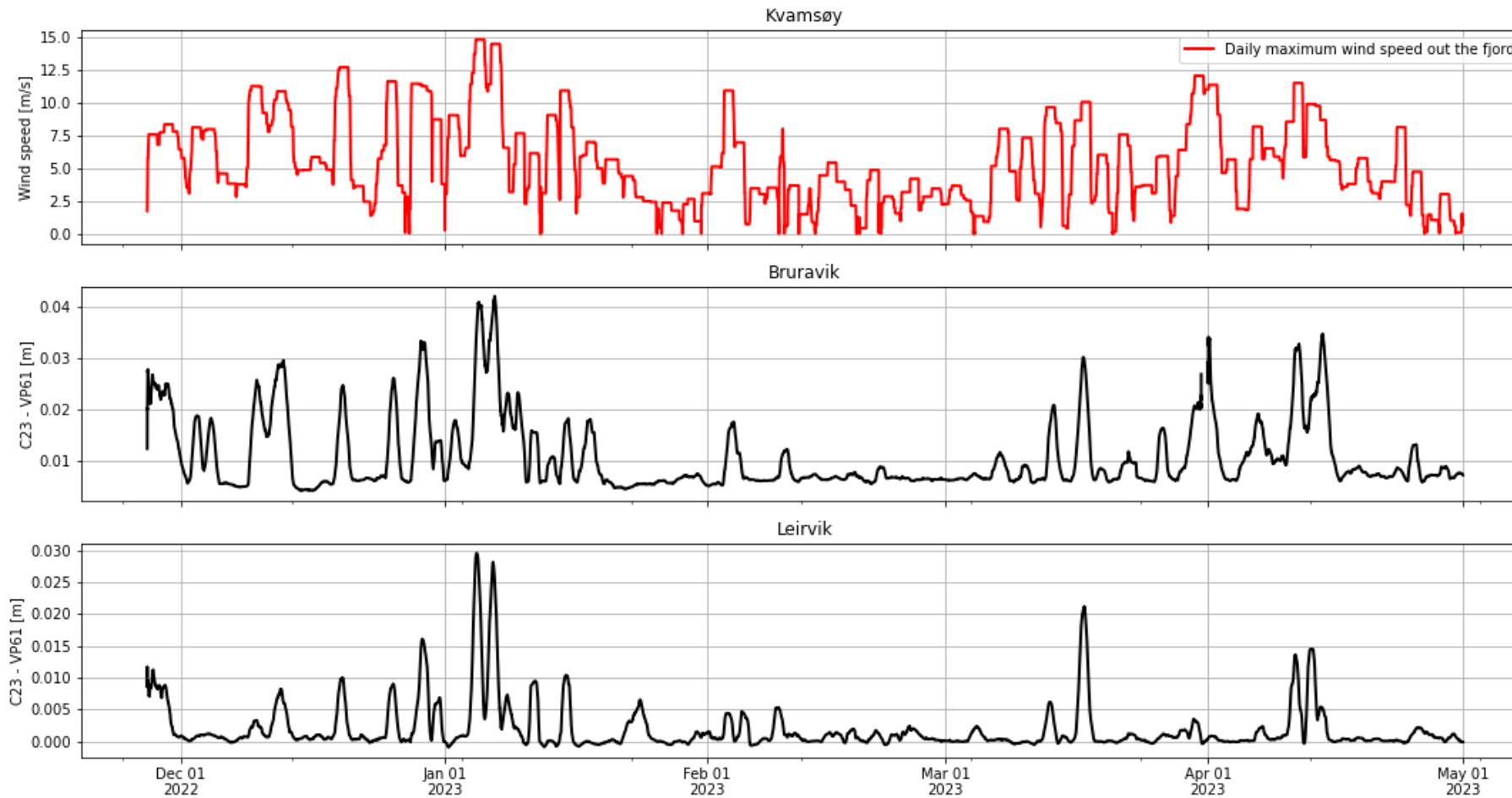
Difference in measured water level



Wind



Wind

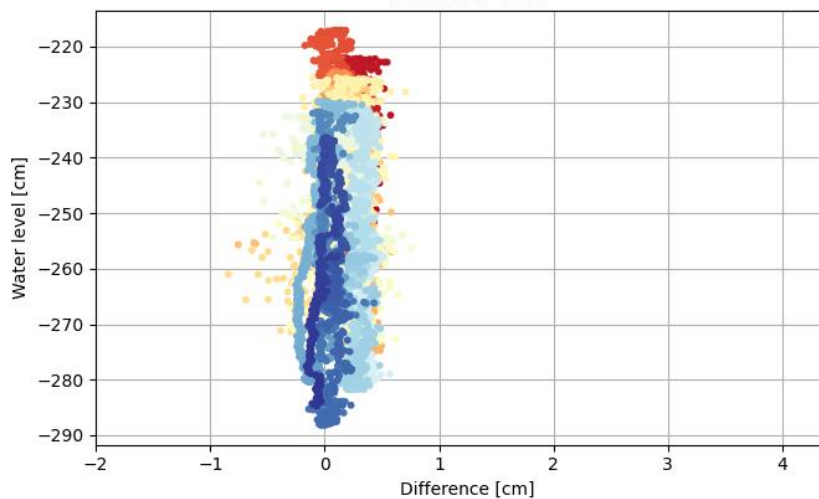
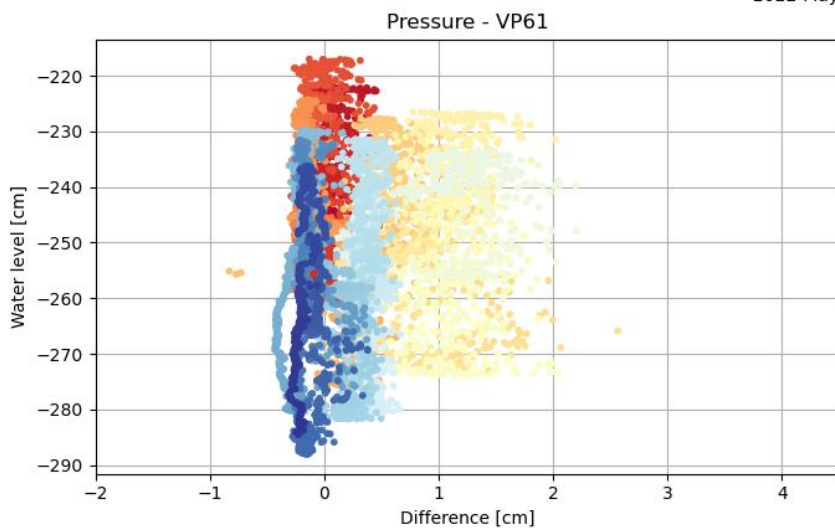
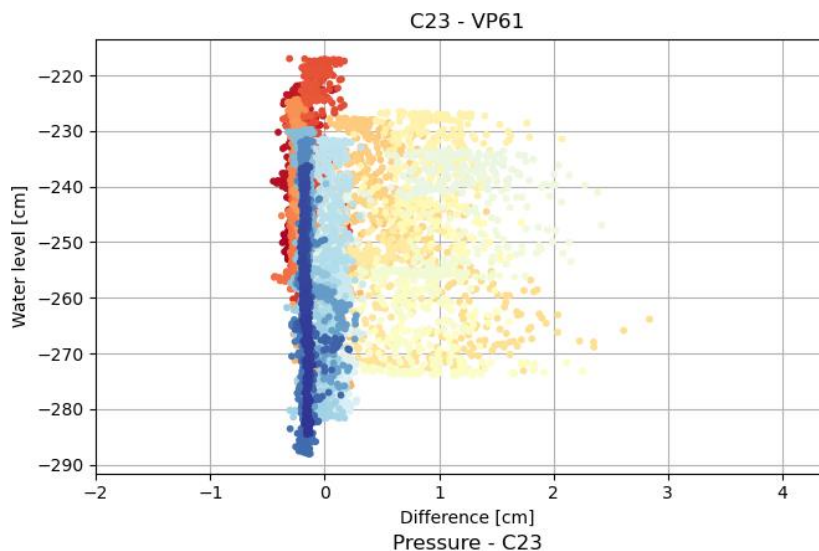
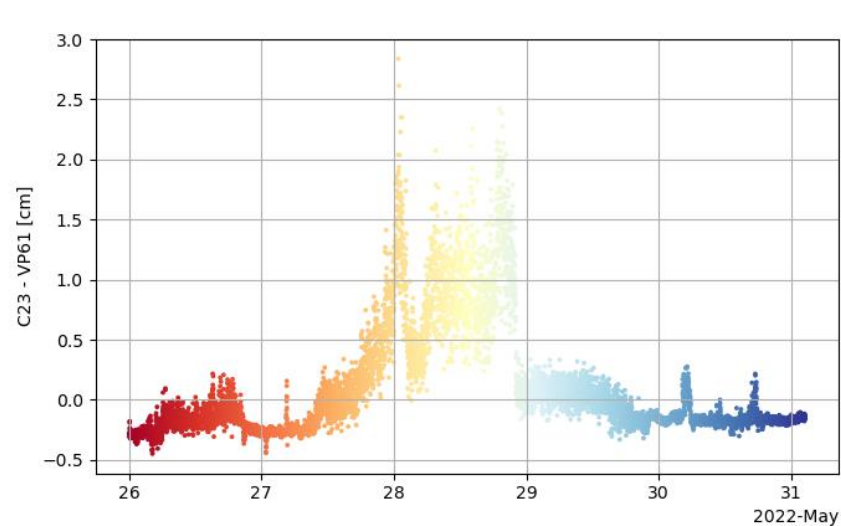


1 day running
averages

Bruravik



Pressure sensor comparison



Radar measurements in a pipe

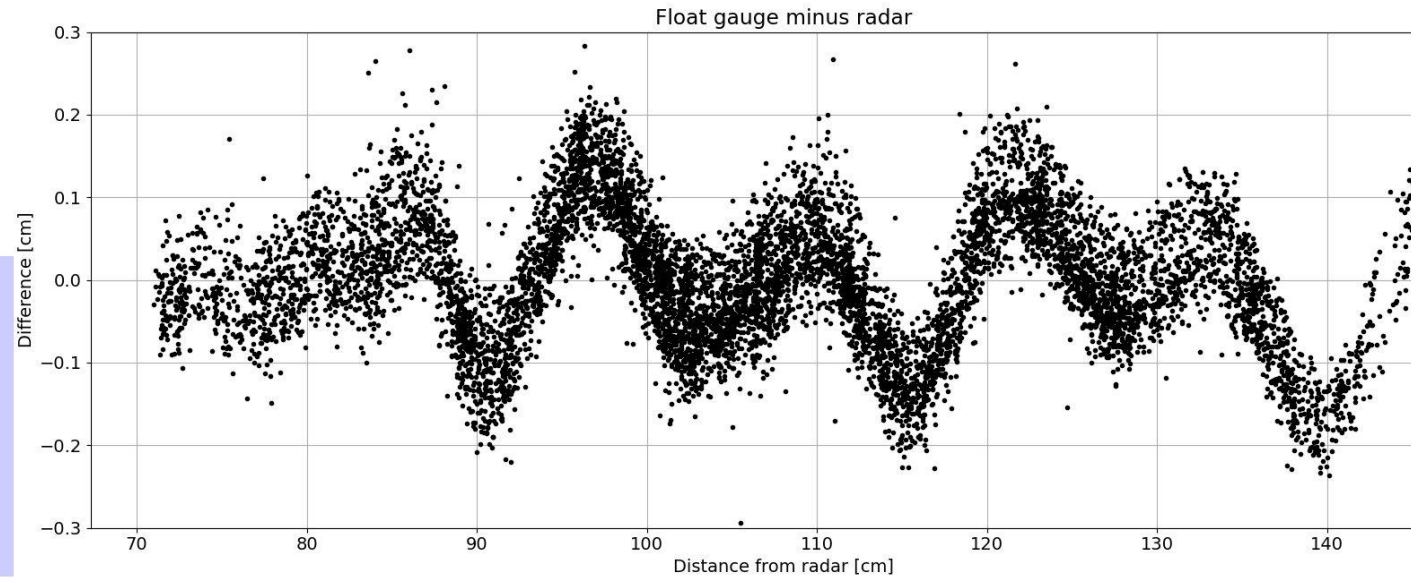
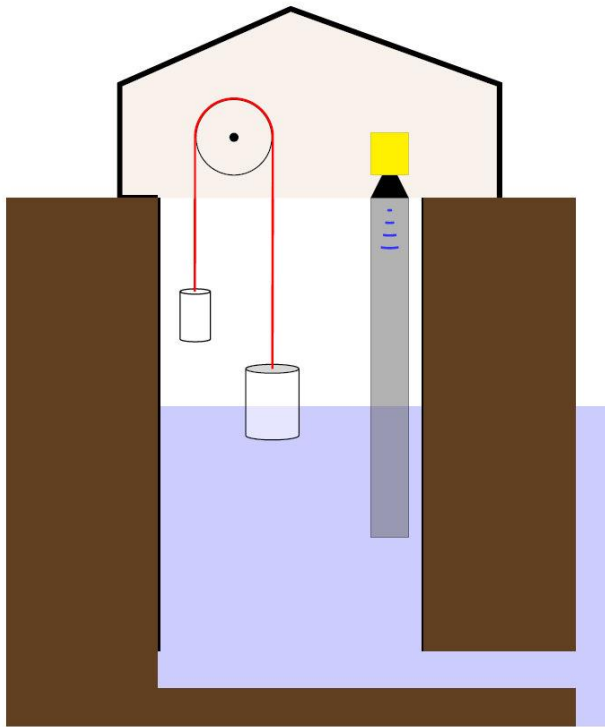


Photo from different installation



What's next

Vega Vegapuls C23

- 80 GHz
- 4° beam angle



Vega Vegapuls 61

- 26 GHz
- 10° beam angle



Geolux LX-80 10Hz

- 80 GHz
- 5° beam angle



OTT RLS

- 24 GHz
- 5° beam angle



What's next

2 Level troll pressure sensors



Vega Vegapuls 61 in a pipe



Summary

- Measuring water level with two different radars from Vega at each new site
- 1 min averages of 1 Hz data can differ by nearly 15 cm
- There are indications that Vegapuls 61 is the one that is adversely affected by a rough sea surface
- When measuring the water level with radar inside a pipe, interference seems to affect the measurements with a couple of millimeters
- The new test will hopefully provide us with a better basis for making informed decisions in the ongoing work to densify the permanent tide gauge network.



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