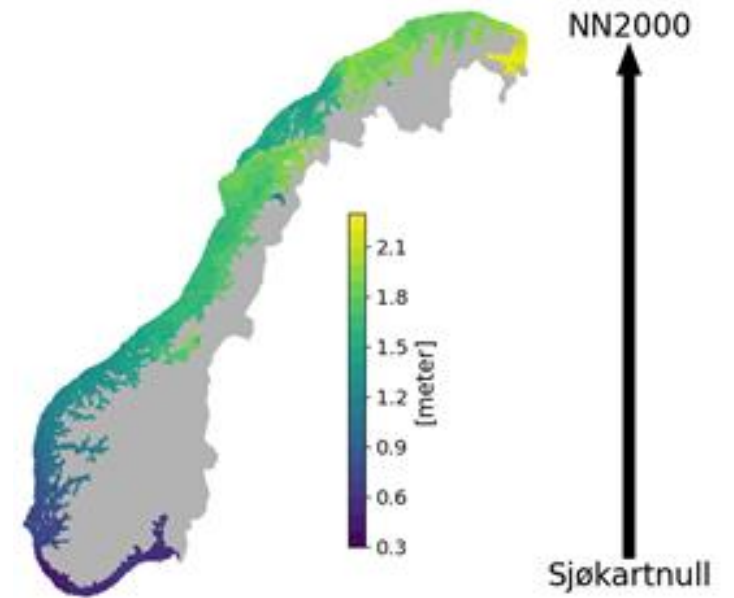
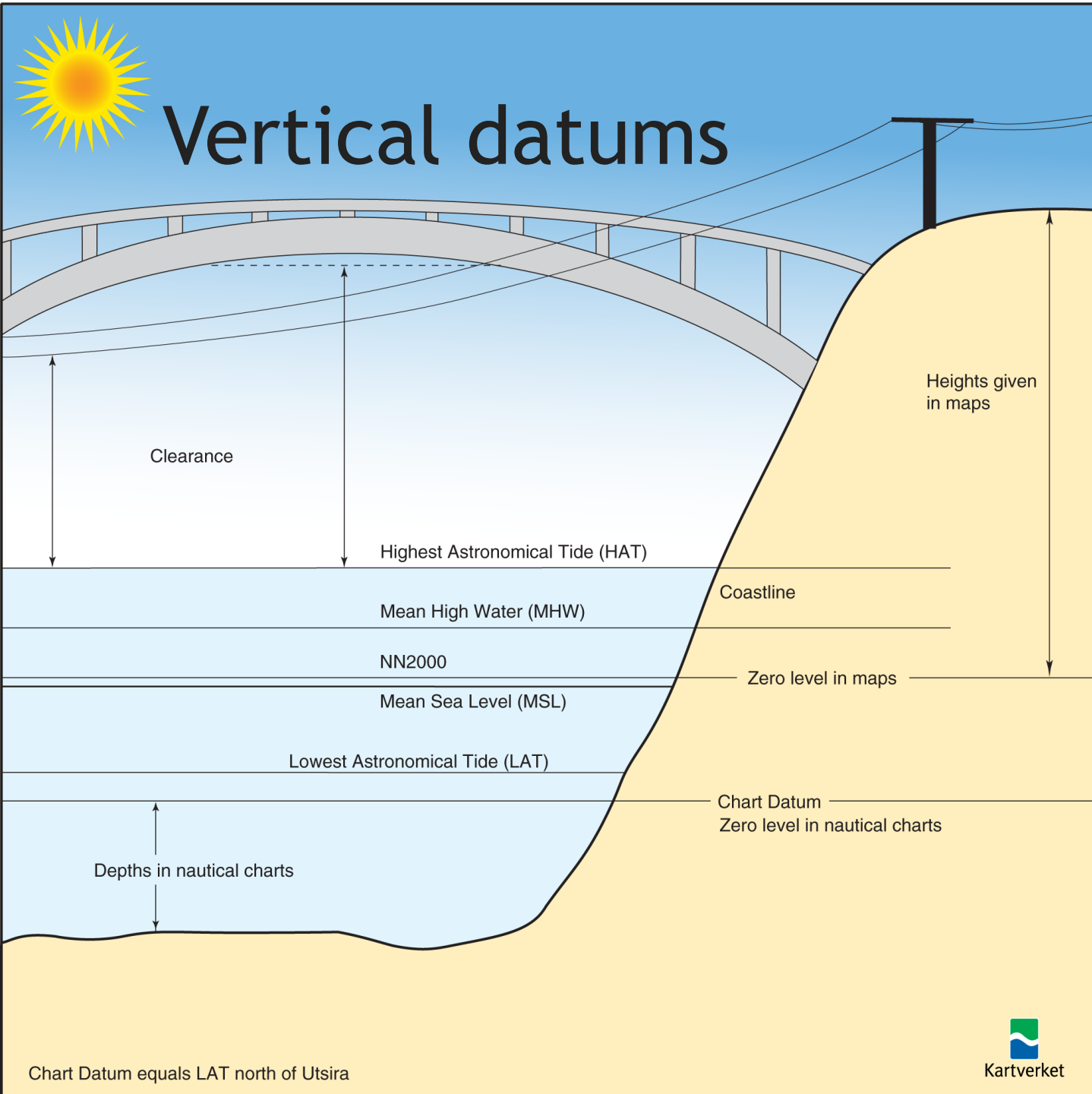


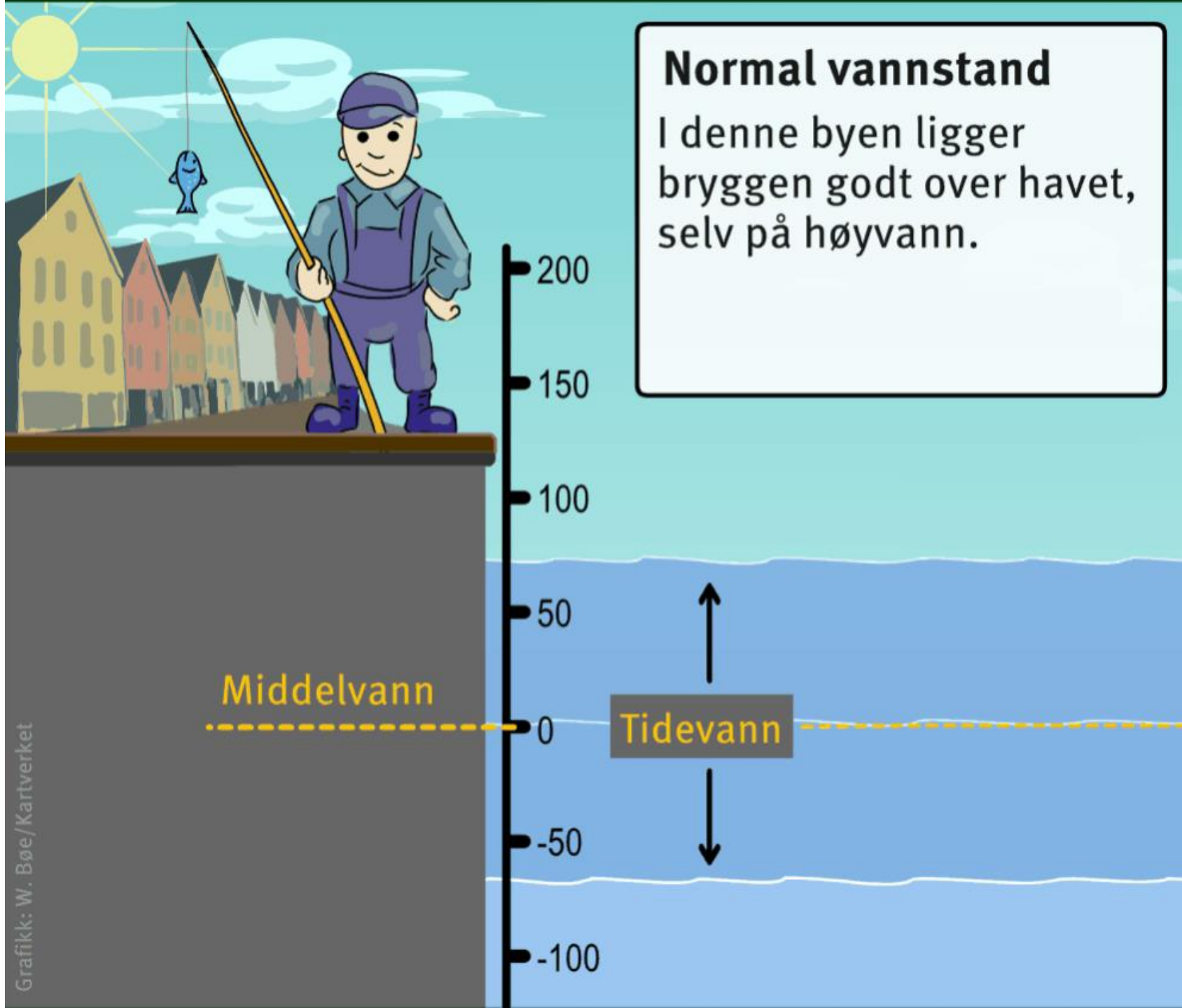
Extreme sea levels and vertical datums at sea

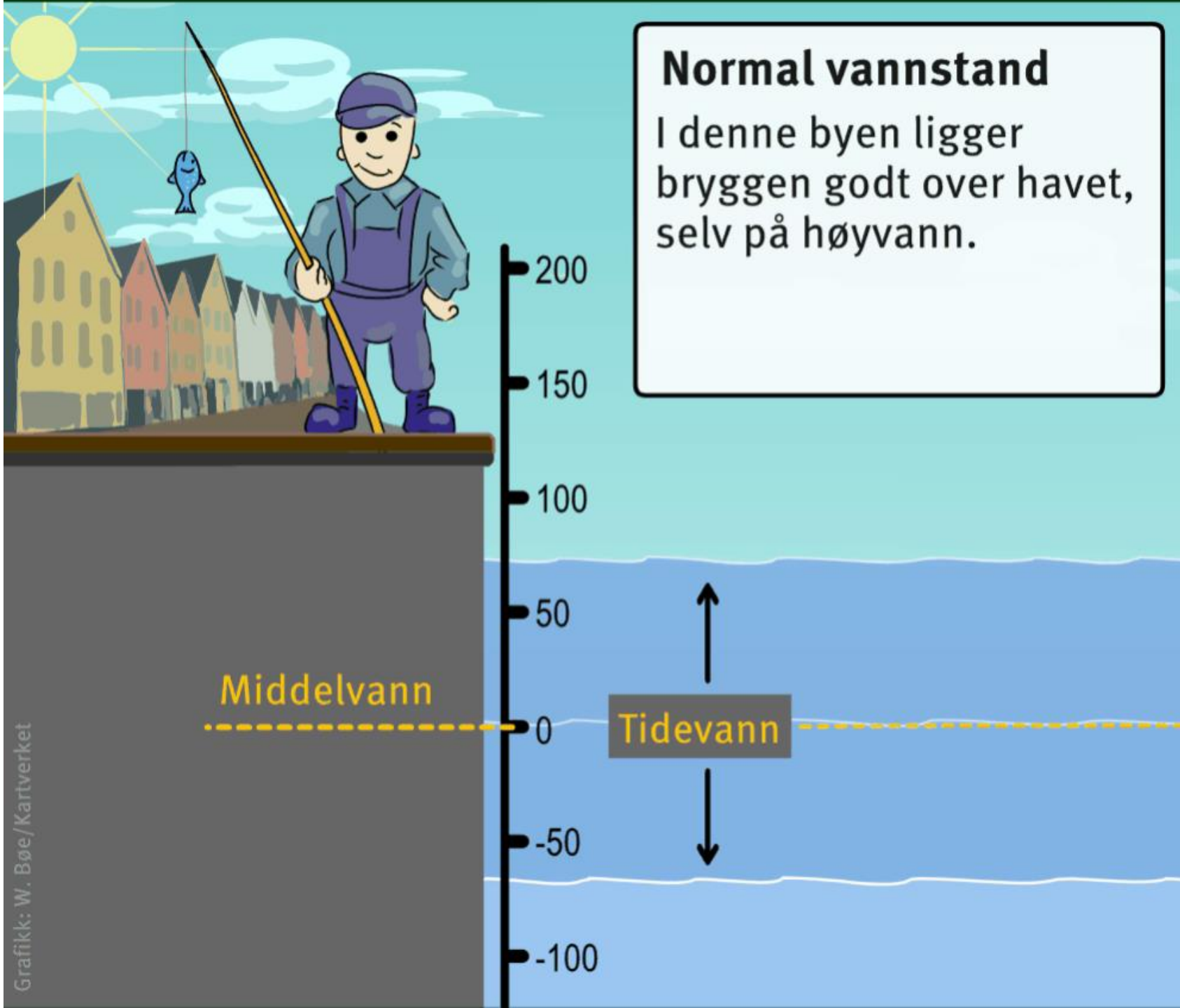
Hilde Sande Borck



Foto: Bjørge Stavik



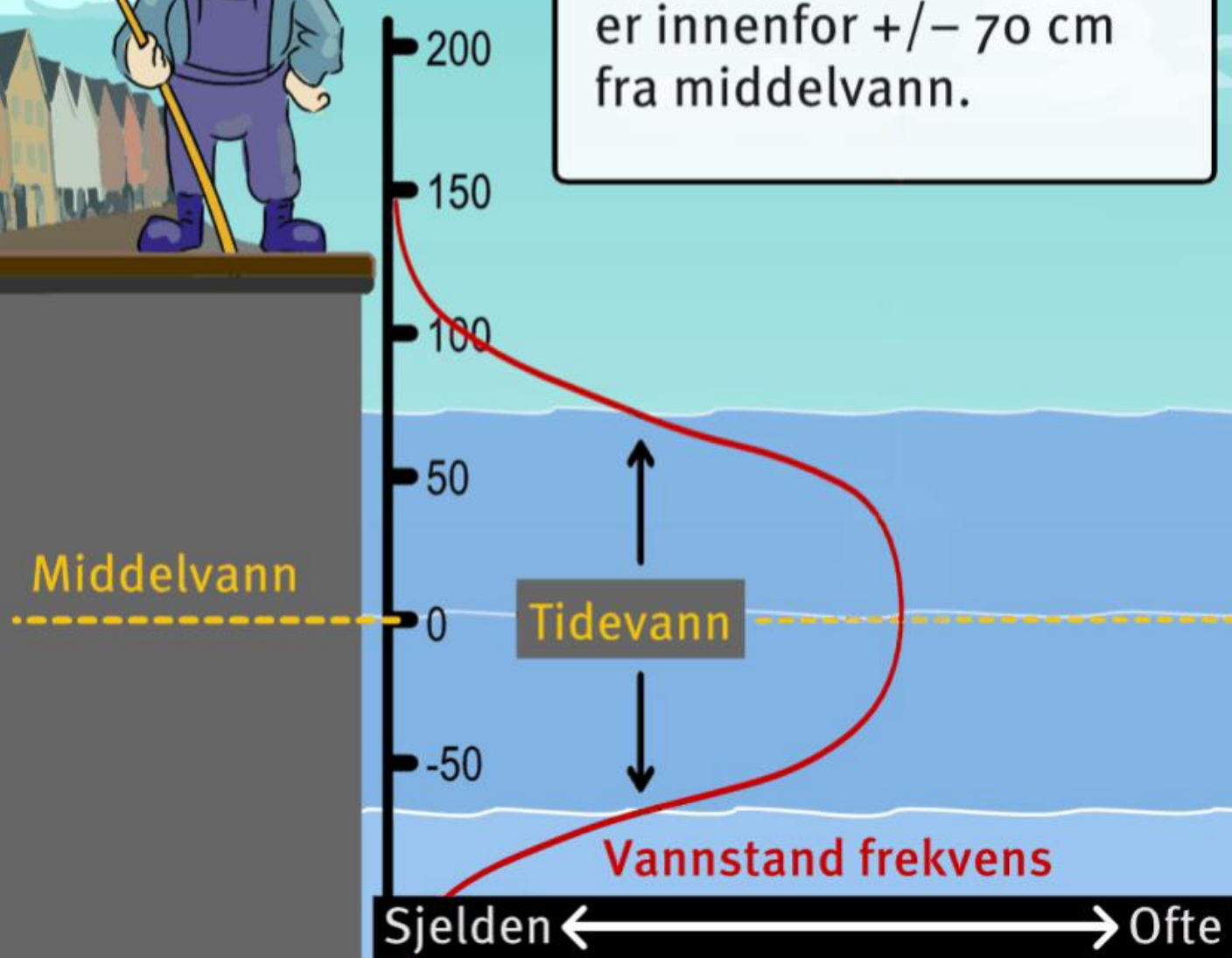






Vannstand frekvens:

Målinger viser at vannstanden som regel er innenfor ± 70 cm fra middelvann.



30 stations -> water level data «everywhere»

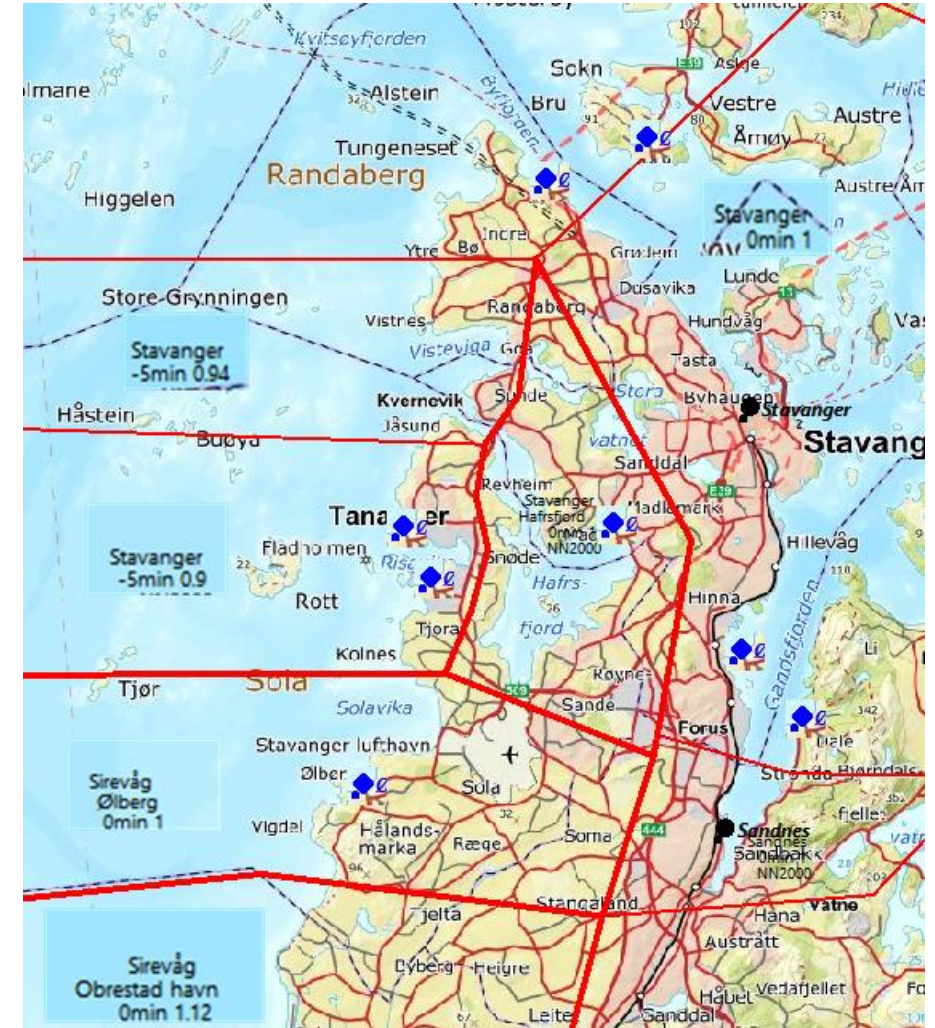


Observed water level:

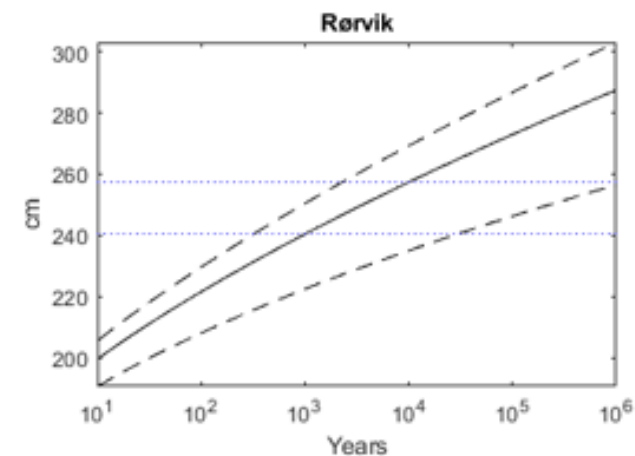
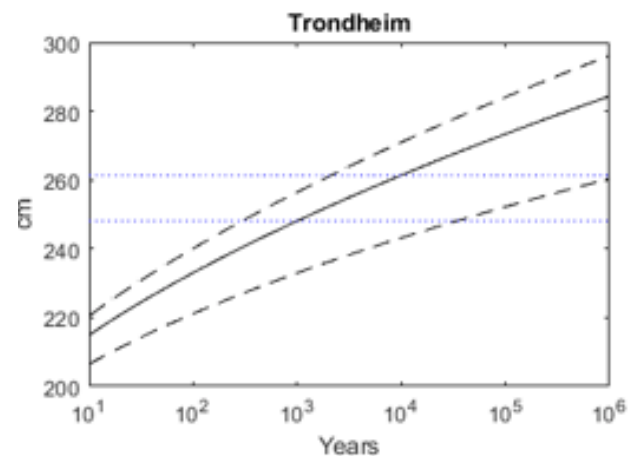
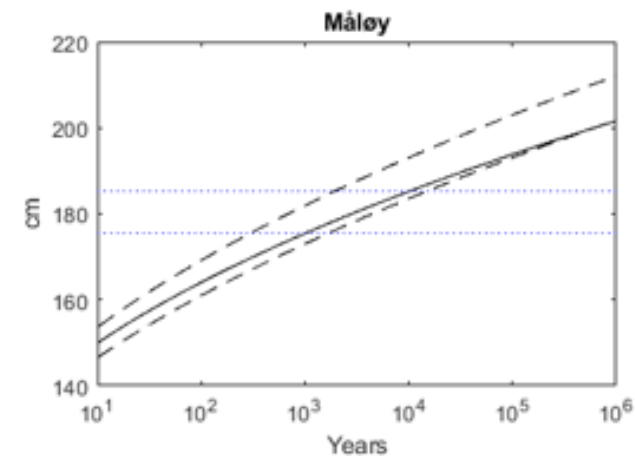
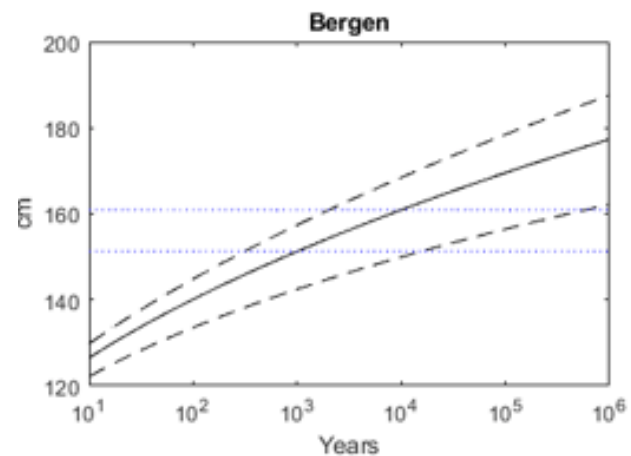
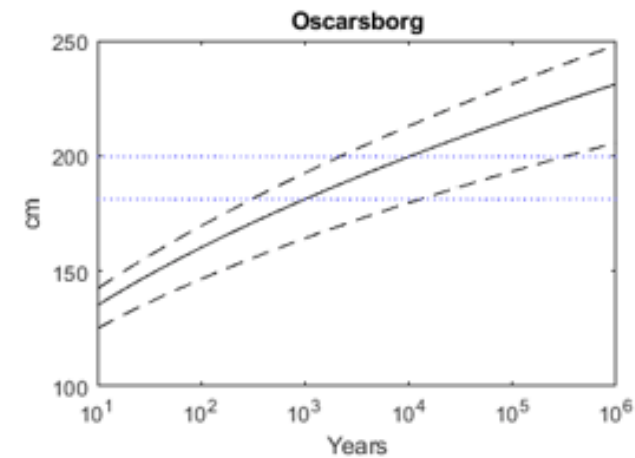
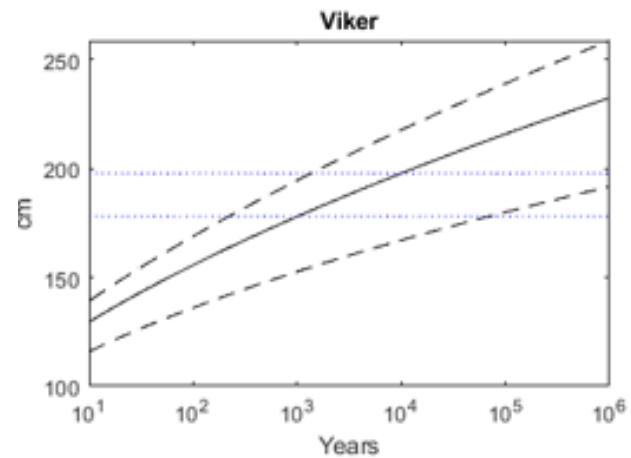
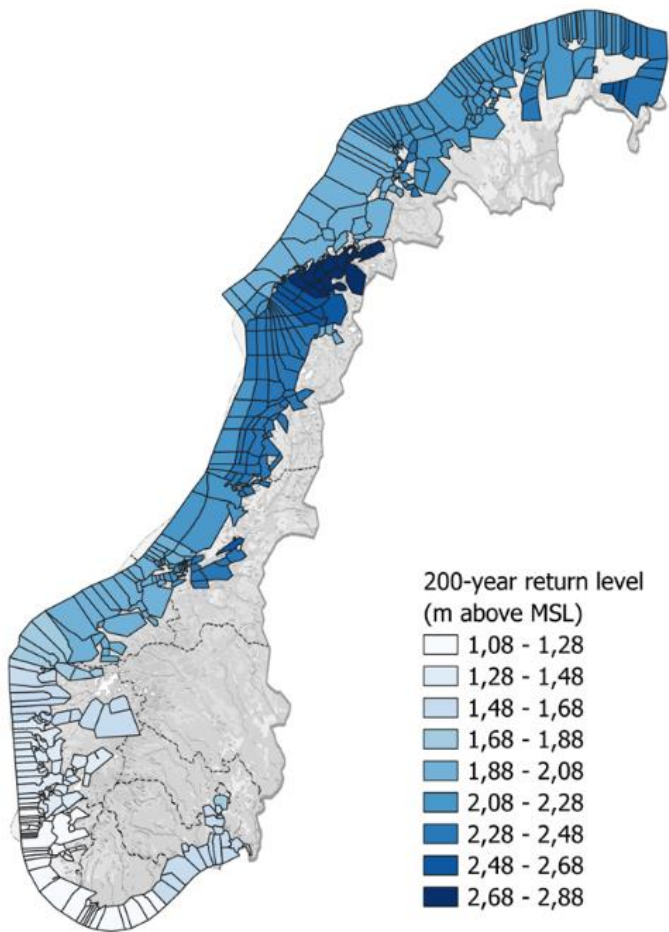
- Without surface waves
- Tide and surge

Estimated water level data:

Estimated local tide
+
observed surge from
«nearby» permanent station



Extreme values published spring 2024



We use ACER: a method from NTNU

Journal of Coastal Research	29	5	1029–1048	Coconut Creek, Florida
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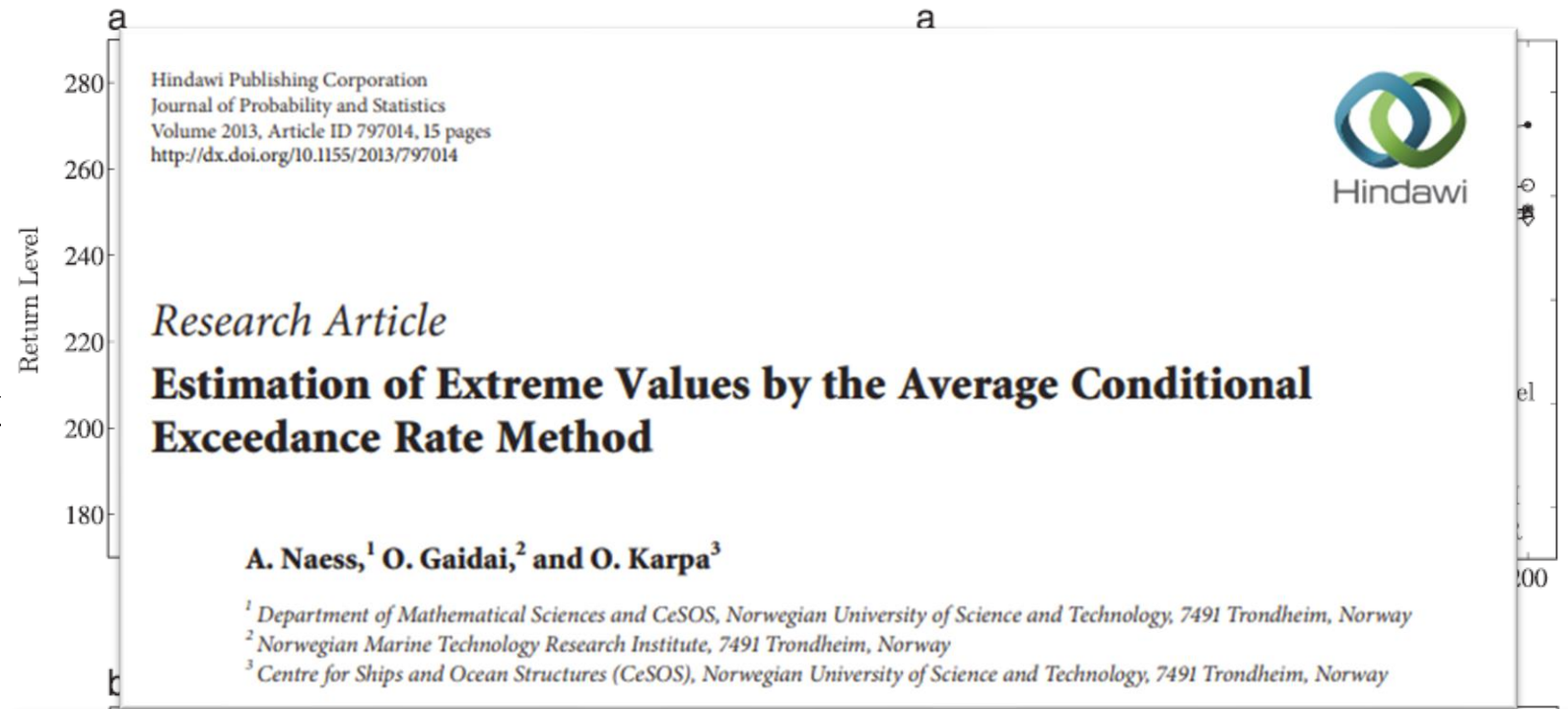
Statistics of Extreme Sea Levels for Locations along the Norwegian Coast

Morten Skjong[†], Arvid Naess[‡], and Ole Erik Brandrud Naess[§]

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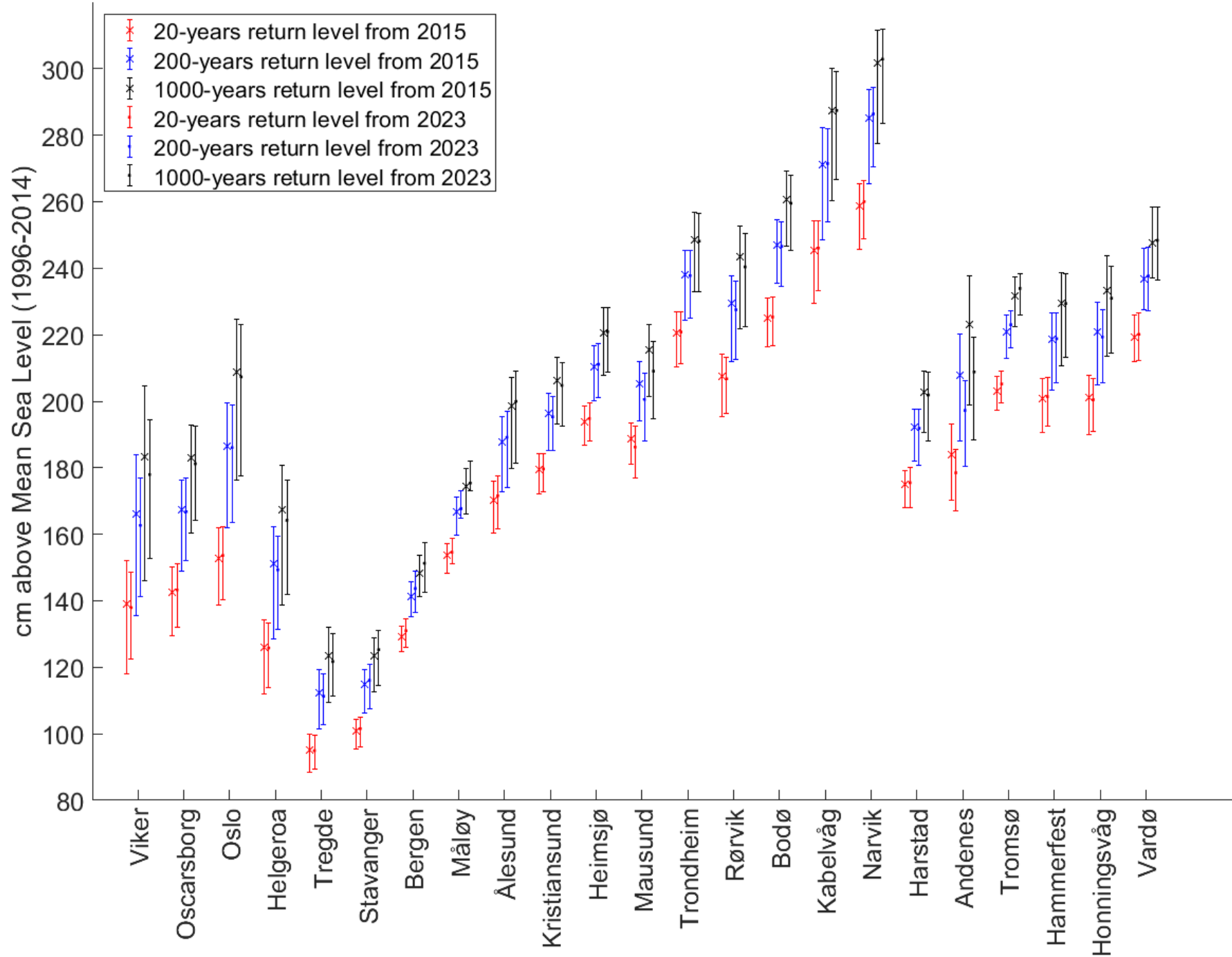
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www.cerf-jcr.org



Comparing extreme still water levels from 2015 with new values in 2023



Se havnivå - your location

Kartverket ← At Sea ← Se havnivå ← Search result

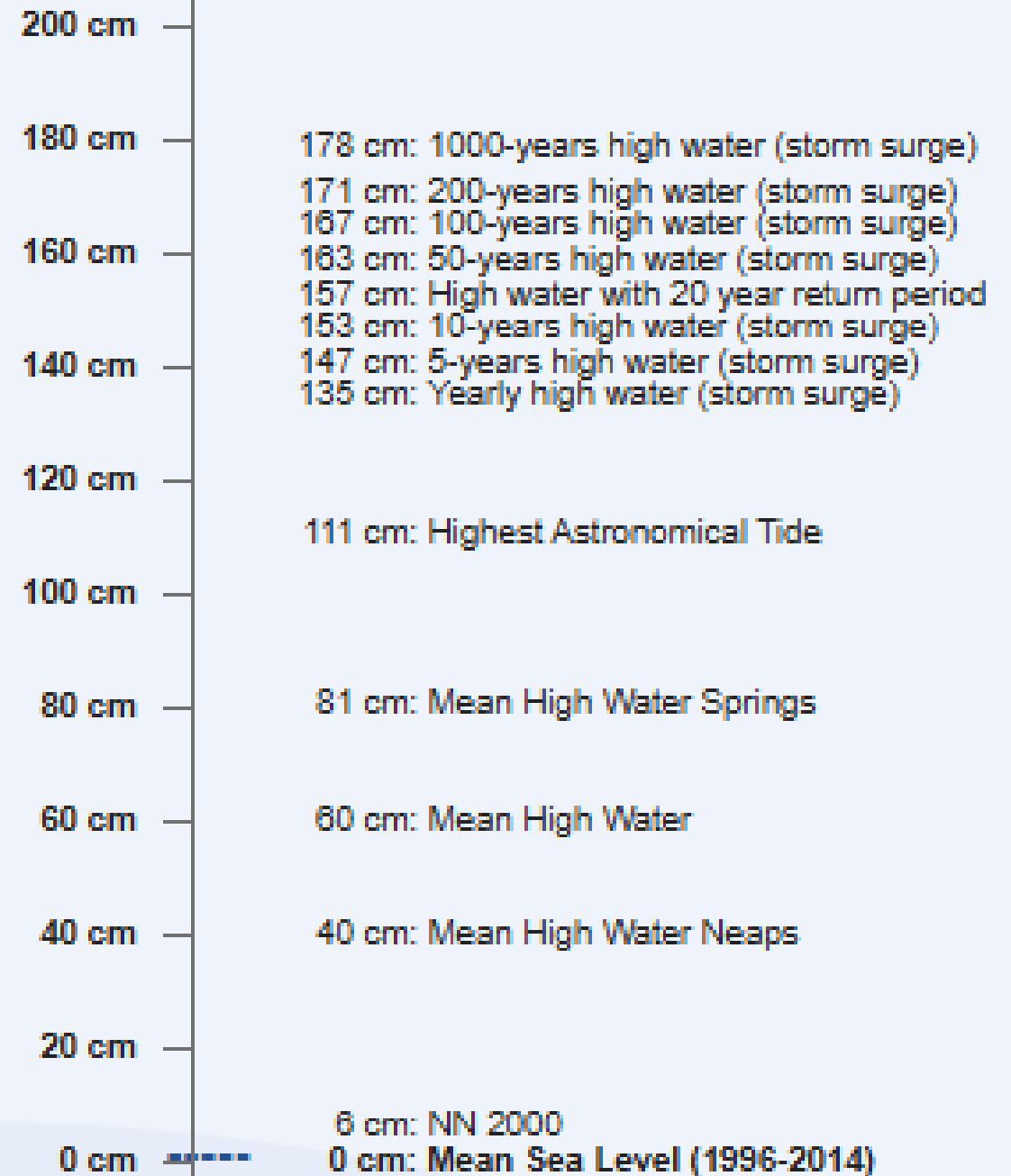
Water level and tidal information

Place Position

sandane

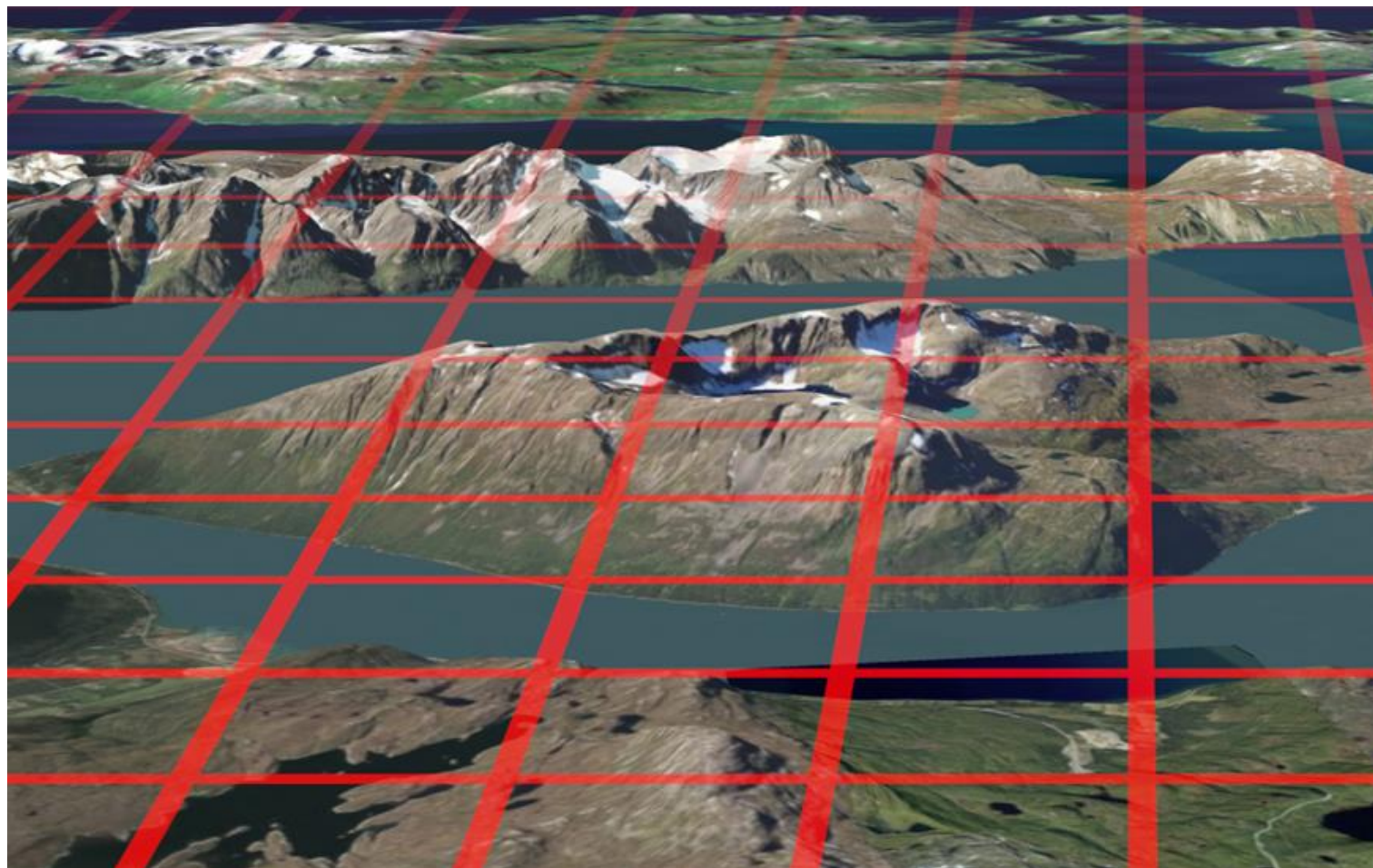
Search result for Sandane at
<https://kartverket.no/en/at-sea/se-havniva/>

Tides adjusted with 0 minutes and height factor 1.03
and observed weather effect from Måløy



Gridded models: transformation between datums

- NN2000 above the ellipsoid (href)
- NN2000 above Chart Datum
- Mean sea level above the ellipsoid
- Mean sea level above NN2000
- Mean sea level above the geoid
- Mean sea level above Chart Datum
- Mean sea level above LAT
- Chart Datum above the ellipsoid
- Mean high water above NN2000
- Mean high water above the ellipsoid



Gridded models for vertical datums at Geonorge



Questions?

→ Hilde.Sande.Borck@kartverket.no

Find data for your location at Se havnivå: <https://kartverket.no/en/at-sea/se-havniva>

Find gridded models for vertical datums at geonorge.no



Kartverket

Read more about vertical datums in Norwegian: [Vannstandsnivå | Kartverket.no](http://Vannstandsniva | Kartverket.no)

Technical reports from Kartverket (will soon include extreme values):
<https://www.kartverket.no/forskning-og-utvikling-fou/rapporter>

See the full animation of storm surges and sea level rise:
<https://kartverket.no/globalassets/kodefiler/grafikk/stormflo/stormflo-animasjon.html>