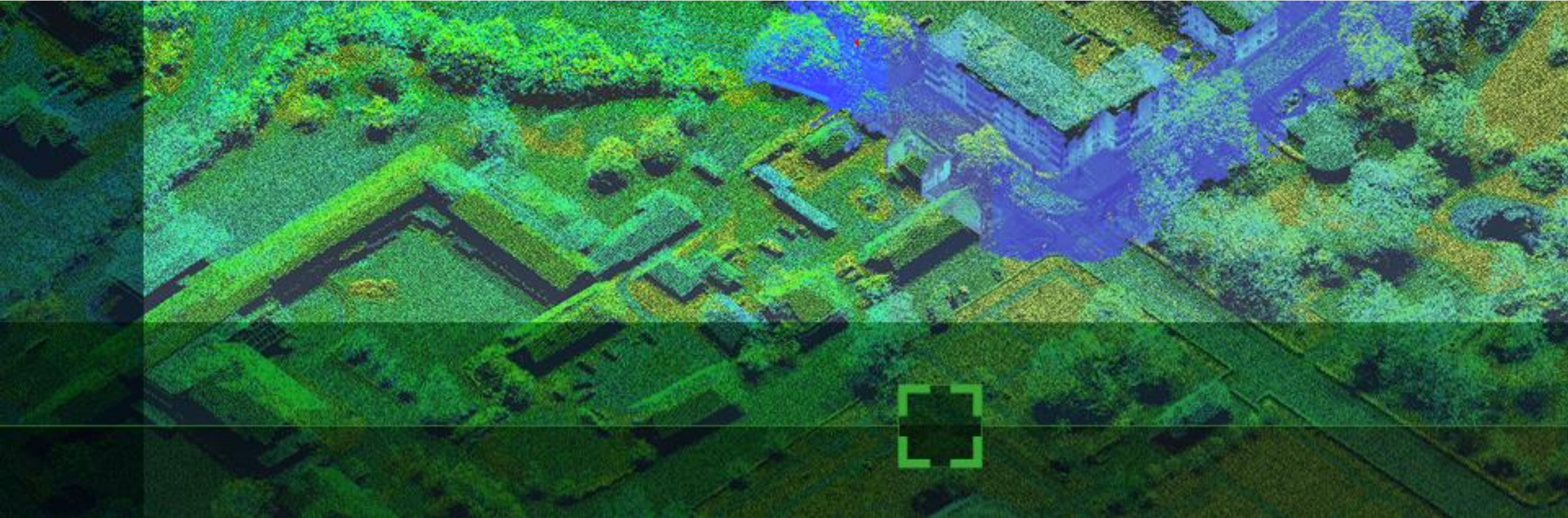


National report from Norway

Aksel Voldsund

NSHC-TWG 27.09.2022



Tide tables

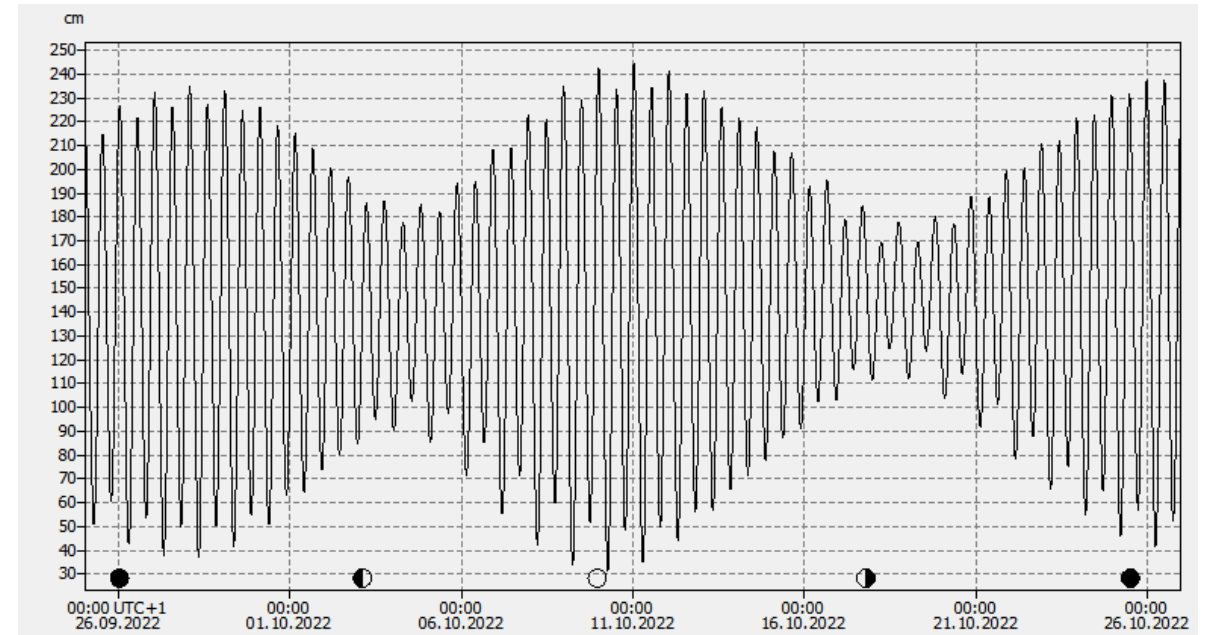
From 01.01.2022 the Norwegian Hydrographic service decided to no longer produce Tide Tables for the Norwegian coast as one official publication



Harmonic constituents

All harmonic constituents are recalculated for the entire network:

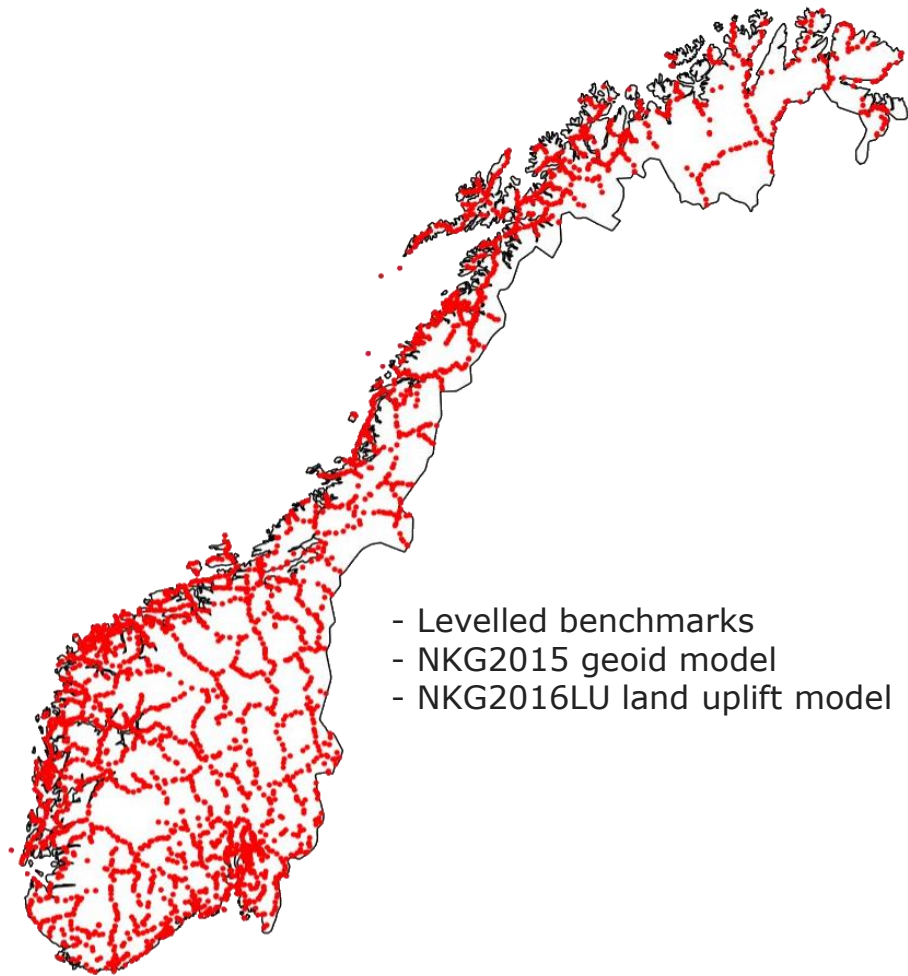
- Based on 15 years of data (more for Sa)
- All constituents with S/N ratio > 2 are included



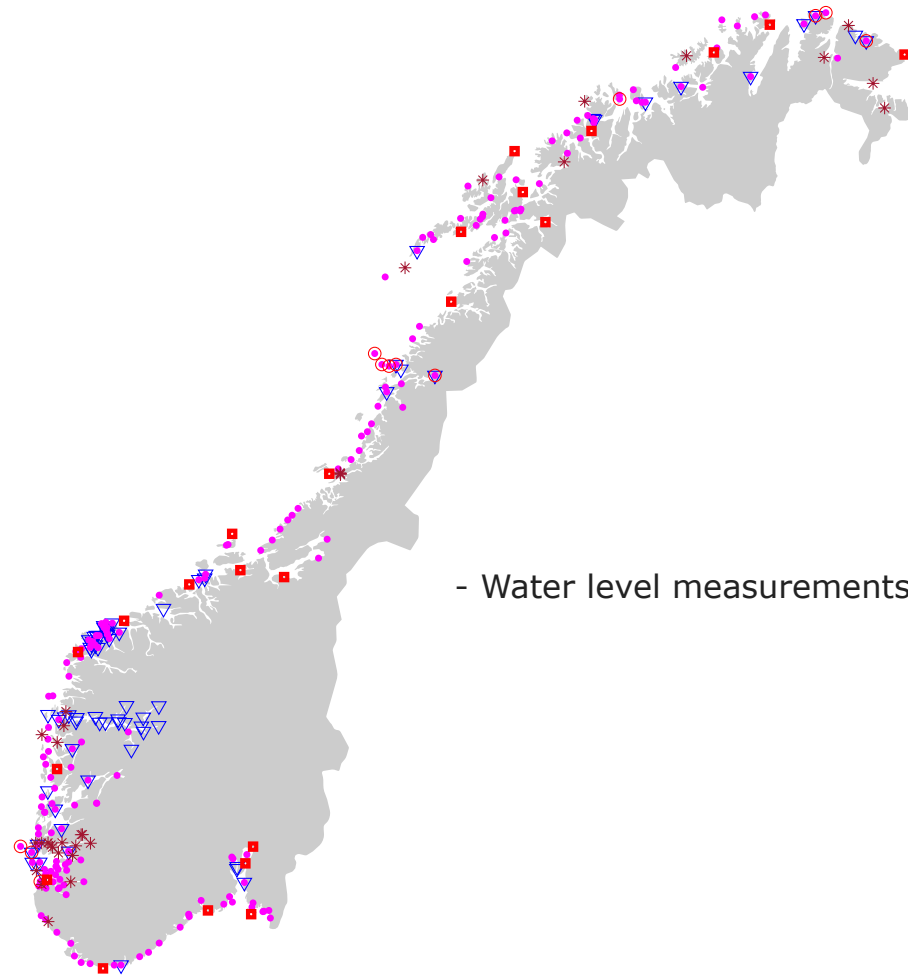
Vertical datums- separation models



Data



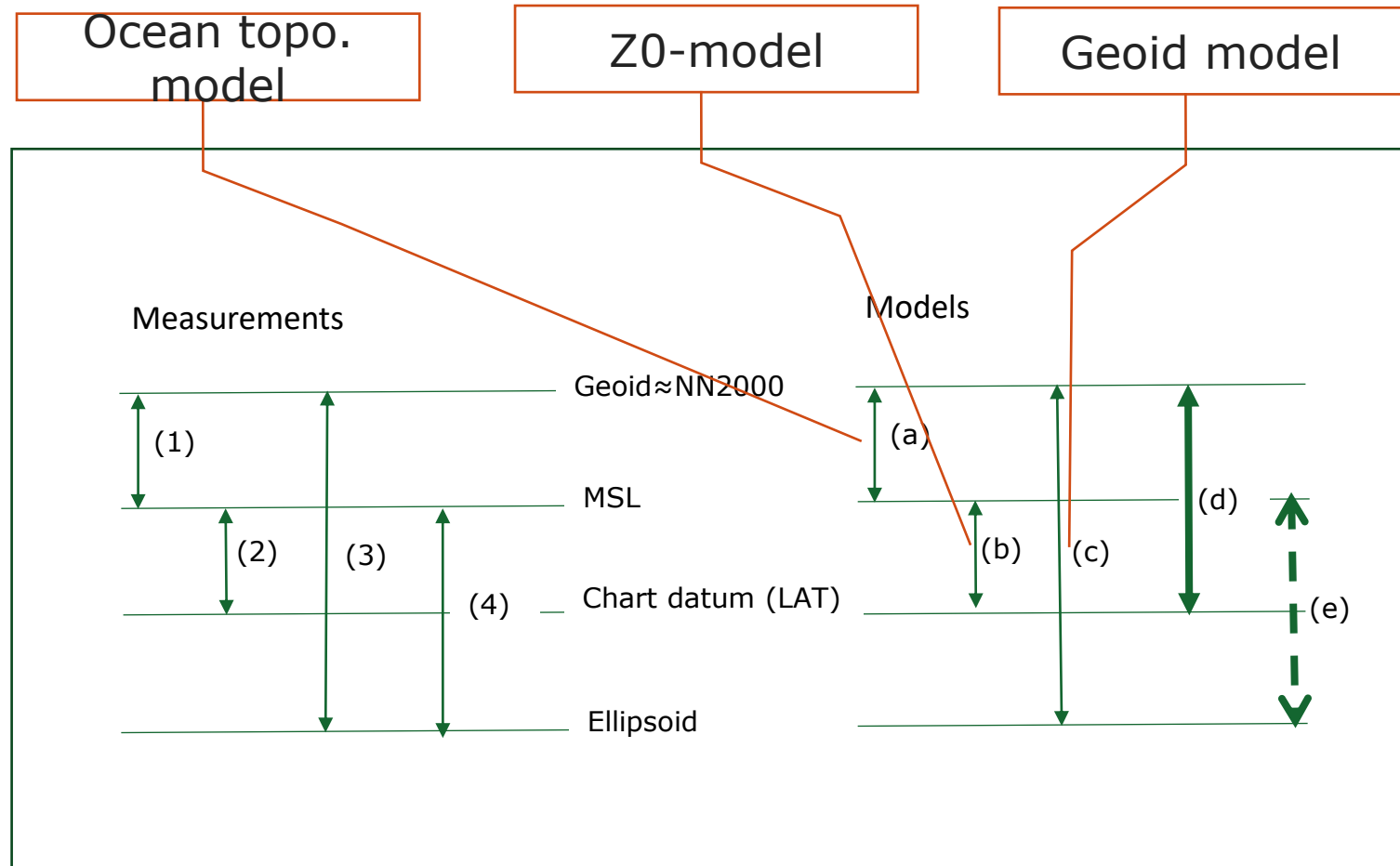
- Levelled benchmarks
- NKG2015 geoid model
- NKG2016LU land uplift model



- Water level measurements

Method - least squares collocation

- Advanced form of curve fitting
- Use sea distances
- Calculate the geoid relative to MSL and the ellipsoid in one operation
- MSL related to LAT is calculated in a separate process
- The different models are combined



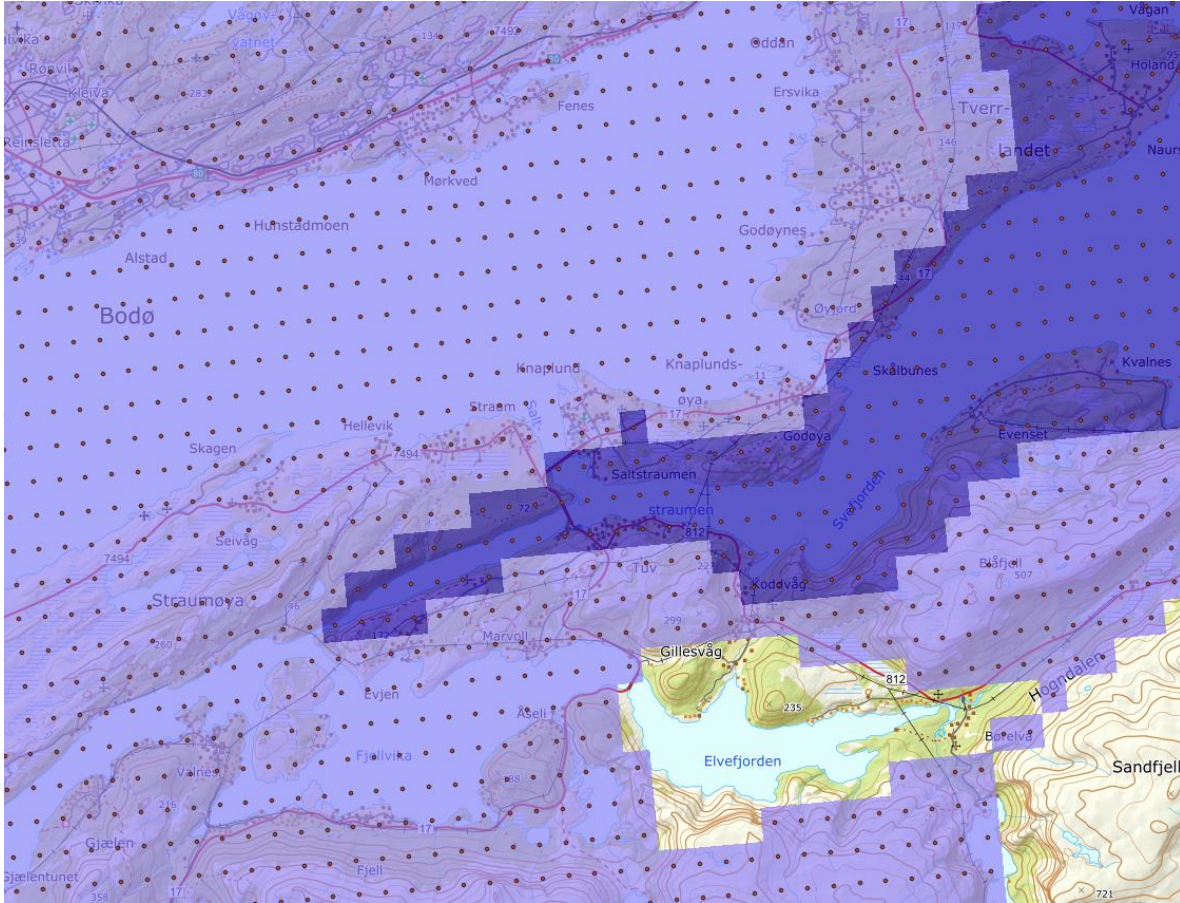
(In)valid areas



Outer limit: territorial border

Some semienclosed fjord basins have lack of sea level data -> Z0 cannot be estimated

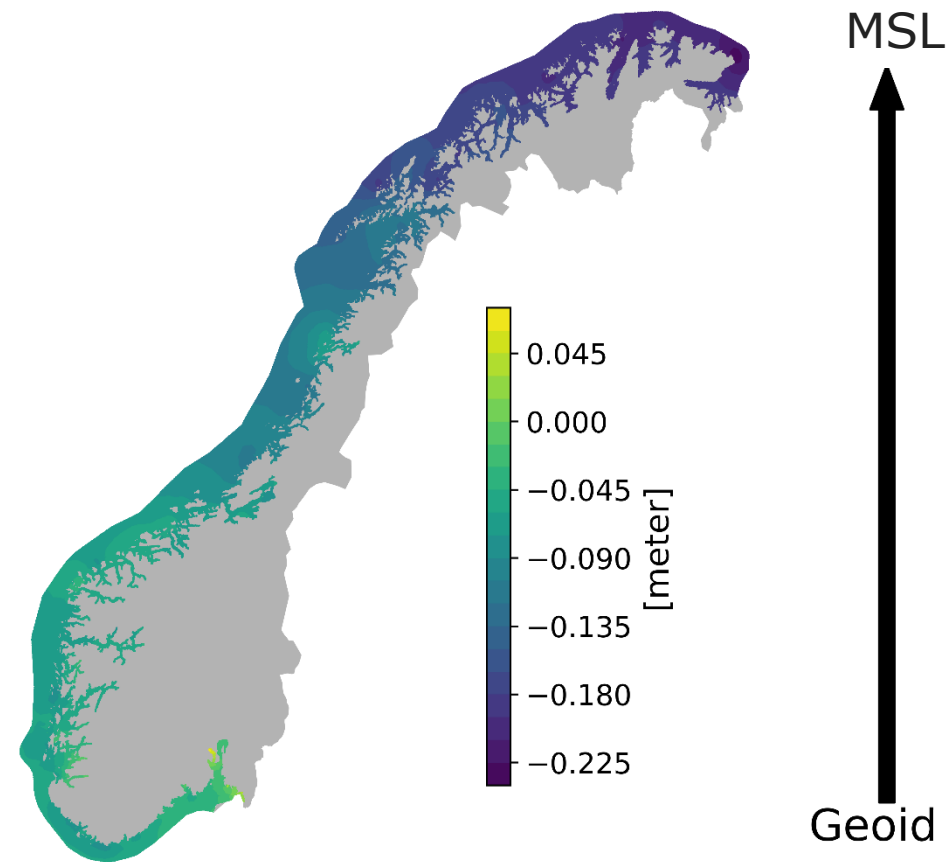
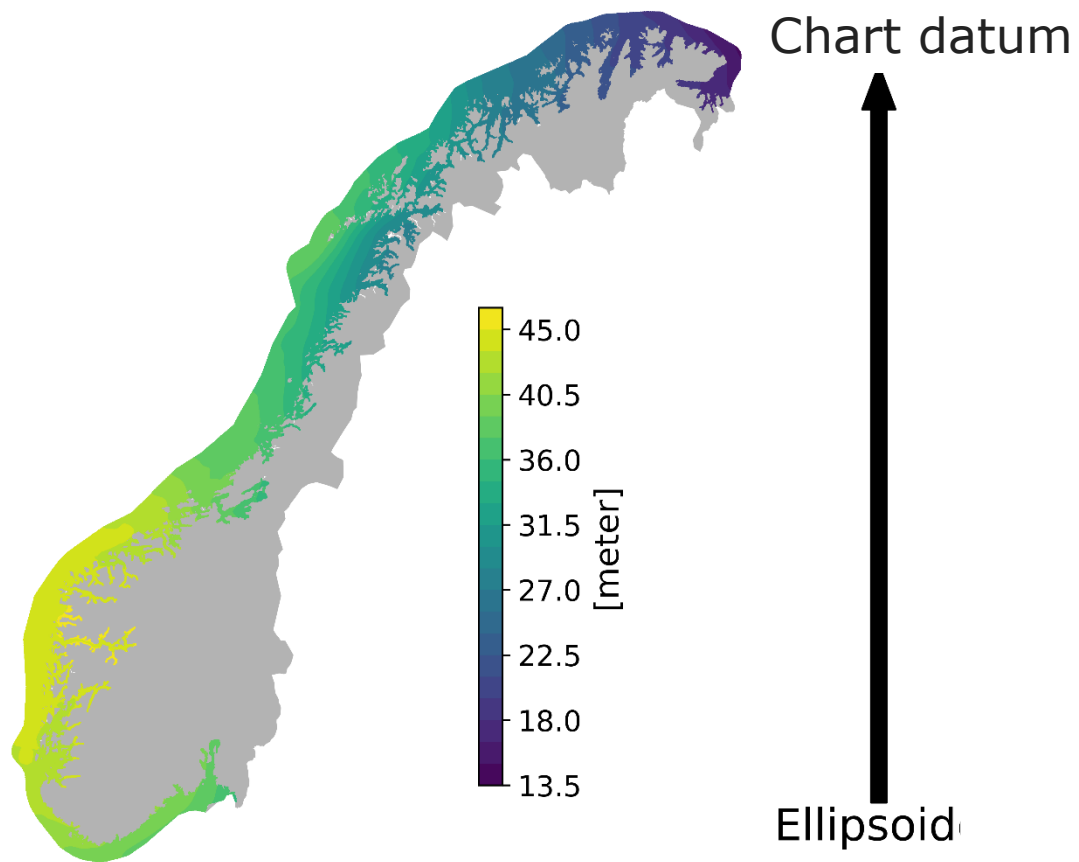
Complex areas



Strong gradients in Z0

Large difference in the model output from one grid point to the other

Resulting models



Outcome



NHS are using the models for ERS

All bathymetry is managed/stored relative to the ellipsoid

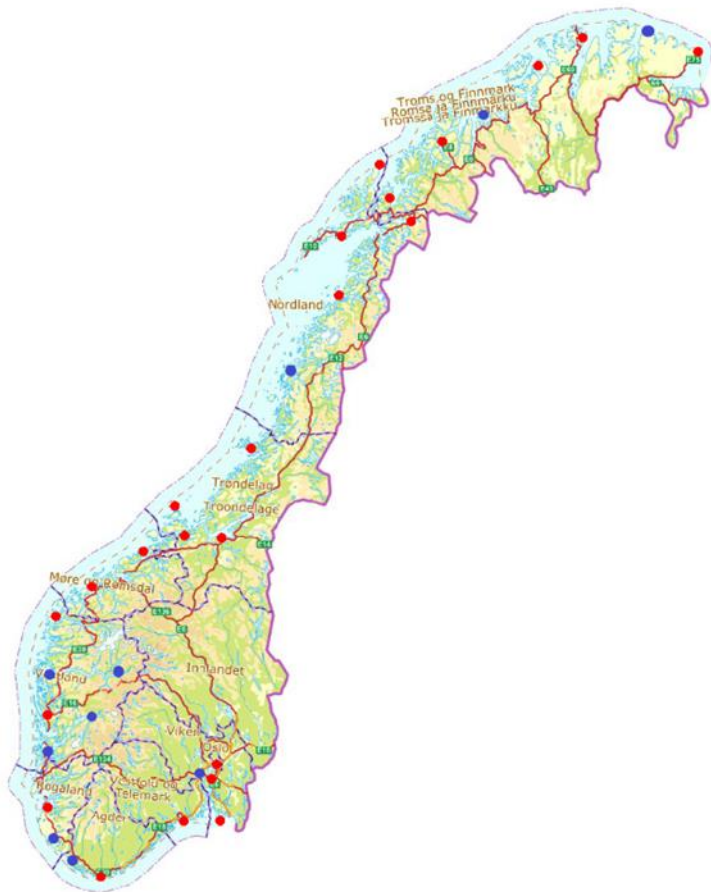
Upcomming activities



- Estimate model accuracy
- Close the gap between the nearshore models based on measurements and the offshore models based on altimetry and hydrodynamic models
- Evaluate if new high resolution hydrodynamic models can contribute in better spatial information

VannTett - WaterTight

- upgrade and expansion of the Norwegian tide gauge network



Upgrading the existing tide gauges



- New dataloggers and new communication solutions to meet user needs. Still floating gauges in stilling wells
- Data corrected for known errors back to 2008 and quality controlled



Kartverket