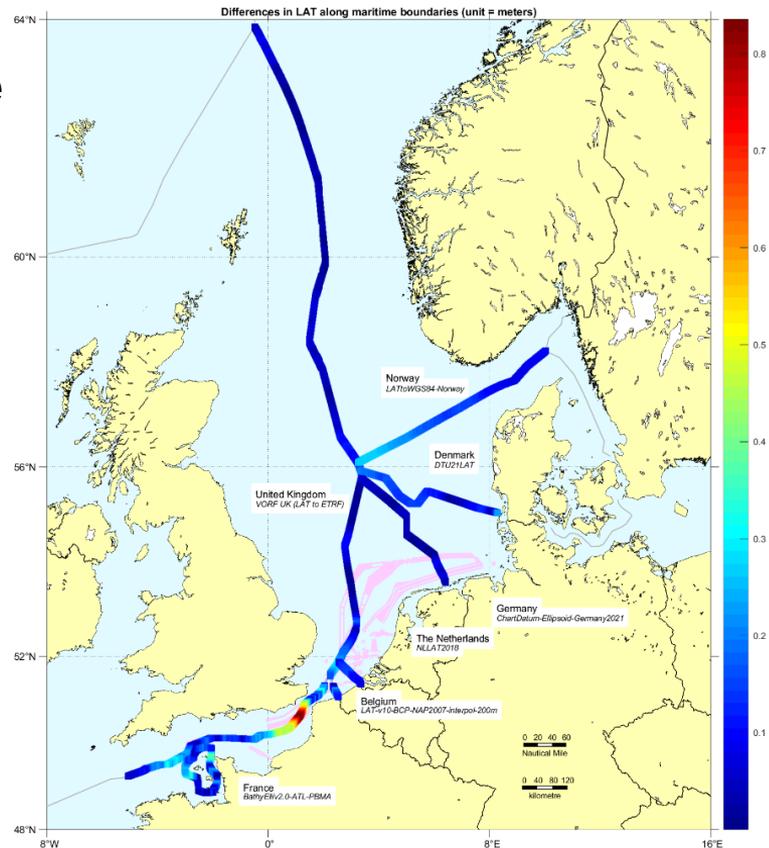


ANALYSIS OF THE DIFFERENCES BETWEEN VORF (UK) AND BATHYELLI (FR) SURFACES ALONG THE MARITIME BOUNDARIES

Comparison of LAT surfaces along maritime boundaries

Differences > 80 cm between UK and FR in the eastern Channel



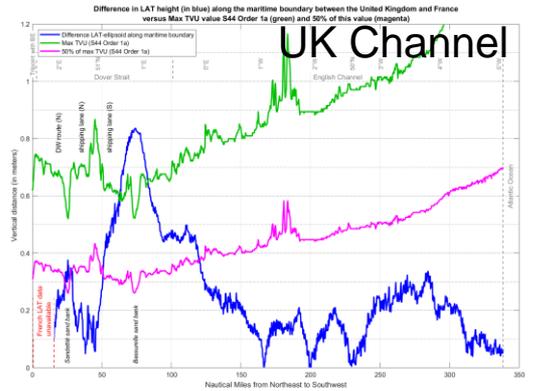
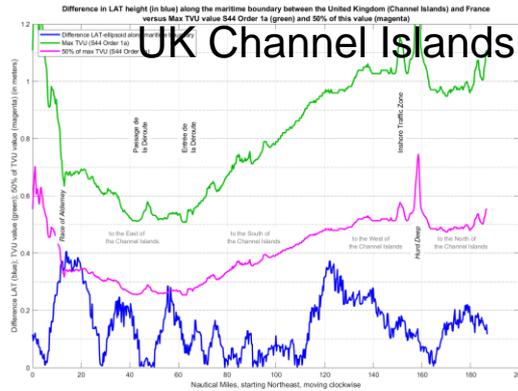
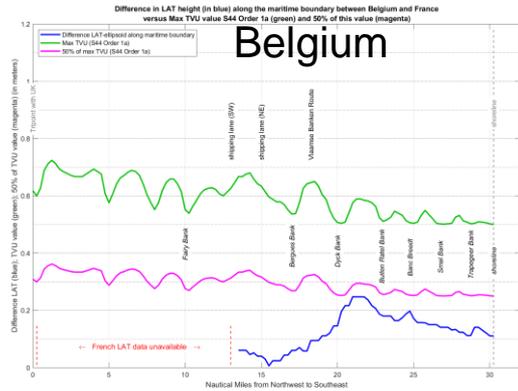
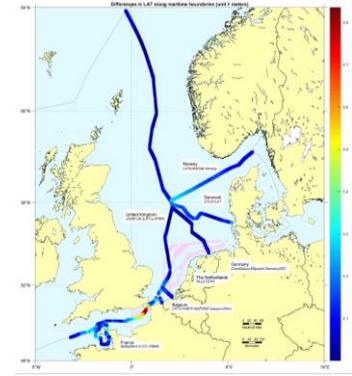
Comparison of LAT surfaces along maritime boundaries

Common boundaries with

- Belgium
- UK

Differences > 80 cm between UK and FR in the English Channel

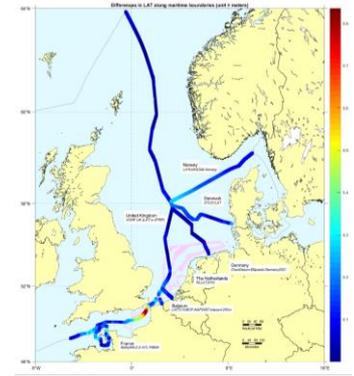
Higher than max TVU at Bassurelle Sandbank in the eastern Channel



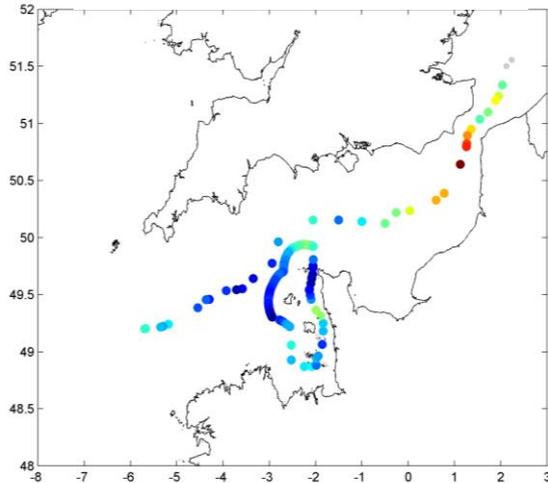
Comparison of LAT surfaces along maritime boundaries

Use of :

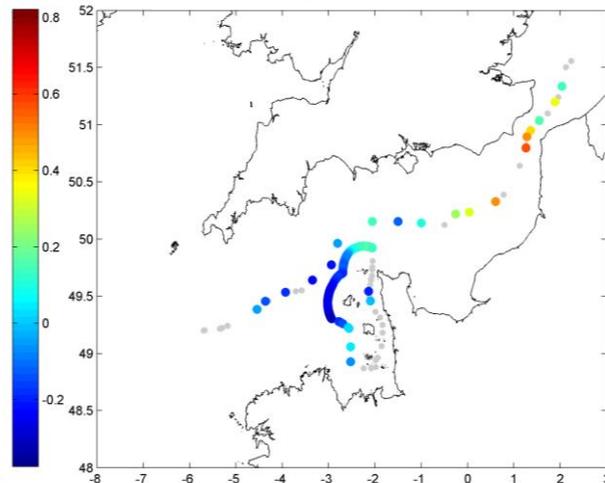
- Greater North Sea LAT matrix : LATtoEllipsoid_GreaterNorthSea_2024.txt
- VORF LAT data extracted on the boundary : UK_FR_wgs84_ETRF_to_LATVI.vrf



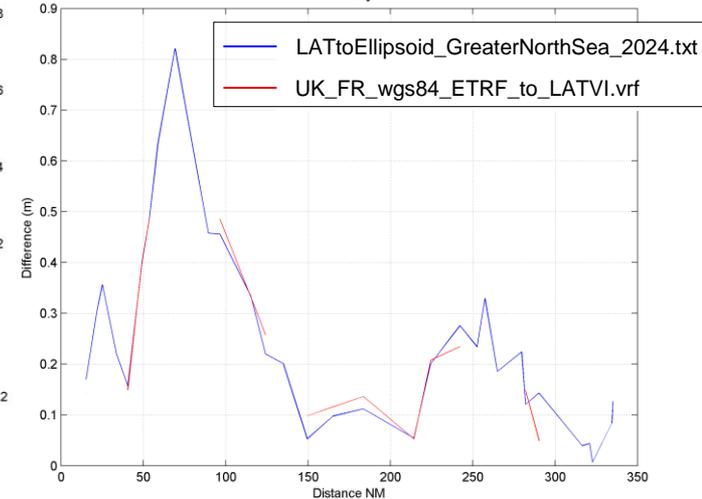
LATtoEllipsoid_GreaterNorthSea_2024.txt



UK_FR_wgs84_ETRF_to_LATVI.vrf



BathyElli2.1-VORF



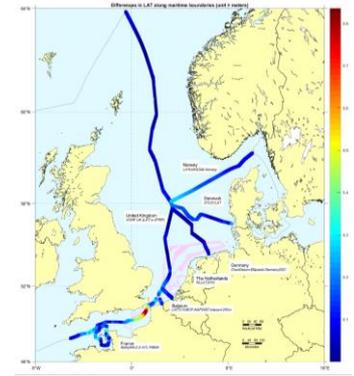
Comparison of LAT surfaces along maritime boundaries

To understand where these differences come from.

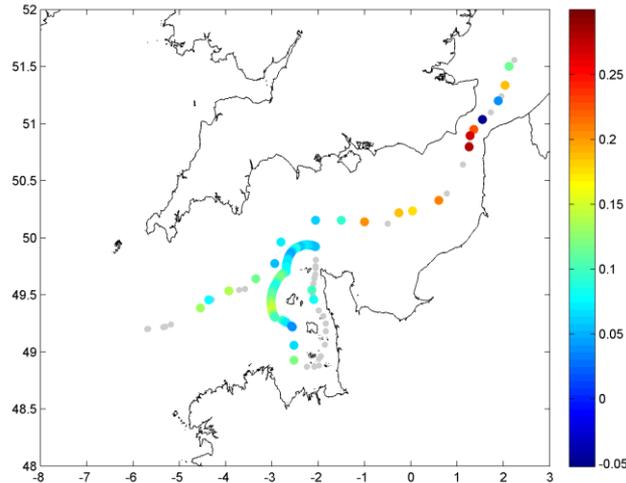
Separation of MSL and LAT

Use VORF LAT data extracted on the boundary : UK_FR_wgs84_ETRF_to_MSLVI.vrf

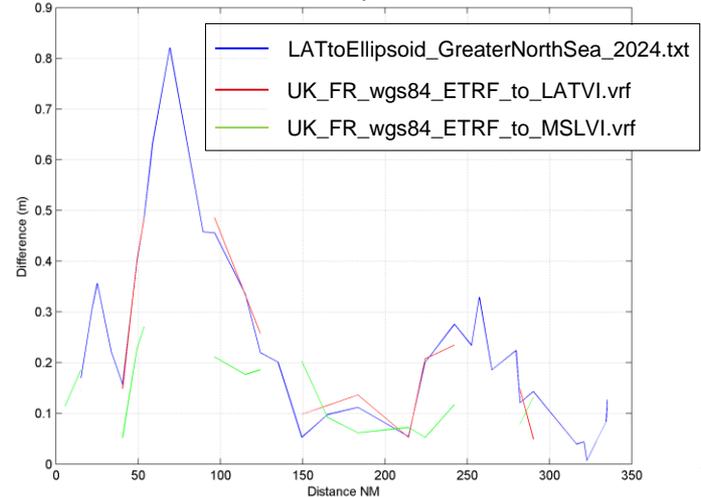
MSL/Ellipsoid => ~30 cm



UK_FR_wgs84_ETRF_to_MSLVI.vrf



- BathyEll2.1-VORF

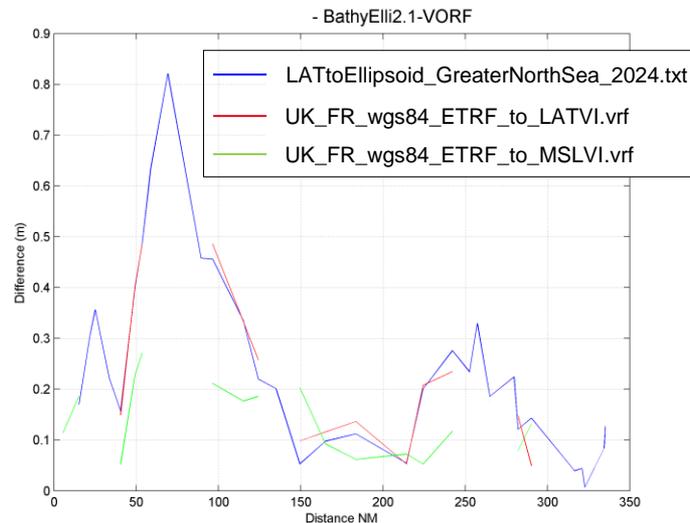
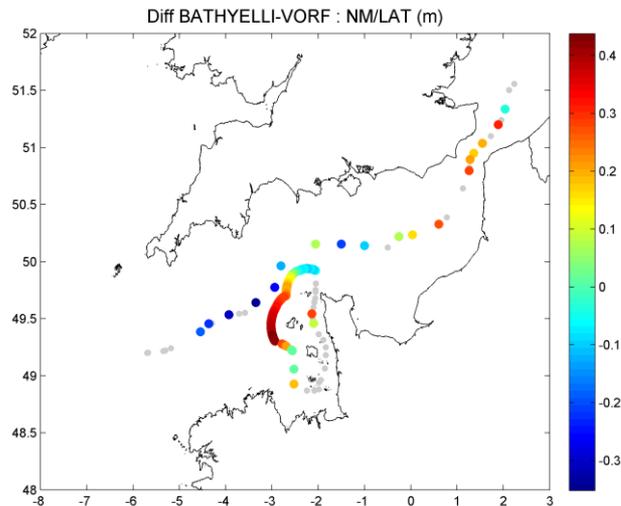
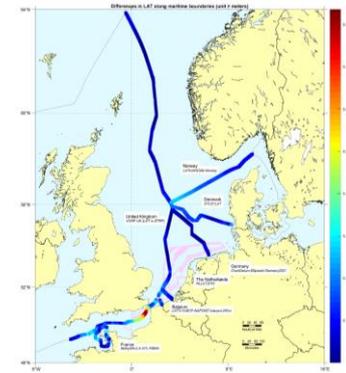


Comparison of LAT surfaces along maritime boundaries

MSL/Ellipsoid => ~30 cm

A large part of the difference comes from the tidal model:

- MSL/LAT => ~50 cm

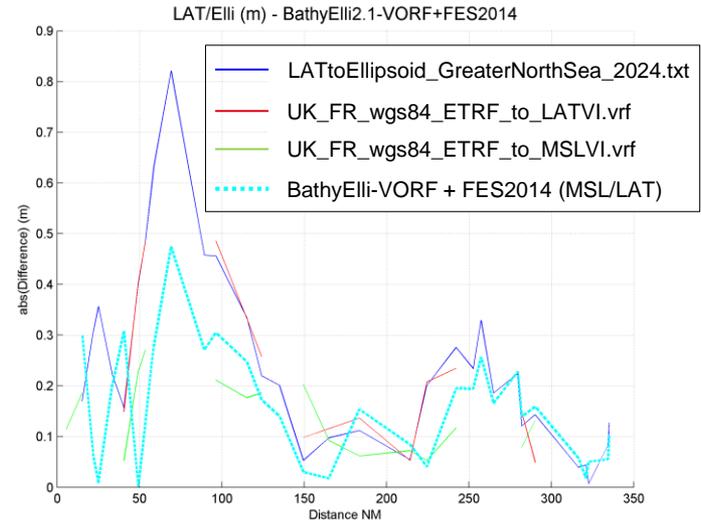
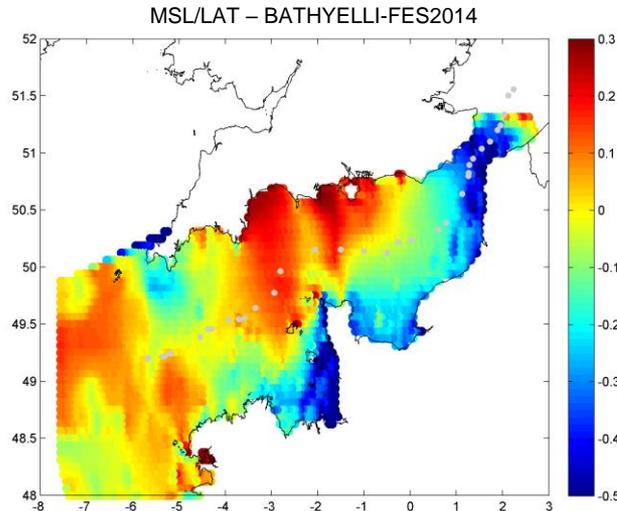
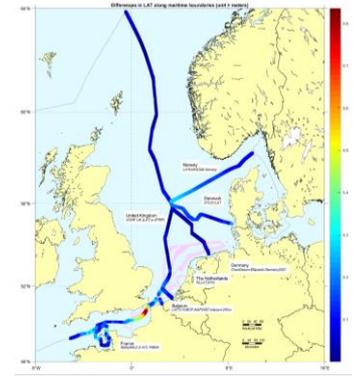


How to improve BathyElli surfaces

A large part of the difference comes from the tidal model:

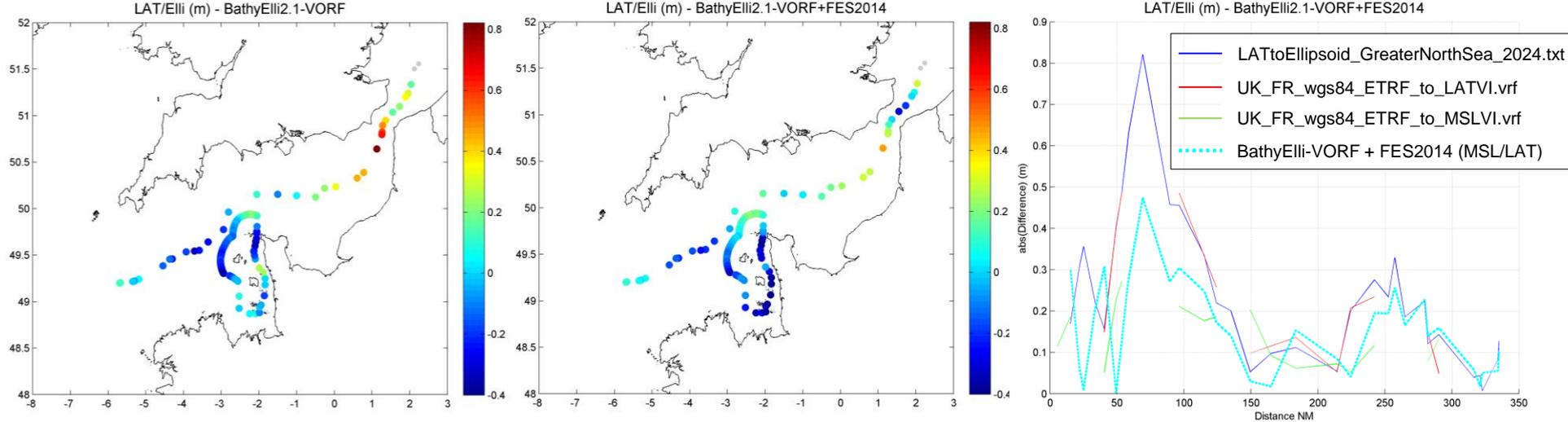
- MSL/Ellipsoid => ~30 cm
- MSL/LAT => ~50 cm

> Use FES2014 MSL/LAT surface



Improvement of BathyElli surfaces

- > Use the FES2014 MSL/LAT surface instead of the BathyElli MSL/LAT surface
- LAT/Ellipsoid => ~50 cm



Improvement of BathyElli surfaces

> Use the FES2014 MSL/LAT surface instead of the BathyElli MSL/LAT surface

English Channel - improvement

- LAT/Ellipsoid <50 cm

Channel Islands - degradation

- LAT/Ellipsoid >50 cm

