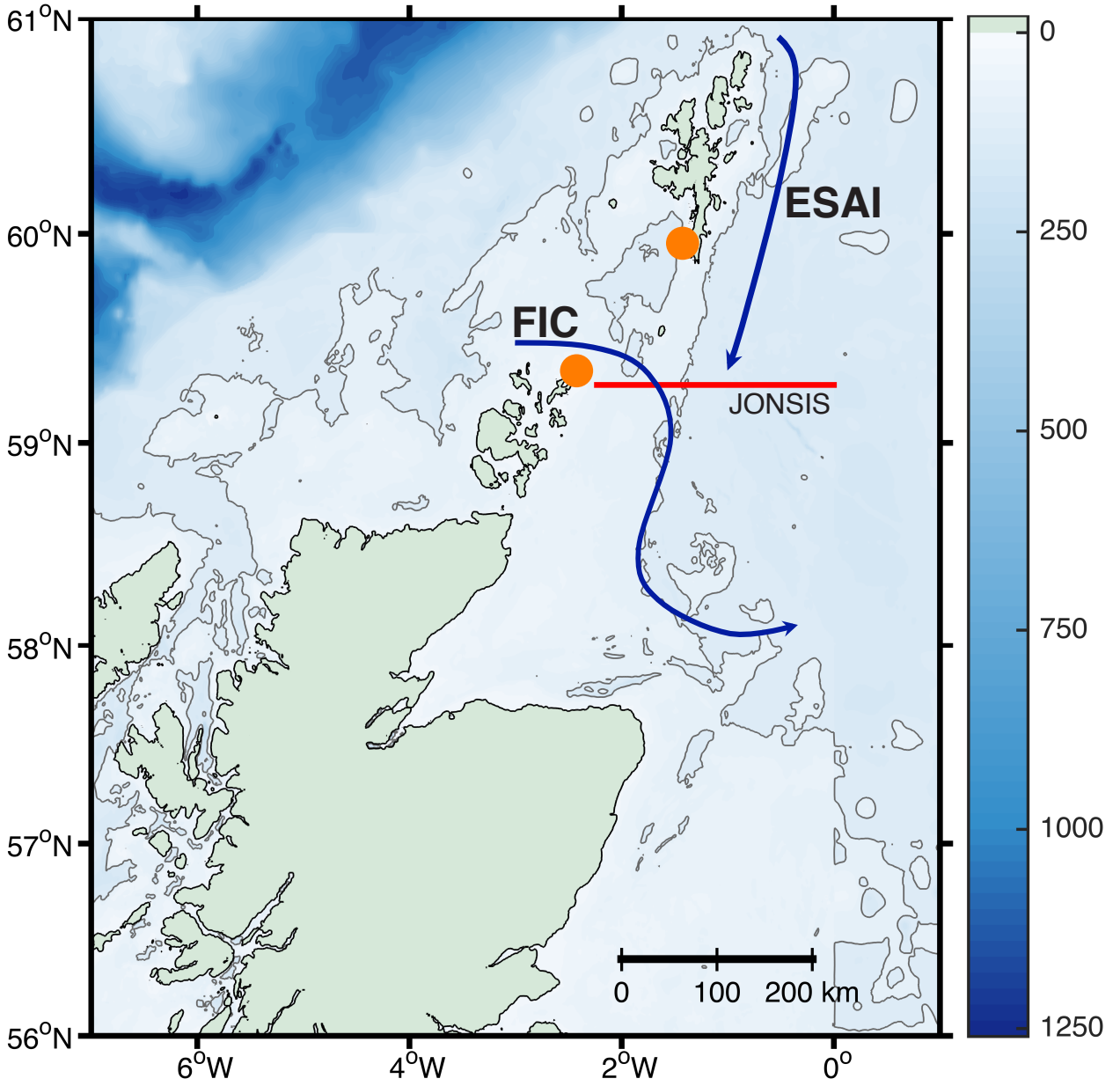
Tidal and frontal flows in the Fair Isle Current observed using a Seaglider

Peter Sheehan Bee Berx Alejandro Gallego Rob Hall Karen Heywood

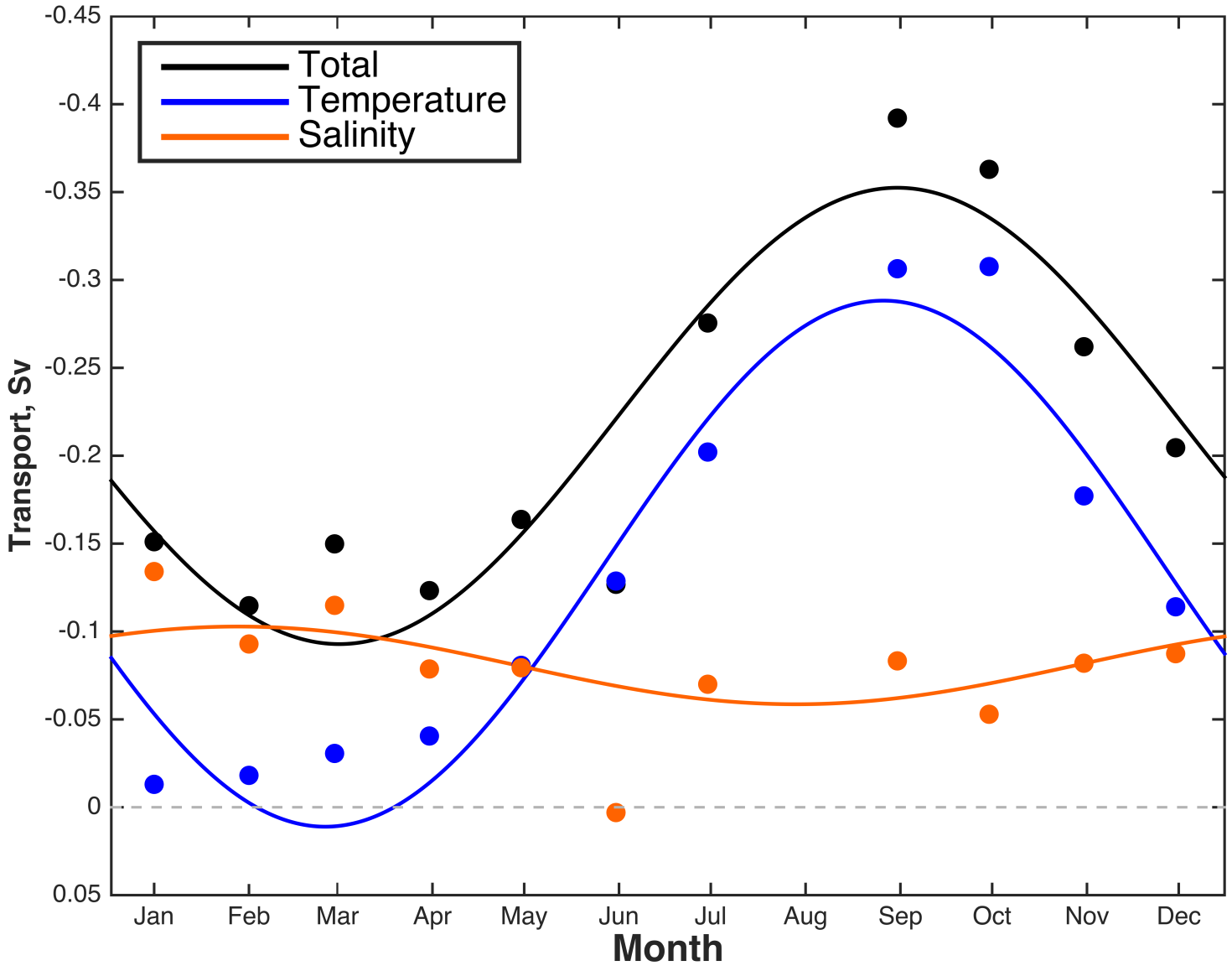
p.sheehan@uea.ac.uk

marinescotland The Scottish Government | COAS Centre for Ocean and Atmospheric Sciences | UEA University of East Anglia



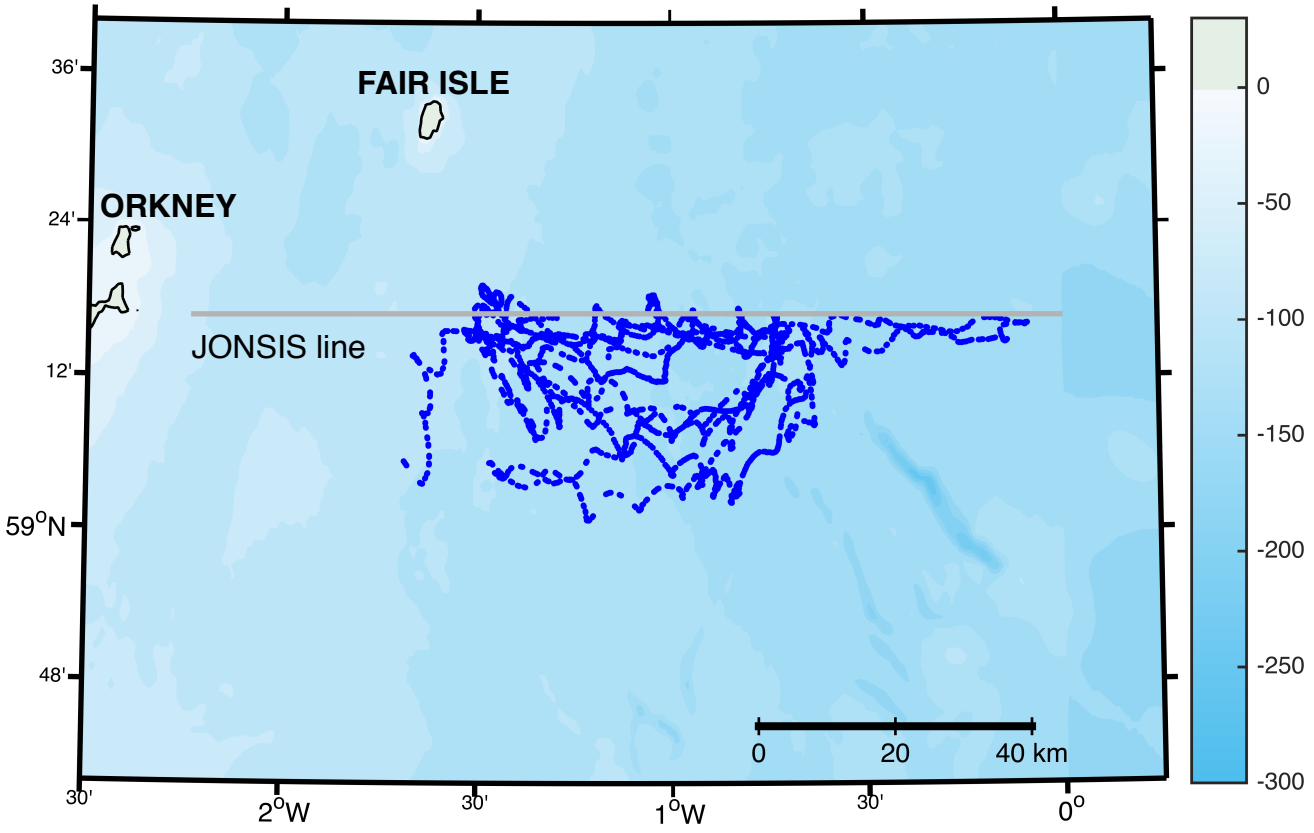
Bathymetry from Gebco (2008)
Based on Turrell et al (1996)

Long-term observations



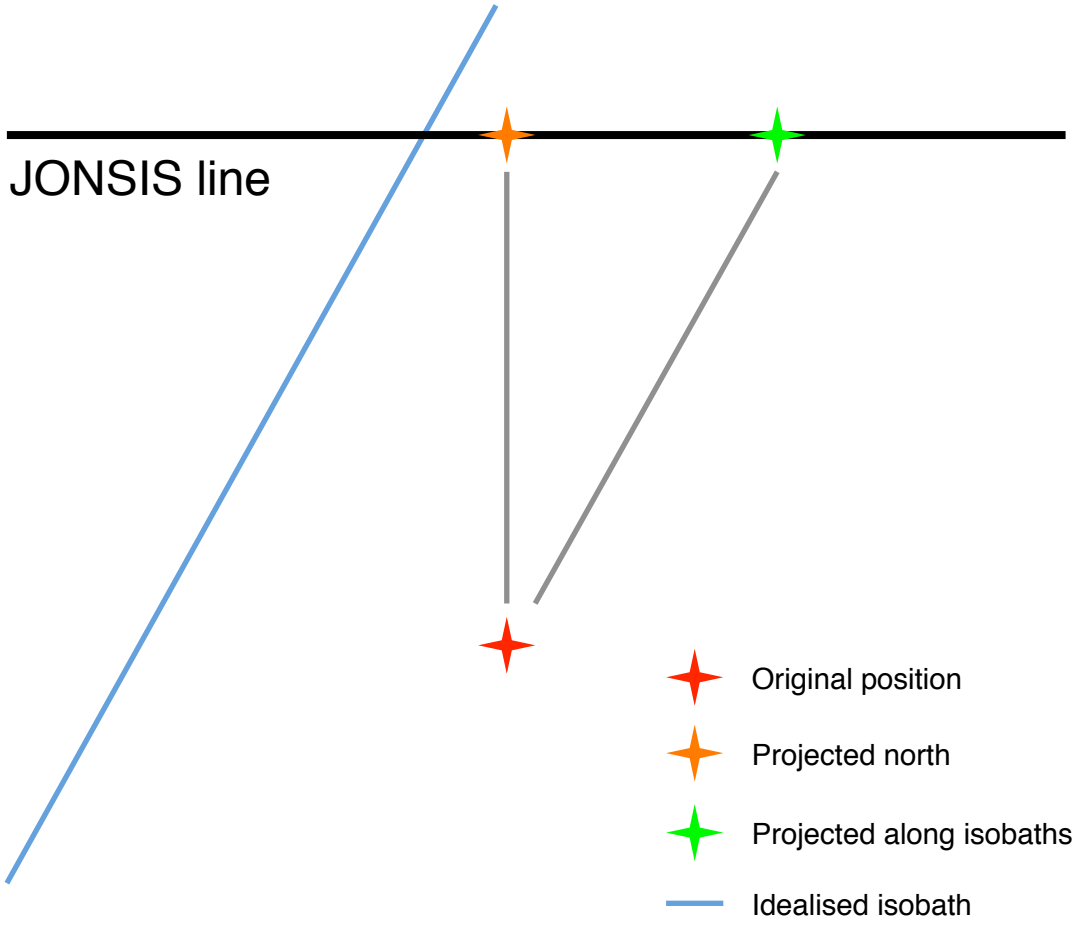
Data

Dive locations

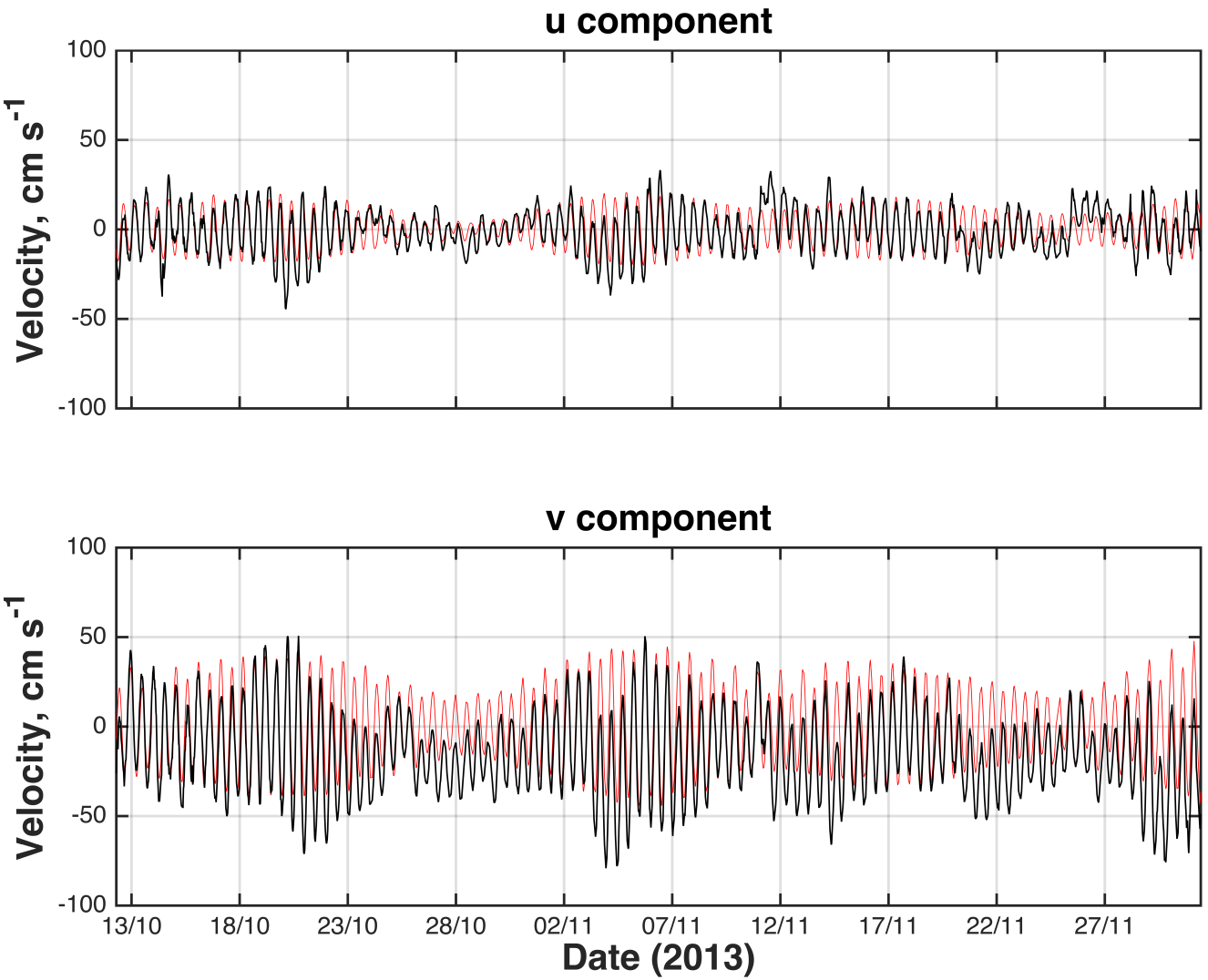


Data

Longitude projection & objective mapping

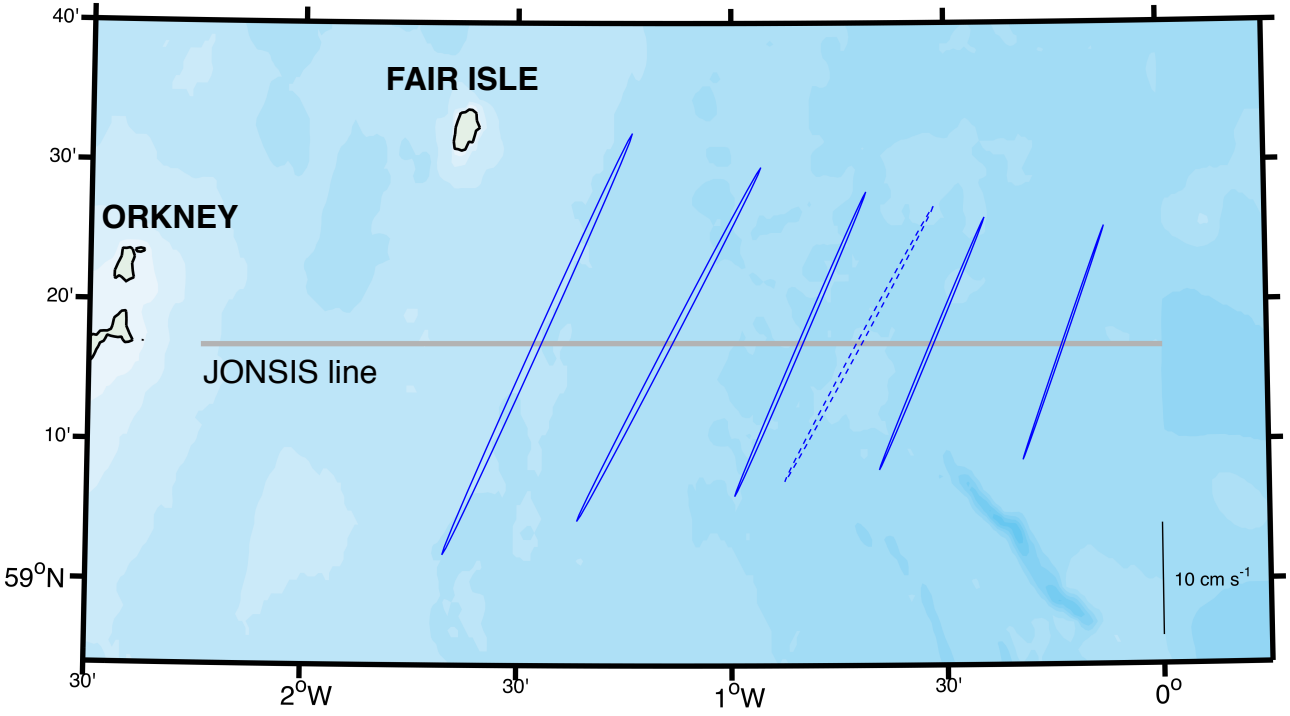


Dive-average current



M2 tidal ellipses

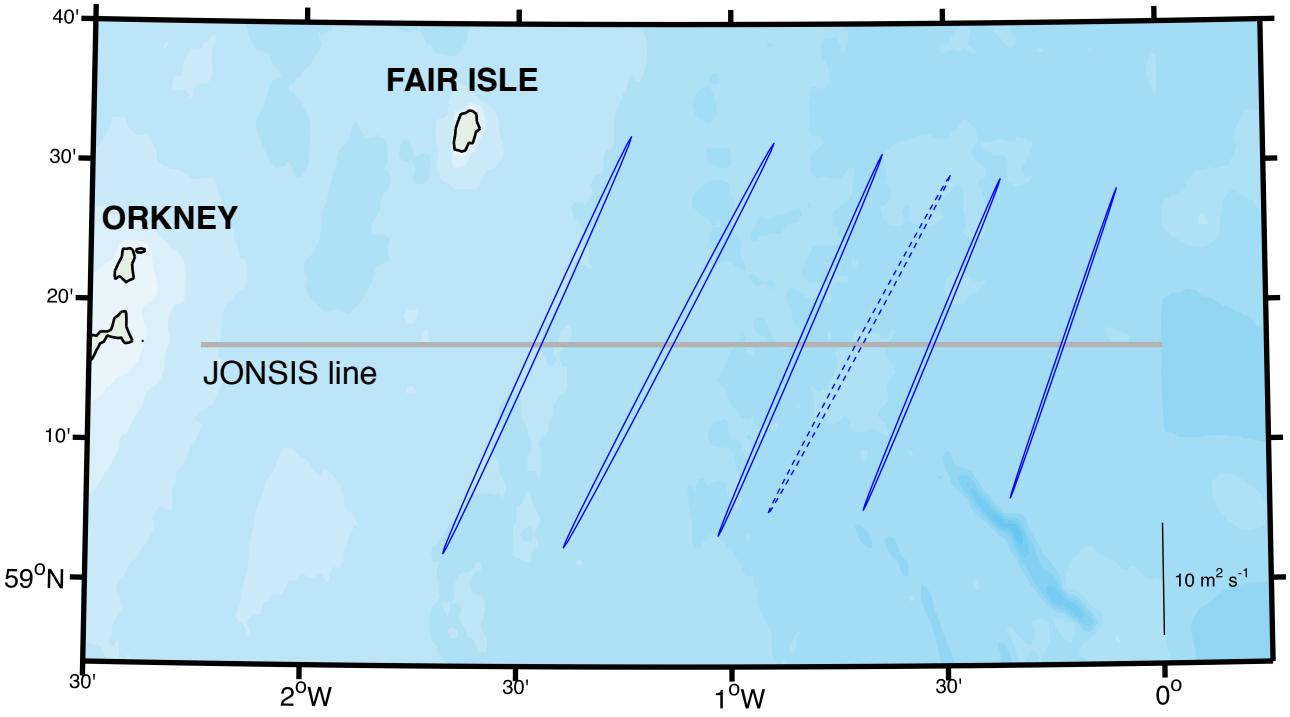
Velocity



10 cm s^{-1}

M2 tidal ellipses

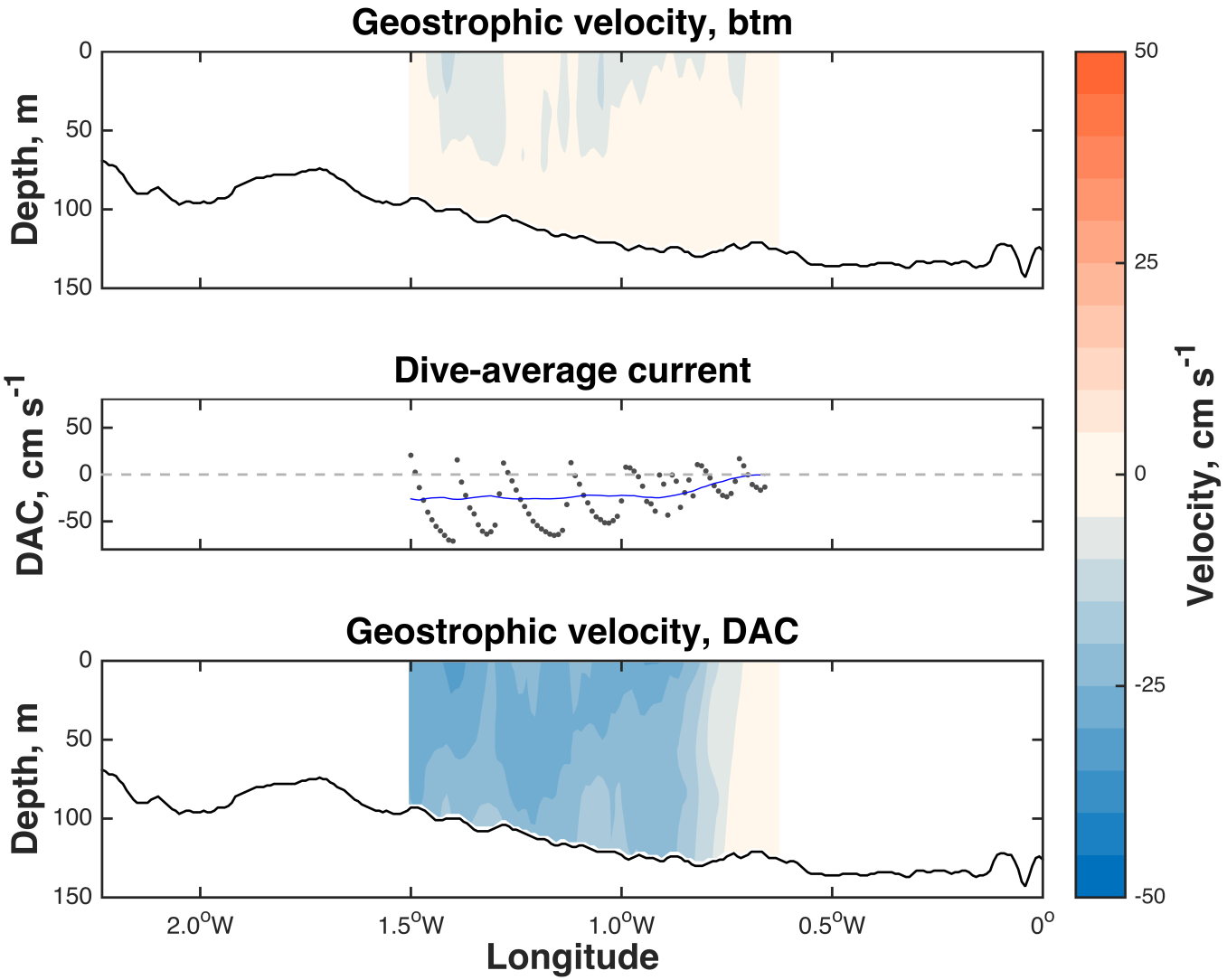
Transport



10 m² s⁻¹

Geostrophic velocity

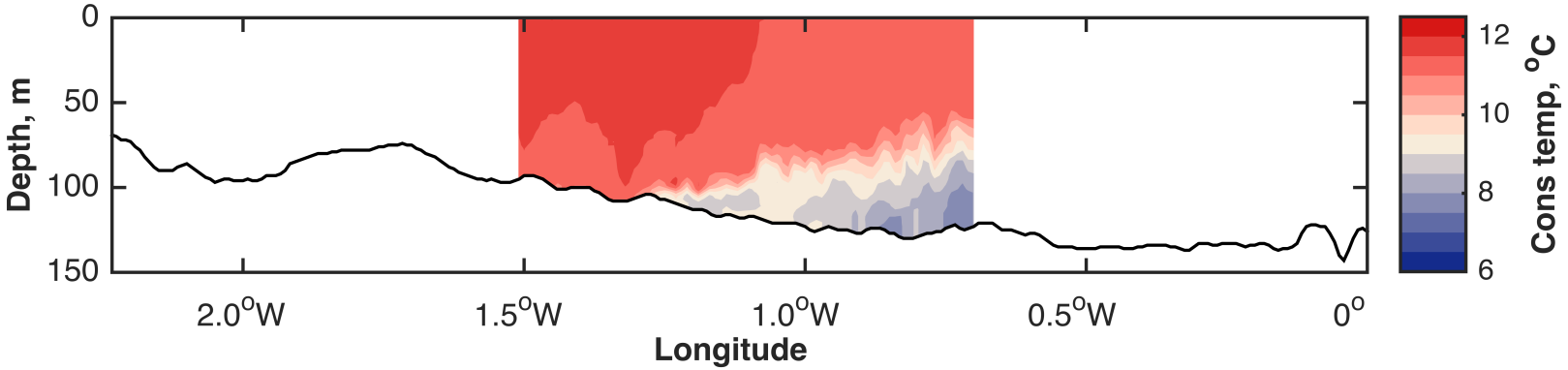
CTD versus Seaglider



Stratification parameter

Definition

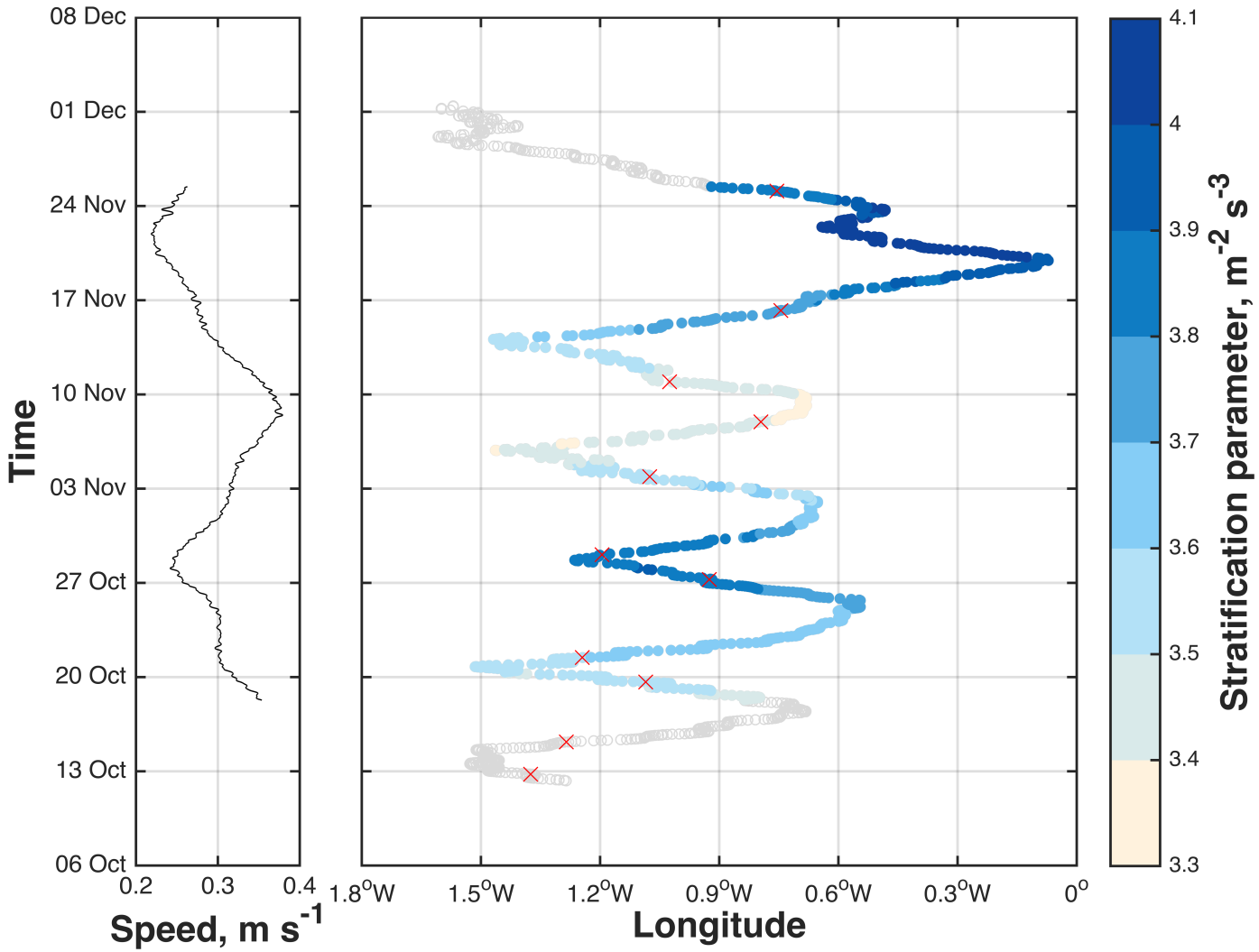
$$\log\left(\frac{h}{u^3}\right)$$



Stratification parameter: see Simpson & Hunter (1974)

Stratification parameter

Results



Summary

- Data have been projected along idealised isobaths
- M2 tidal ellipses can be drawn from Seaglider data
- Dive-average current observations vital for accurately estimating transport
- Frontal location does not appear to be related to stratification parameter