The impact of mesoscale variability on northward volume transport in the Irminger Sea

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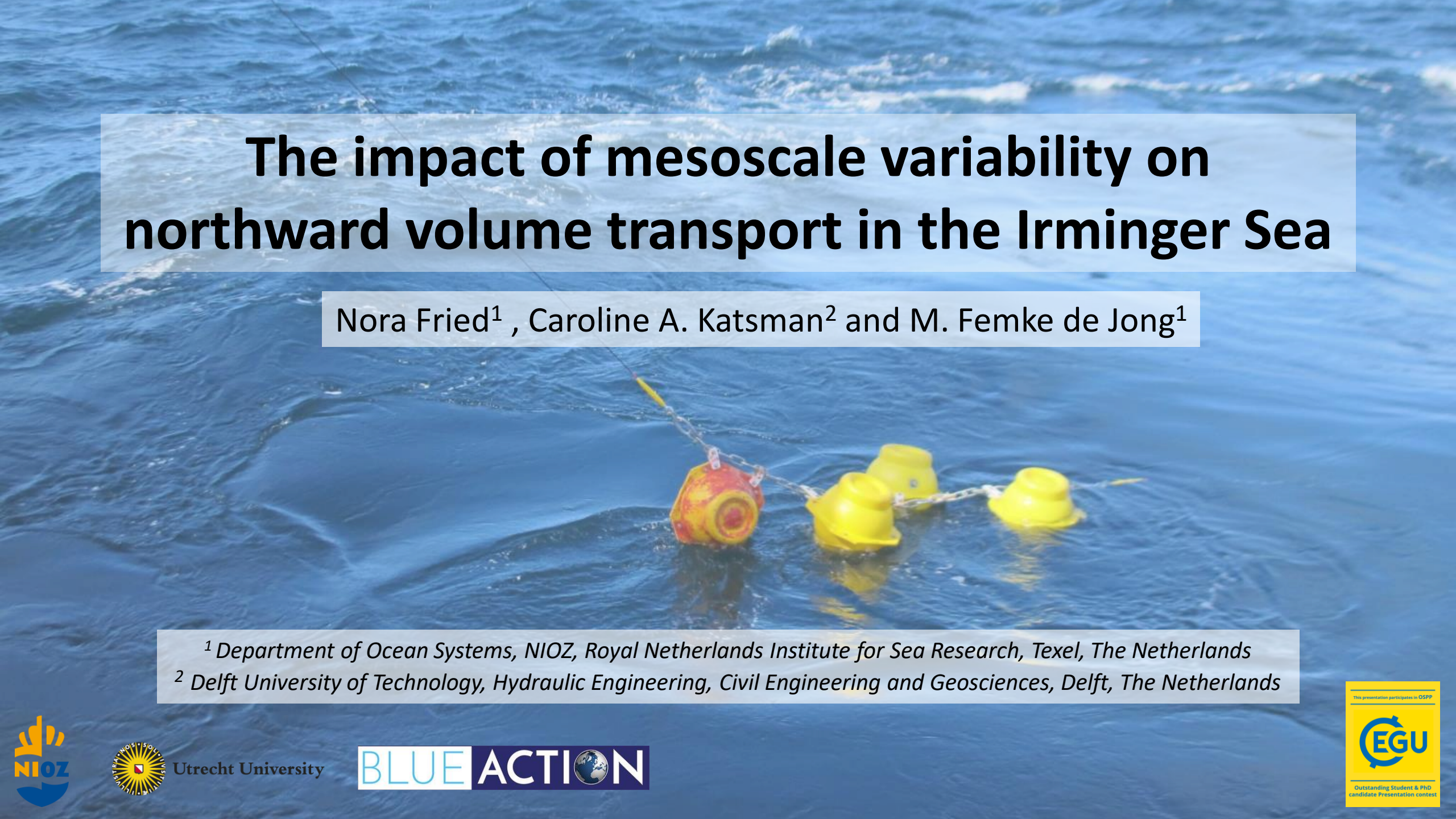

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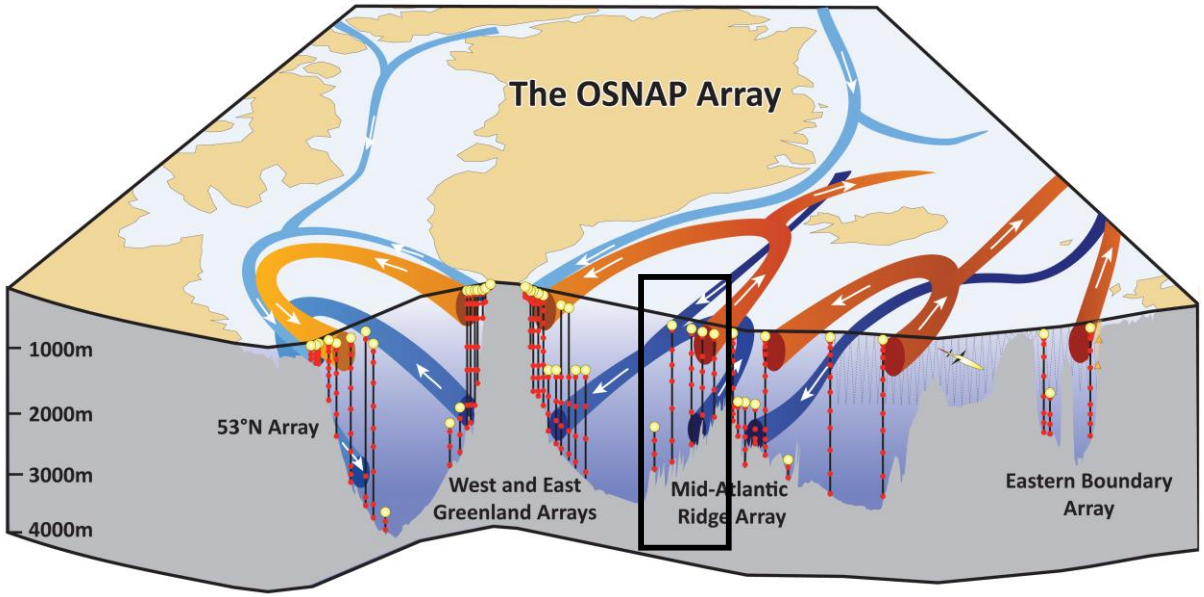
Investigating the mesoscale variability in the eastern Irminger Sea

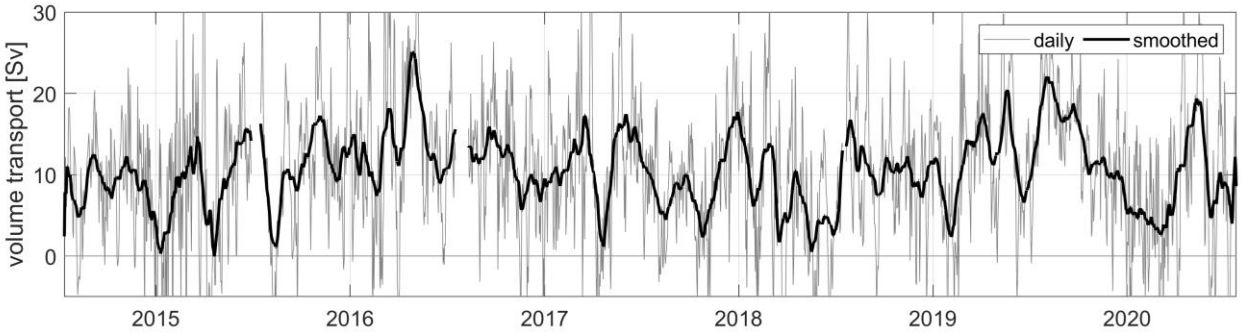
Overturning in the Subpolar North Atlantic Program



NIOZ mooring array

Lozier et al., 2017

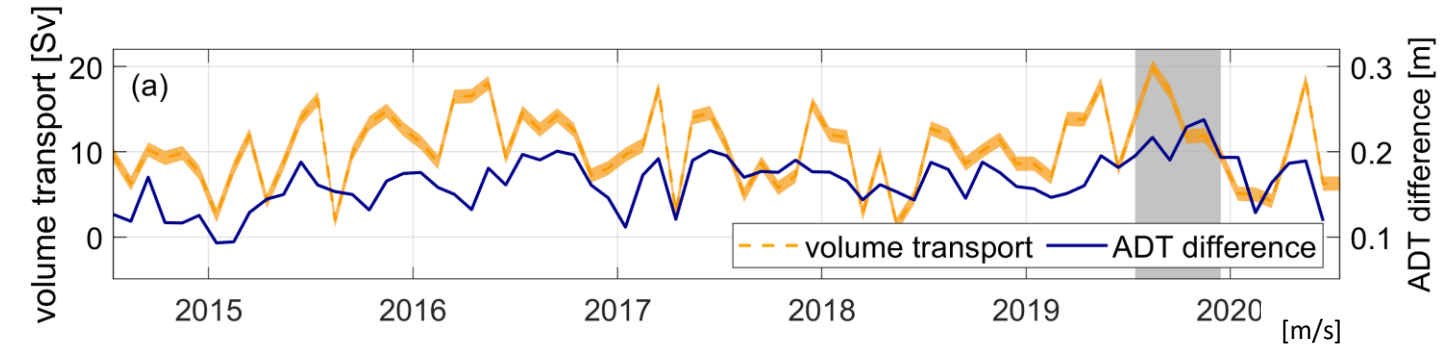
Irminger Current (IC) volume transport 2014 – 2020

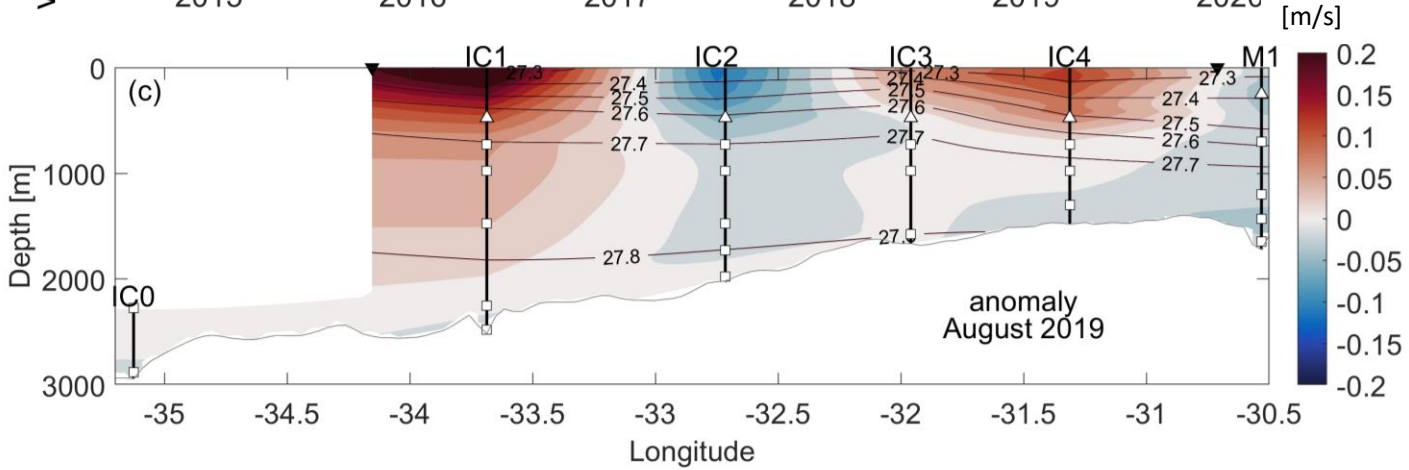


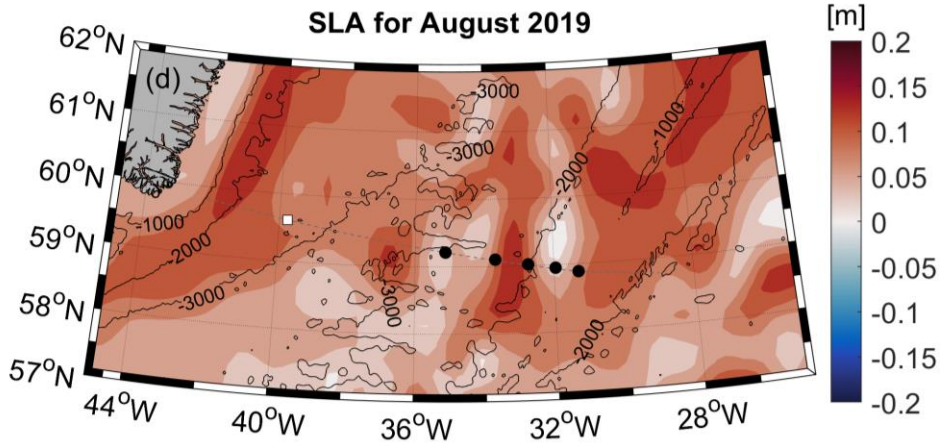
The Irminger Current is a major contributor to the northward volume transport in the Irminger Sea (Fried and de Jong, 2022)

Explore the mesoscale variability in the Irminger Current and its impact on northward transport variability

Recent changes at the IC mooring array (*Fried and de Jong, 2022*)





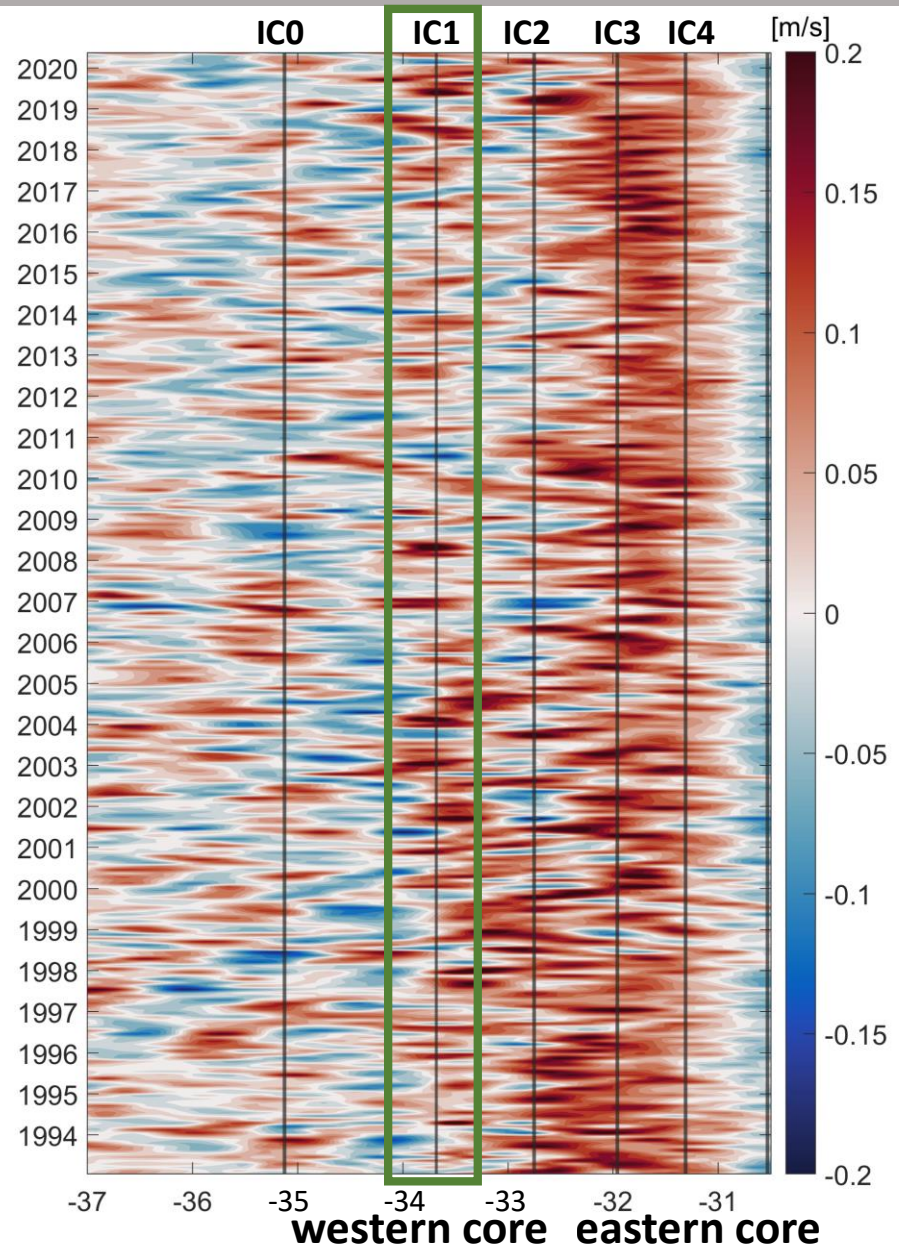


Significant correlation between ADT and volume transport (r = 0.48)

Density changes within the IC boundaries due to the presence of mesoscale eddies which intensified the northward volume transport of the IC

IC transport variability is a superposition of basin-wide to local processes that influence the velocity field on different time scales

The fate of the western core (Fried et al., in prep.)



Monthly CMEMS reanalysis data:

- The reanalysis time series from 1993-2020 shows a very stable eastern core of the Irminger Current between IC3 and IC4
- The western core around IC1 shows a stronger variability

Is the western core a continuous core or a train of eddies travelling northwestward?