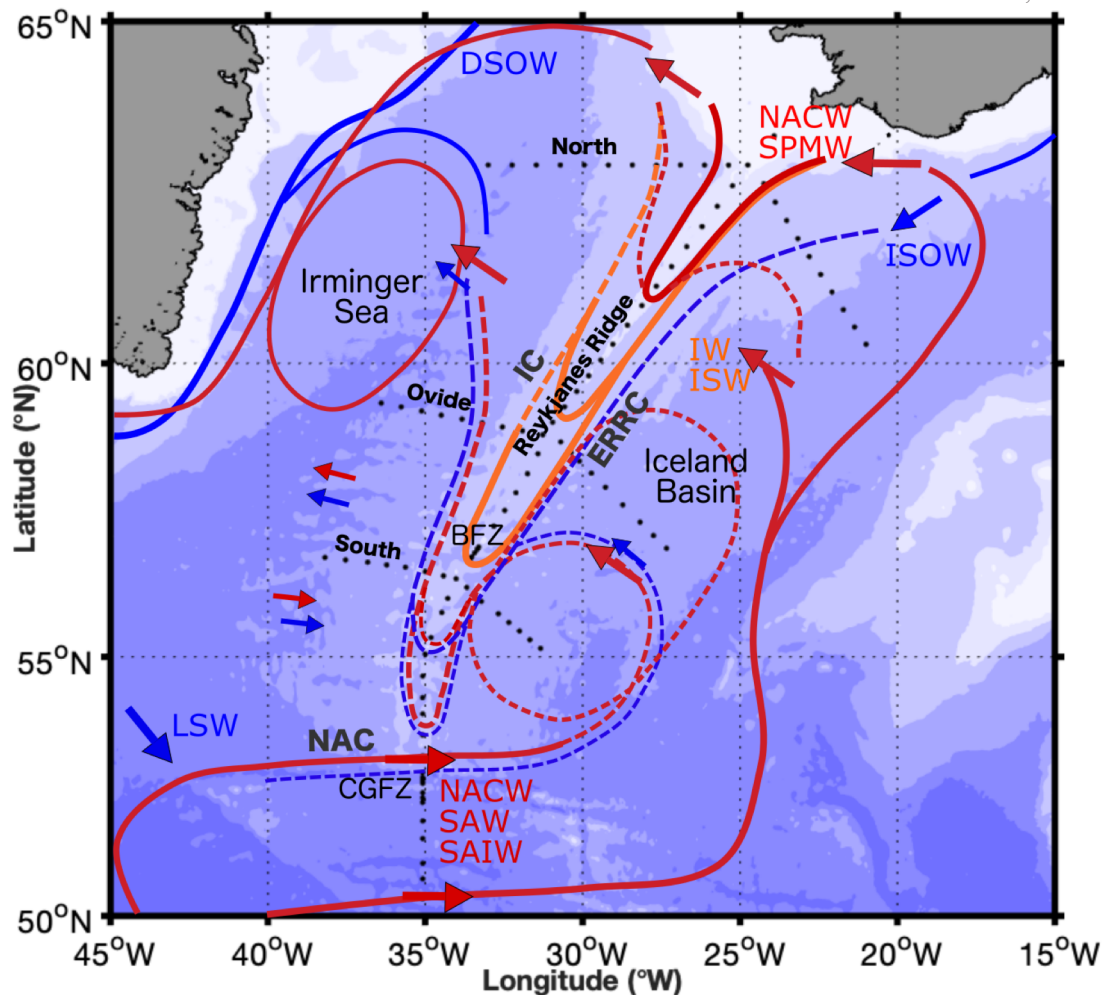


The circulation near the Reykjanes Ridge in summers 2015, 2016 and 2017

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- The subpolar gyre intensity was estimated at 19.6 ± 3.4 Sv in 2015 and 35.2 ± 3 Sv in 2017.
- Flows connecting the East Reykjanes Ridge Current (ERRC) and Irminger Current (IC) branches cross the ridge at specific locations set by the bathymetry.
- The connections of ERRC and IC with interiors of the Iceland Basin and Irminger Sea vary in strength.
- The two branch structure of the IC are continuously renewed by cross ridge exchanges.
- A freshening and a decline in density mainly affecting the Subpolar Mode Water was observed between 2015 and 2017, associated with a lower mode water transport partly compensated by a higher transport of intermediate and Arctic waters.

Figure: Schematic of the circulation in the northern North-Atlantic. The upper, intermediate and lower branches of the circulation are in red, orange and blue, respectively. Continuous (dashed) curves represent permanent (variable) pathways. Black dots indicate locations of the hydrographic stations. Bathymetry is plotted (color changes at 100 m, 1000 m and every 1000 m below). Topographical features of North-Atlantic are labeled: Bight Fracture Zone (BFZ), Charlie-Gibbs Fracture Zone (CGFZ). The main associated currents are indicated: East Reykjanes Ridge Current (ERRC), Irminger Current (IC) and North Atlantic Current (NAC).

References: Salaün, I., Thierry, V., and Mercier, H.: The circulation near the Reykjanes Ridge in summers 2015, 2016 and 2017, EGU General Assembly 2021, online, 19–30 Apr 2021, EGU21-8250, <https://doi.org/10.5194/egusphere-egu21-8250>, 2021.

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