



Transport and seasonal variability of the East Reykjanes Ridge Current

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The principal features of the subpolar gyre circulation in the Iceland Basin include the northward flowing North Atlantic Current (NAC) in the eastern part of the basin and a southwestward flow along the eastern flank of the Reykjanes Ridge - the East Reykjanes Ridge Current (ERRC). The ERRC is effectively a western boundary current that recirculates a portion of the NAC as well as Labrador Sea water within the Iceland Basin. Previous estimates of ~ 2 Sv flow in the upper 400m of the ERRC are documented, but full-depth estimates of its transport are sparse and neither its annual mean transport nor seasonal cycle is accurately known. Since 2014, the OSNAP project has maintained the first continuous Eulerian array across the North Atlantic Subpolar Gyre, from Labrador to Greenland, and from Greenland across the northern North Atlantic to Scotland. In the Iceland Basin, continuous measurements of the ERRC have been maintained through ADCPs, current meters and dynamic height moorings at multiple mooring sites near 58°N . Together with satellite altimetry, the mean transport and synoptic variability of the ERRC are studied for the period from July 2014 to July 2016. Results suggest that the ERRC has variability in its seasonal transport with stronger flow in the fall and winter and weaker flow in the spring and summer.