



The circulation of dense waters in the Iceland Sea

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An updated circulation diagram of waters denser than 28 kg m^{-3} in the Iceland Sea has been composed based on Lagrangian data. The 28 kg m^{-3} isopycnal in the Iceland Sea is found at depths shallower than 600 m, therefore the Iceland Sea dense water is potentially able to contribute to the overflows in Denmark Strait and the Faroe Bank Channel. The new circulation diagram shows dense water from the central Iceland Basin advected towards the Faroes along with waters originating from the East Greenland Current, which flow through the Spar Fracture Zone in the East Icelandic Current. A connection from the central Iceland Basin towards Denmark Strait was not found in this study. Instead, southward flowing dense water on the Iceland shelf in Denmark Strait seem to originate from the East Greenland Current separations in the Blossville Basin. A rim on colder water on the north Icelandic shelf, both east and west of the Kolbeinsey Ridge, is associated with local up-shelf velocities. These findings call into question the inter-annual persistence of the North Icelandic Jet as a connection from the central Iceland Sea to the Denmark Strait overflow.