



13 years of overflow observations at the Denmark Strait sill, combined with repeated hydrography in the Iceland Sea

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The Denmark Strait Overflow is an important part of the Atlantic Meridional Overturning Circulation, providing the densest source of the later North Atlantic Deep Water.

At the sill of Denmark Strait, the overflow has been continuously monitored by bottom mounted Acoustic Doppler Current Profilers (ADCP) since 1996. This dataset, obtained by IFM-GEOMAR Kiel, IfM Hamburg and MRI Reykjavík, is augmented with hydrographic data from the Kögur section 200 km upstream of the sill, which is regularly occupied by MRI.

The volume transport of the dense overflow primarily shows seasonal to interannual variability, but no decadal trend during the observation period.

The directly measured transport timeseries at the sill are linked with hydraulic control estimates based on upstream reservoir height at the Kögur section. Further, temperature and salinity data allow conclusions on the origin and mixing ratios of the overflow source water masses.