Abstract View

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Variability of Frontal Structure in the Southern Norwegian Sea

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ABSTRACT

A hydrographic survey (CTD) was conducted in the vicinity of the Iceland–Faeroe Island oceanic front (IFF) north of the Faeroe Islands during October 1980. It consisted of CTD transects on three horizontal scales ranging from kilometers to hundreds of kilometers.

Intense interleaving of different water masses is found in the IFF in the presence of horizontal current shear. Significant alongfront variability on scales of about 50 km is present, consistent with earlier findings. Estimates of cross-front heat flux of 5.16×10^4 W m^{-2} and salt flux of 1.58 g m^{-2} s^{-1} are greater than those found for the Antarctic Polar Front but are of the same order as eddy heat flux across the IFF found by Willebrand and Meincke. Evidence suggests that intrusive interleaving in the IFF on 50 m vertical scales is driven by double-diffusive convection.