

# INTERANNUAL VARIATIONS OF THE WATER MASSES IN THE FRAM STRAIT

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**Abstract:** Interannual variations in the amount and properties of the different water masses passing through the Fram Strait have been studied for the period 1984 to 2005 in an east-west section at about 79°N. The Fram Strait is the only deep connection between the Arctic Ocean and the adjacent seas, with a sill depth of approximate 2600 m. The exchange of mass, heat, and salt are therefore of particular interest in this region. The most important water masses in this strait are Atlantic Water, Arctic Water, Polar Water, Recirculated Atlantic Water, and deep waters from the Norwegian Sea, the Greenland Sea, the Canadian Basin, and the Eurasian Basin. The Optimum Multiparameter Analysis has been used to estimate the amount of each water mass for the different years.

There is a high cyclone activity in the Fram Strait that appear, on the average, to increase the freshwater flux through the strait (Brümmer et al., 2001). The freshwater flux has an impact on the deep water convection in the Greenland Sea, and modifications of the properties of the deep water from the Greenland Sea can lead to changes in its circulation. However, interannual and longer-term changes in the North Atlantic Oscillation can influence the Arctic pressure field, and may affect the oceanic circulation through action on the freshwater flux and the inflow of Atlantic Water to the Arctic Ocean (Dickson et al., 1999).

**Keywords:** Water masses, Fram Strait, Arctic Mediterranean, Oceanic circulation, NAO

## References

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