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Historical variability of the density stratification in the Laptev Sea

Florian Greil, Markus Janout, and Jens Hölemann

Alfred Wegener Institut für Polar- und Meeresforschung, Bremerhaven, Germany

The Laptev Sea is a key region for sea ice formation and export to the inner Arctic. During winter, wind-ice-dynamics repeatedly produce open water areas (polynyas) with extensive heat fluxes, sea ice formation and water mass modification. In summer, the oceanic processes are strongly influenced by the enormous freshwater discharge of Siberian rivers. All this influences the density distribution.

We therefore present a comprehensive analysis of the historical temperature and salinity data which is episodically available since around 1910. The variability of the density stratification is important for mixing across the water column.