



## **NWO-RFBR project on global variability of water mixing in the World Ocean and its influence on convection and internal waves in Sub-Polar zones**

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Mesoscale variations of ocean properties essentially transform the structure of the ocean water masses and directly influence short-term changes in climate. Knowledge of the climate state and an ability to forecast its variations allow mankind to make deliberate decisions that affect its long-term development.

Numerous data on global climate warming show that during the last 50 years the water of the Polar Ocean has become fresher due to several reasons. Decreasing water salinity and increasing temperature of the upper water layers affect the formation of the hydrological (density) profiles, deep convection, the generation of tidal internal waves and this, in its turn, the intensity of water mixing due to internal tide breaking in the continental shelf zone.

Numerical modeling of temperature and salinity spectra on the basis of trans-ocean CTD measurements will allow us to identify ocean regions and layers where water mixing exceeds the background level (so-called hot spots”).

Finally we aim to answer the question how during the last 20 years the increased intensity of ocean mixing affected the parameters of tidal internal waves through variation of the stratification parameters in the Sub-Polar regions.

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