Project: **1082**

Project title: **TRANSPORTED**

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Report period: **2018-07-01 to 2019-06-30**

*The ROMS model set up for TRANSPORTED combines - besides the basic ocean model - two major simulation aspects in one application: an Arctic domain necessitating the simulation of sea ice processes, and a sedimentation module. In the ROMS community these two disciplines are usually split which led to different branches either supporting one or the other. Therefore, setting up the model enabling both simulation aspects was a complicated endeavour and is yet to be completed. These difficulties shifted the entire time schedule by about half a year.*

*On the other hand, the decision to make use of previous global simulations of a different ocean model conducted within the section and transform their output into boundary conditions for the regional application could save up both time and computational efforts.*

*Currently, the model runs at a very high vertical bottom resolution successfully resolving typical features of contour currents at locations known for major deep flows along the Greenland shelf and through channels of the Greenland-Scotland-Ridge as well as along other basin boundaries. Several animations and property plots could have been extracted and utilised as a first visual validation tool.*

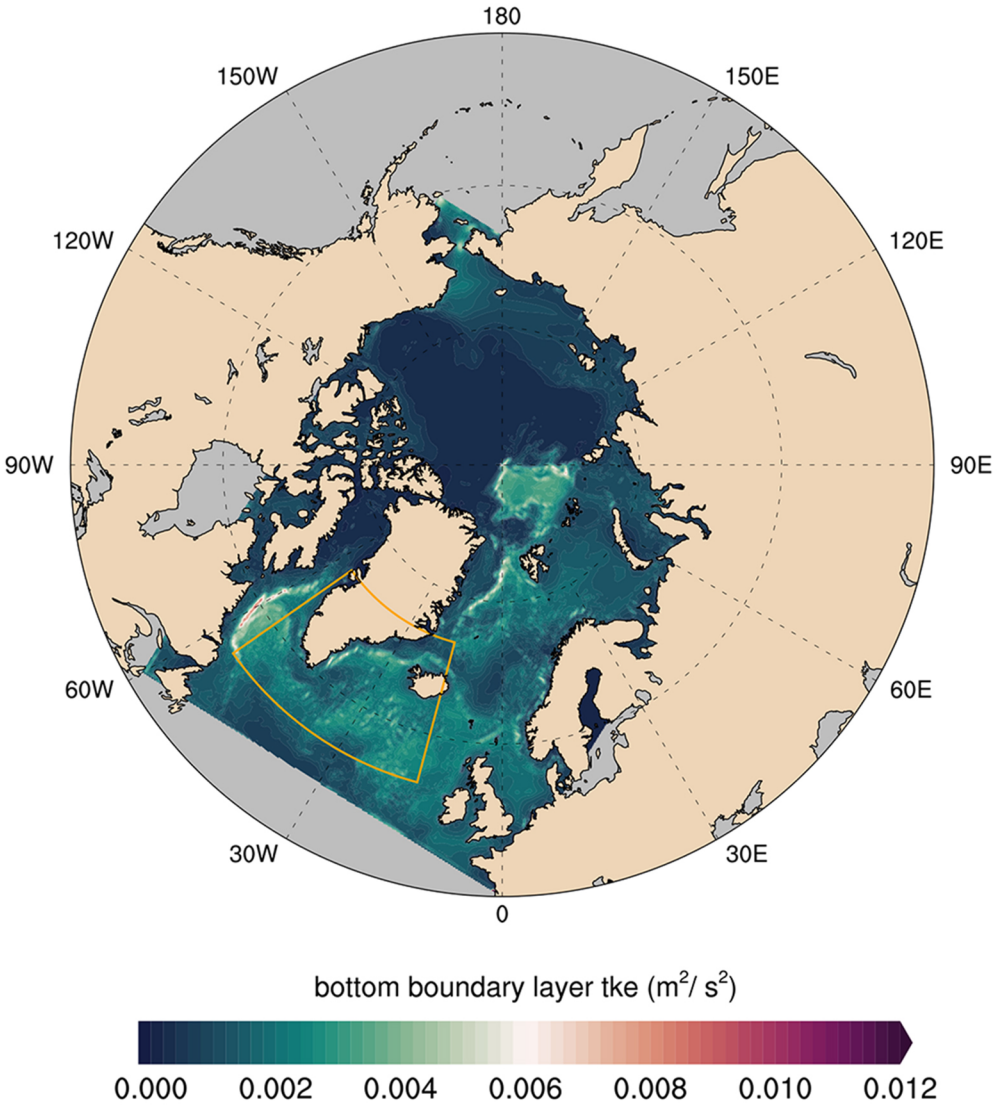


*Fig. 1: Turbulent kinetic energy of the bottom boundary layer*

*In figure 1, the turbulent kinetic energy of the bottom boundary layer integrated over a simulation year serves as an indicator for bottom currents. These and other results have been shared at the IODP/ICDP colloquium in Cologne this year.*

*The most important step of the project right now is to successfully combine sediment and sea ice simulations and validate the sedimentation by means of observation data. Subsequent sensitivity tests shall serve as an insight into the main driving forces for the contour currents and the sedimentation features, respectively. Results from these experiments will be novel to the community due to the comprehensive model set up and high resolution. Therefore, they are supposed to be the core subject of our first publication.*