



## **Modelling of Baltic Sea Ice – preliminary results of sensitivity studies.**

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Sea ice is one of the main climate indicators of the Earth and has strong influence on momentum, mass and heat fluxes transfer between the atmosphere to the ocean. It also has direct impact on physical state of the sea and indirect influence on biological-physical interactions and seasonal cycles of phytoplankton. Baltic Sea is a small, shelf sea and is seasonally covered by ice. Sometimes the sea ice stands up to 40 percent of the total area of this sea.

In this study we assess the dependence of sea ice cover on different oceanic forcing. For this purpose, data from several models (operational and others) are used for stand-alone simulations of the ice model for the Pan-Baltic Sea area. As a main tool we use one of the most often implemented and well known Los Alamos Sea Ice Model (also known as the Community Ice CodE (CICE)). The sensitivity simulations are driven by the atmospheric forcing (based on Era Interim data). As a bottom boundary layer of the ice model data from several hydrodynamic simulations are used. Data from all of the models will be interpolated on the ice model grid.

Results from these simulations are compared with available sea-ice data provided by public data databases (for example Copernicus) or by research institutions from the Baltic Sea countries.

The main aim of this study is to make comparison between different model simulations. The analyzed variables are divided into main groups: sea-ice state, heat and fresh water fluxes, sea-ice dynamics and generally integrated quantities. Also, we discuss sea ice deformation. During conference, preliminary results will be presented.

This work was partly funded by Polish National Science Centre, project number 2017/25/B/ST10/00159