

EGU21-9635

<https://doi.org/10.5194/egusphere-egu21-9635>

EGU General Assembly 2021

© Author(s) 2021. This work is distributed under the Creative Commons Attribution 4.0 License.



## Comparison sea ice data for Baltic Sea region based on modelling simulations and remote sensing measurements.

**Jaromir Jakacki**, Maciej Muzyka, Marta Konik, Anna Przyborska, and Małgorzata Stramska  
Institute of Oceanology PAS, Marine Dynamics Department, Sopot, Poland (jjakacki@iopan.gda.pl)

A comprehensive analysis of the results of remote measurements of the Baltic Sea ice cover has been performed. For this purpose, two modelling integrations were made. Two modelling simulations have been compared with two satellite data sets. As a modelling tool Community Ice Code (CICE) was implemented for Baltic Sea region. It was forced by two independent atmospheric data sets. In the first simulation, the eBalticGrid system was the source of the atmospheric data, which has been operating in operational mode for almost five years. The second simulation used data from the SatBałtyk system. The satellite data differed in the method of evaluating the quality of the results - in some cases, the result was supervised by ice experts, and in the other, the quality was assessed automatically. Comparisons with model we have performed using the daily ice concentration and ice thickness maps over the Baltic Sea. Datasets are produced by the Finnish Meteorological Institute (FMI) and disseminated through the central dissemination unit: Copernicus Marine Environment Monitoring Service (CMEMS, <http://marine.copernicus.eu/services-portfolio/access-to-products/>). The analysis showed an unnatural increase in the average ice thickness obtained from satellite data at the end of the ice season, for selected regions. The possibility of water appearance on the surface of the analyzed cells was assumed as the source of the potential error, which has a significant impact on the optical properties of the surface. It was proposed to eliminate cells containing a specific surface wetting fraction. However, the results do not allow this approach to be considered correct and therefore the work needs to be continued.