2nd Baltic Model Intercomparison (BMIP) Workshop, April 2021

(Date to be communicated)

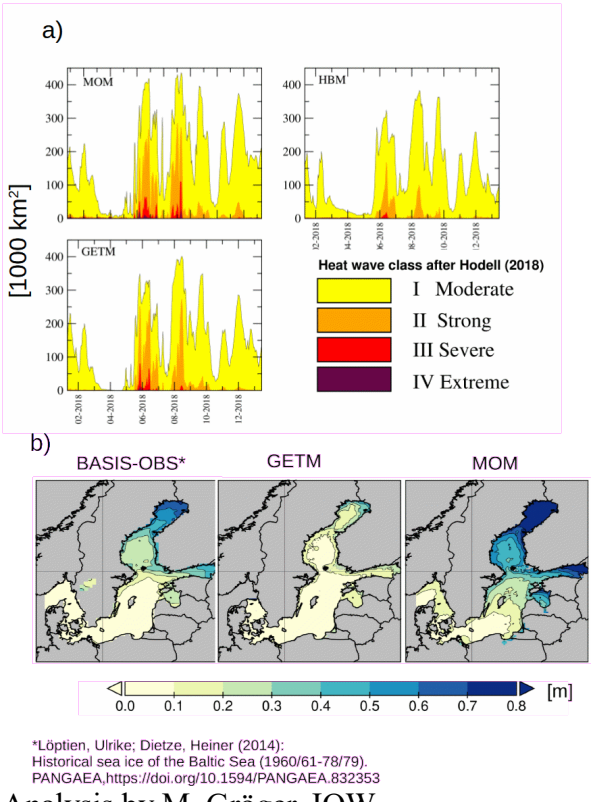
More than 2 years have passed since the 1st kick off meeting for the Baltic Sea Model Intercomparsion Project (BMIP) held in November 2018 at the Leibniz Institute for Baltic Sea Research, Warnemünde/Rostock. So far, a lot of work has been done to harmonize Baltic Sea modelling activities across different Institutes. Along with this, a number of BMIP conform simulations were carried out and a lot of data has been produced. Now it's time to wrap and discuss the outline of the BMIP reference paper.

The purpose of this 2nd workshop is to give a BMIP status overview and to show you the first interesting results based on analysis done by IOW. The workshop is currently planned half a day and has to be held virtually. Details follow.

Demonstration of BMIP added Value

A typical problem in regional ocean model intercomparison studies is related to the use of different forcing data and boundary conditions. This hampers to draw clear scientific conclusions giving rise for a number speculations. Two examples are displayed below that demonstrate the added value by a coordinated protocoll as developed in BMIP.

Figure a) are displays the total area covered by anomalous warm surface water together with a heat wave classification based on Hodges et al. (2018). While the rough evolution is quite consistent across the models but careful analysis reveals differences in the timing and in particular in the magnitude of the wave. Figure b) compares the yearly maximum sea ice thickness averaged over 1961-1979 simulated by two models and derived from an observation based data set. One model systematically overestimates sea ice while the other underestimates it.



*Löptien, Ulrike; Dietze, Heiner (2014): Historical sea ice of the Baltic Sea (1960/61-78/79). PANGAEA,https://doi.org/10.1594/PANGAEA.832353

Analysis by M. Gröger, IOW

The two examples are sensitive to the thermal conditions and thus the forcing data is of particular importance. BMIP aims at harmonizing two of the most significant driving data for the Baltic Sea: the atmospheric forcing and runoff. Together with further protocols for output variables and frequency, averaging periods etc. BMIP will foster intermodel analysis far beyond previous approaches and lead to new insights into Baltic Sea environmental and hydrodynamical modelling. (Link to BMIP instructions)

Preliminary Agenda

Welcome – Purpose of the meeting and short wrap up of activities and achievements.

(Matthias Gröger/ Markus Meier)

TOPIC 2: UERRA data set generation and validation (S. Schimanke)

TOPIC 3 Results of topical analysis for the GMD paper (~10 minutes each)

a) Sea ice (Matthias Gröger)

b) Marine heat wave 2018 (Matthias Gröger, IOW)

c) Stratification (Hagen Radtke, Germo Väli)

d) Upwelling (Cyril Dutheil, IOW)

e) Deep salinity dynamics (Florian Börgel)

f) Sea level dynamics (Ulf Gräwe)

TOPIC 4 Discussion about results in the context of the BMIP reference paper in GMD paper

TOPIC 5 Validation data for BMIP (Discussion lead by Markus Meier)

TOPIC 6 Next Steps