

Review: Evaluation of Arctic sea-ice drift and its dependency on near-surface wind and sea-ice conditions in a coupled regional climate model HIRHAM-NAOSIM

The manuscript describes the evaluation of sea ice drift as function of wind speed, ice concentration and ice thickness in a coupled model. At last a sensitivity study of the implementation of form drag around floe edges is examined. The model system reproduces the summer/autumn drift well but the seasonal variation is missing, thus the winter drift is over estimated.

The manuscript is in general well written and with a few minor changes I think that it is ready for publication

Line 39: I read the line starting with "The seasonal Arctic..." as the is mainly correlated with ice concentration, thickness and form drag. These are of course important but the wind speed should also play a role unless the variation is canceled out on longer time period. The statement could be a bit more clear or a reference could be added.

Line 190 The mean horizontal resolution in the Arctic is .... (docquier et al 2017). The reference points to a nemo-lim article. Does this include references to Piomas as well? Otherwise why reference this?

Line 197: Providing an uncertainty for the passive microwave product is a bit simplified. The uncertainty/bias depends on proximity to land(not for the evaluation of this model), meltponds and regridding from satellite swaths to daily gridded products. In general larger uncertainty near the ice edge and in summer. I would just mention that there are uncertainties due to these factors.

Line 200 as Line 190

Line 203. Even if PIOMAS was not assimilated I would not call the difference a bias of NAOSIM. It is just another model.

Line 282. I assume that this is  $p_{star}$  ( $30.000 \text{ Nm}^{-2}$ ). Some sort of reference or description of the value

Line 327 ca. I think that it is more correct to use approximately

Line 347 Figure 5. Is this figure 5c and 5f?

Line 357 and figure 6: Does it make sense to make a fit of all months when the concentration is the same in group 2.. Instead could group 2 have a different colorcoding/symbols of the dots?

Line 411. See line 327

Line 434 A bit unclear what normalized (none normalized). What are they normalized with?

Section 4.3 I would probably move 4.3 to the end of the summary/conclusion section

Figure 5. I think that the y-axis to the left can be removed (model, KIMURA/ERA-Interim, PIOMAS)

Figure 7: References to sub-figure  
d needs to be c in the first and last occurrence on line 731