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Sea ice budget evaluation in 21th century model simaulations

C. Koeberle and R. Gerdes

Alfred Wegener Institute for Polar and Marine Research, Bremerhaven, Germany
(ckoeberl@awi-bremerhaven.de)

Climate scenarios predict a more or less pronounced thinning and a retreat of the Arctic sea ice. The models with the strongest trends even produce an ice free summer situation within the next 100 years. It is unclear so far which kind of new balance the sea ice budget will reach. Increased areas of open water at the onset of winter could e.g. lead to increased ice production with subsequent increased ice and/or fresh water export through Fram Strait with consequences for the subpolar Ocean.

We have already determined which models of the actual IPCC assessment do especially well in modelling the ice parameters and their variability in the 20th century runs. We will show the budget for the best (in that sense) models and discuss differences. We will also use the atmospheric data set of the best model to force a coupled sea ice-ocean model. The budget will be shown and any differences to the IPCC model which produced the forcing data will be discussed. Sensitivity experiments with the constrained model allow to check the effects of modifications.