

PAMIP Webinar Series

Horizontal resolution independence of mid-latitude response to arctic amplification

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Abstract

In this study, we use the atmospheric model OpenIFS, in a set of model experiments following the protocol outlined in the Polar Amplification Model Intercomparison Project (PAMIP), to investigate whether the simulated atmospheric response to future changes in Arctic sea ice fundamentally depends on model resolution. More specifically, we increase the horizontal resolution of the model from **125km** to **39km** with 91 vertical levels; in a second step resolution is further increased to **16km** with 137 levels in the vertical. The model does produce a response to sea ice decline with a weaker mid latitude Atlantic jet and increased blocking in the high latitude Atlantic, but no sensitivity to resolution can be detected with 100 members. Furthermore we find that the ensemble convergence toward the mean is not impacted by the model resolutions considered here.



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