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Decadal predictions with the HiGEM climate model

Len SHAFFREY

NCAS-Climate, University of Reading, UK, l.c.shaffrey@reading.ac.uk
Dave Stevens, Ed Hawkins, Chun-Kit Ho, Dan Hodson, Grenville Lister, Jon Robson, Rowan Sutton
Presenter : Jon Robson, NCAS-Climate, University of Reading, UK, j.i.robson@reading.ac.uk

To explore the question of how increased resolution might improve predictions at regional scales, a high resolution global coupled climate model, HiGEM, has been developed. This model is based on the Met Office Hadley Centre global coupled climate model, HadGEM1. In HiGEM the horizontal resolution in the atmosphere is increased to 1.25x0.83 degrees longitude by latitude, while the resolution in the ocean is increased to an eddy-permitting resolution of 1/3x1/3 degrees. Increasing the horizontal resolution results in an improved representation of a number of climate phenomena in HiGEM, including ENSO, Northern Hemisphere planetary waves and subtropical stratocumulus.

We have completed a set of decadal hindcasts following the CMIP5 protocol using HiGEM. The methodology for the HiGEM decadal predictions is based on that used in Met Office DePreSys system, where the ocean model is initialised using anomaly assimilation. The latest results from the hindcasts will be presented.