Towards the first "eddy-resolving" climate prediction system: Predicting the 2015 subpolar "Cold Blob" and its impacts

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• MPI-ESM-ER
  • MPI-OM TP06M 0.1° nominal resolution, 40 z-levels
  • ECHAM6.3: T127 (1°), 95 levels, high top.
• 3 ensemble members initialized in Nov every 2nd year between 1992 and 2012 (2 years long)
• Initialisation of 3D T & S anomalies (ORAS4), sea ice cover anomalies (NSIDC), full-field atmospheric state (ERA40, ERA-Interim)

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The "ocean eddy-resolving" grid configuration improves the mean state of subpolar North Atlantic.

Large ensemble prediction experiment with the MPI-ESM-ER could reforecast the 2015 record Subpolar North Atlantic "Cold Blob".
North Atlantic Subpolar SST in 2015

Observations

"Coldest" member hind_2014

"Coldest" member hind_2013
European surface air temperature anomalies in summer 2015

ERA Interim in July 2015

"Coldest" member hind_2013 in June 2015

- However, predicting the observed spatial extent, timing and impacts remains a challenge.