Ice Historical Forecast Project

a WGSIP project

Drew Peterson, UKMO Hadley Centre
Dirk Notz and Steffen Tietsche, Max Planck Institute, Hamburg, Germany
Matthieu Chevallier, Meteo France/CNRS, Toulouse, France
William Merryfield, CCCma, Victoria, BC, Canada
Adam Scaife, UKMO Hadley Centre, WGSIP co-chair
Multimodel Experiment with Four Prediction Systems

UKMO GloSea4 (Arribas et al., 2011, 2012)

Max Planck Institute MPI-ESM (Steffen Tietsche and Dirk Notz)

Meteo-France CNRM CM5.1 (Voldoire et al., 2012, Chevallier et al., 2012)

CCCma CanSIPS (Merryfield et al., 2012)

- 9 members for 2007 and 1996
- with and without sea ice initialised according to observed extents
- 1 November and 1 August initialisation for Winter and Autumn
Difference in Sea Ice due to Initialisation

UKMO

MPI

MeteoFr

CCCma

Nov

Aug
Autumn Near Surface Temperature Response
Autumn Geopotential Height Response (@ 500hPa)
Winter Near Surface Temperature Response
Winter Geopotential Height Response (@ 500hPa)
Summary

Multiple Models show similar effects of ice initialization

Also similar to observed regressions

Winter circulation has blocking pattern over Scandanavia, reduced European temperatures

Also blocking pattern over west Pacific and reduced North American temperatures

Autumn circulation has jet stream returning south over Europe

Exact location varies with model

Paper in preparation:

Peterson et al 2012: The Effects of Sea Ice initialisation on Seasonal Forecasts – the WGSIP IceHFP Project