

Is Atlantic multi-decadal variability about to change phase?

Leon HERMANSON

Met Office, UK, leon.hermanson@metoffice.gov.uk

Martin Andrews, Nick Dunstone, Rosie Eade, Jeff Knight, Adam Scaife, Doug Smith

Presenter : Leon Hermanson

Multi-decadal variations in North Atlantic sea surface temperatures (often referred to as the Atlantic Multi-decadal Oscillation (AMO) or Atlantic Multi-decadal Variability (AMV)), are thought to drive important climate impacts including rainfall over parts of Africa, North and South America and Europe, and Atlantic hurricane activity. AMV entered a positive (warm) phase in the mid 1990s, but a reversal back to a cold phase could potentially occur at any time. Previous studies using retrospective decadal predictions suggest that the mid-1990s phase change could have been predicted. We study several versions of the UK Met Office Decadal Prediction System (DePreSys) to look for signs of a return to a cold phase. Indeed, some forecasts initialised in 2012 suggest that the Atlantic subpolar gyre will cool over the next five years followed by a general cooling in the North Atlantic SSTs. There is also a simultaneous decrease in the Atlantic Meridional Overturning Circulation (AMOC). We investigate the mechanisms behind this and the skill in the models for predicting these mechanisms.