

International Climate of the Twentieth Century Project

Climate of the 20th Century Project Overview

The International CLIVAR Climate of the 20th Century Project (C20C; Folland et al., 2002) brings together climate modeling groups to study climate variations and changes over the last 150 years using observational data and global climate models. Both atmospheric general circulation models (AGCMs) – typically forced with observed values of atmospheric composition (concentrations of greenhouse gases and aerosols) and surface conditions (SST, sea ice, land surface vegetation, etc.) – and coupled atmosphere-ocean-land-ice models (CGCMs) are employed in C20C numerical experiments and simulations. The C20C project was originally established by the Hadley Centre in the early 1990s to feed into the Climate Models – Evaluation chapter of the second IPCC Report. Since 1999 it has been maintained as a volunteer cooperative with coordination from the Hadley Centre and the Center for Ocean-Land-Atmosphere Studies. Its main tools are AGCMs in ensemble mode run against a common observation-based surface conditions data set with or without other forcings or CGCMs with specified protocols. A key surface data set has been HadISST1. The main aim until recently has been to determine the impact of variations and changes in surface conditions, and sometimes other forcings, to support studies of climate variability and predictability on time scales of a season to many decades. A recent offshoot of the project has been published papers that have studied the relative merits of GCMs and AGCMs for such studies (related to the Weather Noise project below).

The project has led to a large number of peer-reviewed publications (see below), and has had an impact on climate change assessments made by the Inter-governmental Panel on Climate Change as well as several national assessments.

The C20C project was reorganized at its 5th Workshop (Beijing, October 2010) to focus on the new core topic, research into the validity and methodology of operational detection and attribution. This is being done in conjunction with IDAG group and a likely new EU project. To support a key IDAG research methodology in this area, new versions of HadISST with and without the influences of greenhouse gases etc have been developed in the Met Office Hadley Centre and are being submitted for publication. These are collectively called HadISST2. Other new projects are also being developed to support the core goals of C20C and its new core project. Current projects are:

- HadISST2 (Hadley Centre's newly released global SST and sea ice analysis)
- Operational Detection and Attribution Research (new core project)
- Large scale Precipitation Trends
- Summer North Atlantic Oscillation Mechanisms and Predictability
- Weather Noise
- Mid-Latitude Predictability

A 6th C20C Workshop has been organized for November 2013 in Melbourne.



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Climate of the 20th Century Project
Relevant Papers
(updated July 2013)

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