HadCRUT4Table version 1 – date: 28.7.2016

HadCRUT4 Data Format Description

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1) File description

Ensemble members

HadCRUT4 is presented as an ensemble data set in which the 100 ensemble members sample the distribution of the systematic component of observational uncertainty described by the HadCRUT4 uncertainty model. These ensemble members are provided to allow users to assess the sensitivity of their analyses to uncertainties in the observational data set with long term correlation structures. The ensemble members are available in the files formatted as follows where N = 1 to 100:

tas_HadCRUT4_HadOBS_rN_HadCRUT-X-Y-Z-T_YYYMMDD-YYYMMDD.nc

Ensemble median

In addition to the HadCRUT4 ensemble a median file is available that contains fields of the median anomaly from the 100 ensemble members in each grid box. The ensemble median is indexed as ensemble member zero and available in the file:

tas_HadCRUT4_HadOBS_r0_HadCRUT-X-Y-Z-T_YYYYMMDD-YYYMMDD.nc

Uncertainty information

Measurement and grid box sampling uncertainties are not encoded into the HadCRUT4 ensemble members. Measurement and sampling uncertainties related to land and sea observations have different correlation structures and so are provided in separate files. The contribution to grid box anomaly uncertainty from land data is provided in:

tas_HadCRUT4_HadOBS_HadCRUT-X-Y-Z-T_uncorrelated.nc

and for blended land and sea data in:

tas_HadCRUT4_HadOBS_HadCRUT-X-Y-Z-T_uncorrelated_supplementary.nc

Additional information on uncertainty arising from correlation in measurement and sampling errors for sea-surface temperature anomalies (e.g. arising from movement of observation platforms) is available from http://www.metoffice.gov.uk/hadobs/hadcrut4/data/current/download.html.

2) Tables of netCDF file variable names, descriptions and dimensions

Table 1. Generic Dimensions for HadCRUT4

Dimension Name	Dimensions
bnds	2 elements

field_status_string	1 character
latitude	36 grid boxes
longitude	72 grid boxes
time	UNLIMITED

Table 2. Generic Variables for HadCRUT4

Variable Name	standard_name	long_name	units	Dimensions	cell_methods	comments
field_status		field_status		time, field_status_string_length		Processing status of field at time instant. Preliminary fields may be updated with additional data/quality control. Finalised fields are fixed and will not be updated within this version of HadCRUT4. p=preliminary, f=finalised
latitude	latitude	latitude	degrees north	latitude		
latitudebnds				latitude, bnds		
longitude	longitude	longitude	degrees east	longitude		
longitudebnds				longitude, bnds		
temperature_anomaly		near_surface_temperature_anomaly	K	time, latitude, longitude		Blended near surface (~2m) air temperature anomaly over land and sea surface temperature anomaly over ocean referenced to 1961-1990
standard_error		near_surface_temperature_anomaly standard_error	K	time, latitude, longitude		
time	time	time	days since 1850-1-1 00:00:00	time		

Table 3. Generic Global Attributes for HadCRUT4

Global Attribute Name	Description
Conventions	CF version that the netCDF file has been checked against
comment	any other notes of interest
ensemble_member_index	Ensemble member index for this ensemble member. An ensemble member index of 0 indicates a statistic derived from the ensemble, such as the ensemble median, or auxiliary uncertainty information that is provided in addition to the ensemble.
ensemble_members	Total number of ensemble members in the data set.
history	File update date

institution	list of contributing institutions
reference	Key journal article to be cited and read for more information
source	source input datasets
title	title of product
version	Dataset version number. HadCRUT.X.Y.Z.T: X = major version number, Y = major update to methodology, code or source data, Z, = minor update to code, methodology or source data, T = reserved for future use.