

Definitions

Acronyms and Abbreviations

AFCCC	- Air Force Combat Climatology Center
ALA	- Alaska and North West Canada
AMZ	- Amazonia
ANT+NAT	- A simple linear combination of the ANTHRO and NATURAL ensembles
ANTHRO	- an ensemble of four HadCM3 runs with anthropogenic forcings only
CAM	- Central America
CAN	- Central North America
CAR	- Caribbean
CAS	- Central Asia
CCSP	- Climate Change Science Program
CDD	- correlation decay distance
CDIAC	- Carbon Dioxide Information Analysis Center
CGI	- East Canada, Greenland and Iceland
CIAT	- Centro Internacional de Agricultura Tropical
CONTROL	- 27 overlapping 31 year segments from the HadCM3 control run
CRU	- Climate Research Unit
D & A	- Detection and Attribution
DAI	- Dai (2006) – surface humidity dataset
DJF	- December January February
EAF	- East Africa
EAS	- East Asia
ECMWF	- European Centre for Medium-Range Weather Forecasts
ENA	- Eastern North America
ENSO	- El Niño Southern Oscillation
ERA	- ECMWF Re-Analysis
FAO	- Food and Agricultural Organisation
FD	- first difference
GCM	- General Circulation Model / Global Climate Model
GCOS	- Global Climate Observing System
GFDL	- Geophysical Fluid Dynamics Model
GOME	- Global Ozone Monitoring Experiment
GMT	- Greenwich Mean Time
GR	- Gaffen & Ross (1999) – surface humidity dataset
GTS	- Global Telecommunications System
HadAT	- Hadley Centre globally gridded upper-air radiosonde temperature dataset (Thorne <i>et al.</i> , 2005)
HadCM3	- third version of the Hadley Centre GCM
HadCRUH	- Hadley Centre / Climatic Research Unit surface humidity dataset
HadCRUT3	- Hadley Centre / Climatic Research Unit globally gridded near-surface temperature dataset (Brohan <i>et al.</i> , 2006)
HadGEM1	- first version of the Hadley Centre Global Environmental Model

HadISST	- Hadley Centre sea ice and <i>SST</i> dataset (Rayner <i>et al.</i> , 2003)
HadMAT1	- optimally interpolated Hadley Centre <i>MAT</i> dataset (Rayner <i>et al.</i> , 2003)
HadRT	- Hadley Centre globally gridded radiosonde upper air temperature dataset (Parker <i>et al.</i> , 1997)
HadSLP	- Hadley Centre <i>SLP</i> dataset (Allan & Ansell, <i>accepted</i>)
HadSST2	- Hadley Centre <i>SST</i> dataset (Rayner <i>et al.</i> , 2006)
HadTH	- Hadley Centre gridded homogenised radiosonde humidity dataset (analysed in McCarthy & Willett, 2006)
HAHN	- Hahn and Warren dataset - (Hahn & Warren, 1999)
HIRS	- High Resolution Infrared Sounder
IGRA	- International Global Radiosonde Archive
IPCC	- Intergovernmental Panel on Climate Change
IND	- Indian Ocean
ISH	- Integrated Surface Hourly (land humidity data source from NCDC)
ISSM	- Ishii <i>et al.</i> (2005) – surface humidity dataset
JJA	- June July August
KAI	- Kaiser (2000) – surface humidity dataset
K-S	- Kolmogorov-Smirnov – statistical test
LSR	- Least Squares Regression – trend fitting method
MAM	- March April May
MCDW	- Monthly Climatic Data for the World – NCDC, NOAA
MDS	- Marine Data System
MED	- Mediterranean
MEDS	- Marine Environment Data Service
MOHMAT43N	- Hadley Centre <i>MAT</i> dataset (Rayner <i>et al.</i> , 2003)
MPS	- Median of Pairwise Slopes – trend fitting method
MT	- McCarthy & Toumi (2004) – satellite humidity dataset
NAS	- North Asia
NAT	- North Atlantic
NATURAL	- an ensemble of four HadCM3 runs with natural forcings only
NAU	- North Australia
NCAR	- National Center for Atmospheric Research
NCDC	- National Climatic Data Center
NCDIAMS	- National Climate Data and Information Archive of the Meteorological Service
NCEP	- National Centers for Environmental Prediction
NEU	- North Europe
NEW	- New <i>et al.</i> (2000); Folland <i>et al.</i> (2001b) – surface humidity dataset
NOAA	- National Oceanic and Atmospheric Administration
NPA	- North Pacific
NSRDB	- National Solar Radiation Data Base
PCL	- Parallel Climate Model
PMA	- pentad (5 day mean) mean anomaly
QC	- quality control
REML	- Restricted Maximum Likelihood – trend fitting method
ROB	- Robinson (2000) – surface humidity dataset
RSS	- Remote Sensing Systems
SAF	- South Africa
SAH	- Sahara
SAS	- South Asia

SAT	- South Atlantic
SAU	- South Australia
SD	- standard deviation
SEA	- South East Asia
SEU	- South Europe and North Africa
SON	- September October November
SPA	- South Pacific
SSA	- southern South America
SSM/I	- Special Sensor Microwave Imager
SSR	- Schönwiese & Rapp (1997); Schönwiese <i>et al.</i> (2004); Folland <i>et al.</i> (2001b) – surface humidity dataset
TIB	- Tibetan Plateau
TREN	- Trenberth <i>et al.</i> (2005) – satellite humidity dataset
VWV	- van Wijngaarden & Vincent (2005) – surface humidity dataset
WAF	- West Africa
WAG	- Wagner <i>et al.</i> (2006 – satellite humidity dataset
WBAN	- US Weather Bureau Army Navy
WG	- Wang & Gaffen (2001) – surface humidity dataset
WMO	- World Meteorological Organization
WNA	- Western North America
WOR	- Worley <i>et al.</i> (2003) – surface humidity dataset

Naming Conventions for Meteorological Variables

C_p	- specific heat capacity of air at constant pressure ($\text{J kg}^{-1} \text{K}^{-1}$)
DPD	- dewpoint depression ($^{\circ}\text{C}$)
DTR	- diurnal temperature range ($^{\circ}\text{C}$)
e	- vapour pressure (hPa)
e_s	- saturated vapour pressure (hPa)
H	- moist enthalpy (J kg^{-1})
L	- latent heat of vapourisation (J kg^{-1})
$LSAT$	- land surface air temperature ($^{\circ}\text{C}$)
MAT	- marine air temperature ($^{\circ}\text{C}$)
m_d	- mass of dry air (kg)
m_v	- mass of water vapour (kg)
P	- pressure (hPa)
PW	- precipitable water (mm)
q	- specific humidity (g kg^{-1})
q_s	- saturated specific humidity (g kg^{-1})
R	- specific gas constant for moist air (which can be substituted with the dry air value $287 \text{ J K}^{-1} \text{ kg}^{-1}$)
RH	- relative humidity (%)
R_v	- specific gas constant for water vapour ($462 \text{ J K}^{-1} \text{ kg}^{-1}$)
SLP	- sea level pressure (hPa)
SST	- sea surface temperature ($^{\circ}\text{C}$)
T	- temperature ($^{\circ}\text{C}$)
T_{dw}	- dewpoint temperature ($^{\circ}\text{C}$)
T_w	- wet-bulb temperature ($^{\circ}\text{C}$)
$UTRH$	- upper tropospheric relative humidity (%)
V	- volume (m^3)
ρ	- density (kg m^{-3})
ρ_v	- water vapour density (kg m^{-3})

