CDO Reference Card

Climate Data Operator
Version 2.2.0
March 2023

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https://code.mpimet.mpg.de/projects/cdo

Syntax

cdo [Options] **Operator1** [–**Operator2** [–**OperatorN**]]

Options

-a	Generate an absolute time axis
-b <*nbits*>	Set the number of bits for the output precision (I8/I16/I32/F32/F64 for nc1,nc2,nc4,nc4c; F32/F64 for grb2,srv,ext,ieg; 1-24 for grb1,grb2) Add L or B for Little or Big endian byteorder
-f <*format*>	Outputformat: grb1,grb2,nc1,nc2,nc4,nc4c,srv,ext,ie
-g <*grid*>	Grid or file name Grid names: `r<NX>x<NY>`, `n<N>`, `gme<NI>`
-h	Help information for the operators
-M	Indicate that the I/O streams have missing values
-m <*missval*>	Set the default missing value (default: `-9e+33`)
-O	Overwrite existing output file, if checked
-R	Convert GRIB1 data from reduced to regular grid
-r	Generate a relative time axis
-s	Silent mode
-t <*table*>	Set the parameter table name or file Predefined tables: echam4 echam5 mpiom1
-V	Print the version number
-v	Print extra details for some operators
-z szip	SZIP compression of GRIB1 records

Operators

Information

info	Dataset information listed by parameter identifier
infon	Dataset information listed by parameter name
map	Dataset information and simple map
<*operator*> `infiles`	

sinfo	Short information listed by parameter identifier
sinfon	Short information listed by parameter name
<*operator*> `infiles`	

diff	Compare two datasets listed by parameter id
diffn	Compare two datasets listed by parameter name
<*operator*>*[,options]* `infile1 infile2`	

npar	Number of parameters
nlevel	Number of levels
nyear	Number of years
nmon	Number of months
ndate	Number of dates
ntime	Number of timesteps
ngridpoints	Number of gridpoints
ngrids	Number of horizontal grids
<*operator*> `infile`	

showformat	Show file format
showcode	Show code numbers
showname	Show variable names
showstdname	Show standard names
showlevel	Show levels
showltype	Show GRIB level types
showyear	Show years
showmon	Show months
showdate	Show date information
showtime	Show time information
showtimestam	Show timestamp
<*operator*> `infile`	

showattribute	Show a global attribute or a variable attribute
showattribute*[,attributes]* `infile`	

partab	Parameter table
codetab	Parameter code table
griddes	Grid description
zaxisdes	Z-axis description
vct	Vertical coordinate table
<*operator*> `infile`	

File operations

apply	Apply operators on each input file.
apply,*operators* `infiles`	

copy	Copy datasets
clone	Clone datasets
cat	Concatenate datasets
<*operator*> `infiles outfile`	

tee	Duplicate a data stream
tee,*outfile2* `infile outfile1`	

pack	Pack data
pack `infile outfile`	

bitrounding	Bit rounding
bitrounding*[,params]* `infile outfile`	

replace	Replace variables
replace `infile1 infile2 outfile`	

duplicate	Duplicates a dataset
duplicate*[,ndup]* `infile outfile`	

mergegrid	Merge grid
mergegrid `infile1 infile2 outfile`	

merge	Merge datasets with different fields
mergetime	Merge datasets sorted by date and time
<*operator*> `infiles outfile`	

splitcode	Split code numbers
splitparam	Split parameter identifiers
splitname	Split variable names
splitlevel	Split levels
splitgrid	Split grids
splitzaxis	Split z-axes
splittabnum	Split parameter table numbers
<*operator*>*[,params]* `infile obase`	

splithour	Split hours
splitday	Split days
splitseas	Split seasons
splityear	Split years
splityearmon	Split in years and months
<*operator*> `infile obase`	
splitmon	Split months
splitmon*[,format]* `infile obase`	

splitsel	Split time selection
splitsel,*nsets[,noffset[,nskip]]* `infile obase`	

distgrid	Distribute horizontal grid
distgrid,*nx[,ny]* `infile obase`	

collgrid	Collect horizontal grid
collgrid*[,nx[,names]]* `infiles outfile`	

Selection

select	Select fields
delete	Delete fields
<*operator*>,*params* `infiles outfile`	

selmulti	Select multiple fields
delmulti	Delete multiple fields
changemulti	Change identication of multiple fields
<*operator*>,*selection-specification* `infile outfile`	

selparam	Select parameters by identifier
delparam	Delete parameters by identifier
<*operator*>,*params* `infile outfile`	
selcode	Select parameters by code number
delcode	Delete parameters by code number
<*operator*>,*codes* `infile outfile`	
selname	Select parameters by name
delname	Delete parameters by name
<*operator*>,*names* `infile outfile`	
selstdname	Select parameters by standard name
selstdname,*stdnames* `infile outfile`	
sellevel	Select levels
sellevel,*levels* `infile outfile`	
sellevidx	Select levels by index
sellevidx,*levidx* `infile outfile`	
selgrid	Select grids
selgrid,*grids* `infile outfile`	
selzaxis	Select z-axes
selzaxis,*zaxes* `infile outfile`	
selzaxisname	Select z-axes by name
selzaxisname,*zaxisnames* `infile outfile`	
selltype	Select GRIB level types
selltype,*ltypes* `infile outfile`	
seltabnum	Select parameter table numbers
seltabnum,*tabnums* `infile outfile`	

seltimestep	Select timesteps
seltimestep,*timesteps* `infile outfile`	
seltime	Select times
seltime,*times* `infile outfile`	
selhour	Select hours
selhour,*hours* `infile outfile`	
selday	Select days
selday,*days* `infile outfile`	
selmonth	Select months
selmonth,*months* `infile outfile`	
selyear	Select years
selyear,*years* `infile outfile`	
selseason	Select seasons
selseason,*seasons* `infile outfile`	
seldate	Select dates
seldate,*startdate[,enddate]* `infile outfile`	
selsmon	Select single month
selsmon,*month[,nts1[,nts2]]* `infile outfile`	

sellonlatbox	Select a longitude/latitude box
sellonlatbox,*lon1,lon2,lat1,lat2* `infile outfile`	
selindexbox	Select an index box
selindexbox,*idx1,idx2,idy1,idy2* `infile outfile`	

selregion	Select cells inside regions
selregion,*regions* `infile outfile`	
selcircle	Select cells inside a circle
selcircle*[,lon,lat,radius]* `infile outfile`	

selgridcell	Select grid cells
delgridcell	Delete grid cells
<*operator*>,*indices* `infile outfile`	

samplegrid	Resample grid
samplegrid,*factor* `infile outfile`	

selyearidx	Select year by index
selyearidx `infile1 infile2 outfile`	

bottomvalue	Extract bottom level
topvalue	Extract top level
<*operator*> `infile outfile`	
isosurface	Extract isosurface
isosurface,*isovalue* `infile outfile`	

Conditional selection

ifthen	If then
ifnotthen	If not then
<*operator*> `infile1 infile2 outfile`	

ifthenelse	If then else
ifthenelse `infile1 infile2 infile3 outfile`	

ifthenc	If then constant
ifnotthenc	If not then constant
<*operator*>,*c* `infile outfile`	

reducegrid	Reduce input file variables to locations, where mask
reducegrid,*mask[,limitCoordsOutput]* `infile outfile`	

Comparison

eq	Equal
ne	Not equal
le	Less equal
lt	Less than
ge	Greater equal
gt	Greater than
<*operator*> `infile1 infile2 outfile`	

eqc	Equal constant
nec	Not equal constant
lec	Less equal constant
ltc	Less than constant
gec	Greater equal constant
gtc	Greater than constant
<*operator*>,*c* `infile outfile`	

Modification

setattribute	Set attributes
setattribute,*attributes* `infile outfile`	

setpartabp	Set parameter table
setpartabn	Set parameter table
<*operator*>,*table[,convert]* `infile outfile`	

setcodetab	Set parameter code table
setcodetab,*table* `infile outfile`	
setcode	Set code number
setcode,*code* `infile outfile`	
setparam	Set parameter identifier
setparam,*param* `infile outfile`	
setname	Set variable name
setname,*name* `infile outfile`	
setunit	Set variable unit
setunit,*unit* `infile outfile`	
setlevel	Set level
setlevel,*level* `infile outfile`	
setltype	Set GRIB level type
setltype,*ltype* `infile outfile`	

setdate Set date
setdate,*date* infile outfile

settime Set time of the day
settime,*time* infile outfile

setday Set day
setday,*day* infile outfile

setmon Set month
setmon,*month* infile outfile

setyear Set year
setyear,*year* infile outfile

settunits Set time units
settunits,*units* infile outfile

settaxis Set time axis
settaxis,*date*,*time*[,*inc*] infile outfile

settbounds Set time bounds
settbounds,*frequency* infile outfile

setreftime Set reference time
setreftime,*date*,*time*[,*units*] infile outfile

setcalendar Set calendar
setcalendar,*calendar* infile outfile

shifttime Shift timesteps
shifttime,*sval* infile outfile

chcode Change code number
chcode,*oldcode*,*newcode*[,...] infile outfile

chparam Change parameter identifier
chparam,*oldparam*,*newparam*,... infile outfile

chname Change variable or coordinate name
chname,*oldname*,*newname*,... infile outfile

chunit Change variable unit
chunit,*oldunit*,*newunit*,... infile outfile

chlevel Change level
chlevel,*oldlev*,*newlev*,... infile outfile

chlevelc Change level of one code
chlevelc,*code*,*oldlev*,*newlev* infile outfile

chlevelv Change level of one variable
chlevelv,*name*,*oldlev*,*newlev* infile outfile

setgrid Set grid
setgrid,*grid* infile outfile

setgridtype Set grid type
setgridtype,*gridtype* infile outfile

setgridarea Set grid cell area
setgridarea,*gridarea* infile outfile

setgridmask Set grid mask
setgridmask,*gridmask* infile outfile

setzaxis Set z-axis
setzaxis,*zaxis* infile outfile

genlevelbound Generate level bounds
genlevelbounds[,*zbot*[,*ztop*]] infile outfile

invertlat Invert latitudes
invertlat infile outfile

invertlev Invert levels
invertlev infile outfile

shiftx Shift x
shifty Shift y
<*operator*>,*jnshift¿*,*jcyclic¿*,*jcoord¿* infile outfile

maskregion Mask regions
maskregion,*regions* infile outfile

masklonlatbox Mask a longitude/latitude box
masklonlatbox,*lon1*,*lon2*,*lat1*,*lat2* infile outfile
maskindexbox Mask an index box
maskindexbox,*idx1*,*idx2*,*idy1*,*idy2* infile outfile

setclonlatbox Set a longitude/latitude box to constant
setclonlatbox,*c*,*lon1*,*lon2*,*lat1*,*lat2* infile outfile
setcindexbox Set an index box to constant
setcindexbox,*c*,*idx1*,*idx2*,*idy1*,*idy2* infile outfile

enlarge Enlarge fields
enlarge,*grid* infile outfile

setmissval Set a new missing value
setmissval,*newmiss* infile outfile
setctomiss Set constant to missing value
setmisstoc Set missing value to constant
<*operator*>,*c* infile outfile
setrtomiss Set range to missing value
setvrange Set valid range
<*operator*>,*rmin*,*rmax* infile outfile
setmisstonn Set missing value to nearest neighbor
setmisstonn infile outfile
setmisstodis Set missing value to distance-weighted average
setmisstodis[,*neighbors*] infile outfile

setgridcell Set the value of a grid cell
setgridcell,*params* infile outfile

Arithmetic

expr Evaluate expressions
expr,*instr* infile outfile
exprf Evaluate expressions script
exprf,*filename* infile outfile
aexpr Evaluate expressions and append results
aexpr,*instr* infile outfile
aexprf Evaluate expression script and append results
aexprf,*filename* infile outfile

abs Absolute value
int Integer value
nint Nearest integer value
pow Power
sqr Square
sqrt Square root
exp Exponential
ln Natural logarithm
log10 Base 10 logarithm
sin Sine
cos Cosine
tan Tangent
asin Arc sine
acos Arc cosine
atan Arc tangent
reci Reciprocal value
not Logical NOT
<*operator*> infile outfile

addc Add a constant
subc Subtract a constant
mulc Multiply with a constant
divc Divide by a constant
minc Minimum of a field and a constant
maxc Maximum of a field and a constant
<*operator*>,*c* infile outfile

add Add two fields
sub Subtract two fields
mul Multiply two fields
div Divide two fields
min Minimum of two fields
max Maximum of two fields
atan2 Arc tangent of two fields
<*operator*> infile1 infile2 outfile

dayadd Add daily time series
daysub Subtract daily time series
daymul Multiply daily time series
daydiv Divide daily time series
<*operator*> infile1 infile2 outfile

monadd Add monthly time series
monsub Subtract monthly time series
monmul Multiply monthly time series
mondiv Divide monthly time series
<*operator*> infile1 infile2 outfile

yearadd Add yearly time series
yearsub Subtract yearly time series
yearmul Multiply yearly time series
yeardiv Divide yearly time series
<*operator*> infile1 infile2 outfile

yhouradd Add multi-year hourly time series
yhoursub Subtract multi-year hourly time series
yhourmul Multiply multi-year hourly time series
yhourdiv Divide multi-year hourly time series
<*operator*> infile1 infile2 outfile

ydayadd Add multi-year daily time series
ydaysub Subtract multi-year daily time series
ydaymul Multiply multi-year daily time series
ydaydiv Divide multi-year daily time series
<*operator*> infile1 infile2 outfile

ymonadd Add multi-year monthly time series
ymonsub Subtract multi-year monthly time series
ymonmul Multiply multi-year monthly time series
ymondiv Divide multi-year monthly time series
<*operator*> infile1 infile2 outfile

yseasadd Add multi-year seasonal time series
yseassub Subtract multi-year seasonal time series
yseasmul Multiply multi-year seasonal time series
yseasdiv Divide multi-year seasonal time series
<*operator*> infile1 infile2 outfile

muldpm Multiply with days per month
divdpm Divide by days per month
muldpy Multiply with days per year
divdpy Divide by days per year
<*operator*> infile outfile

mulcoslat Multiply with the cosine of the latitude
divcoslat Divide by cosine of the latitude
<*operator*> infile outfile

Statistical values

Available statistical functions	<*stat*>
minimum	**min**
maximum	**max**
range	**range**
sum	**sum**
mean	**mean**
average	**avg**
variance	**var, var1**
standard deviation	**std, std1**

timcumsum Cumulative sum over all timesteps
timcumsum infile outfile

consects Consecutive Timesteps
<*operator*> infile outfile

vars<*stat*> Statistical values over all variables
<*operator*> infile outfile

ens<*stat*> Statistical values over an ensemble
ensskew Ensemble skewness
enskurt Ensemble kurtosis
ensmedian Ensemble median
<*operator*> infiles outfile
enspctl Ensemble percentiles
enspctl,*p* infiles outfile

ensrkhistspace Ranked Histogram averaged over time
ensrkhisttime Ranked Histogram averaged over space
ensroc Ensemble Receiver Operating characteristics
<*operator*> obsfile ensfiles outfile

enscrps Ensemble CRPS and decomposition
enscrps rfile infiles outfilebase
ensbrs Ensemble Brier score
ensbrs,*x* rfile infiles outfilebase

fld<*stat*> Statistical values over a field
<*operator*> infile outfile
fldint Field integral
<*operator*>,*weights* infile outfile
fldskew Field skewness
fldkurt Field kurtosis
fldmedian Field median
fldcount Field count
<*operator*> infile outfile
fldpctl Field percentiles
fldpctl,*p* infile outfile

zon<*stat*> Zonal statistical values
<*operator*> infile outfile
zonmean[,*zonaldes*] infile outfile
zonskew Zonal skewness
zonkurt Zonal kurtosis
zonmedian Zonal median
<*operator*> infile outfile
zonpctl Zonal percentiles
zonpctl,*p* infile outfile

mer<*stat*> Meridional statistical values
merskew Meridional skewness
merkurt Meridional kurtosis
mermedian Meridional median
<*operator*> infile outfile
merpctl Meridional percentiles
merpctl,*p* infile outfile

gridbox<*stat*> Statistical values over grid boxes
gridboxskew Gridbox skewness
gridboxkurt Gridbox kurtosis
gridboxmedian Gridbox median
<*operator*>,*nx*,*ny* infile outfile

remap<*stat*> Remaps source points to target cells
remapskew Remap skewness
remapkurt Remap kurtosis
remapmedian Remap median
<*operator*>,*grid* infile outfile

vert<*stat*> Vertical statistical values
<*operator*>,*weights* infile outfile

timsel<*stat*> Time range statistical values
<*operator*>,*nsets*[,*noffset*[,*nskip*]] infile outfile

timselpctl Time range percentiles
timselpctl,*p*,*nsets*[,*noffset*[,*nskip*]] infile1 infile2 infile3 outfil

run<*stat*> Running statistical values
<*operator*>,*nts* infile outfile

runpctl Running percentiles
runpctl,*p*,*nts* infile outfile

tim<*stat*> Statistical values over all timesteps
<*operator*> infile outfile

timpctl Time percentiles
timpctl,*p* infile1 infile2 infile3 outfile

hour<*stat*> Hourly statistical values
<*operator*> infile outfile

hourpctl Hourly percentiles
hourpctl,*p* infile1 infile2 infile3 outfile

day<*stat*> Daily statistical values
<*operator*> infile outfile

daypctl Daily percentiles
daypctl,*p* infile1 infile2 infile3 outfile

mon<*stat*> Monthly statistical values
<*operator*> infile outfile

monpctl Monthly percentiles
monpctl,*p* infile1 infile2 infile3 outfile

yearmonmean Yearly mean from monthly data
yearmonmean infile outfile

year<*stat*> Yearly statistical values
yearminidx Yearly minimum indices
yearmaxidx Yearly maximum indices
<*operator*> infile outfile

yearpctl Yearly percentiles
yearpctl,*p* infile1 infile2 infile3 outfile

seas<*stat*> Seasonal statistical values
<*operator*> infile outfile

seaspctl Seasonal percentiles
seaspctl,*p* infile1 infile2 infile3 outfile

yhour<*stat*> Multi-year hourly statistical values
<*operator*> infile outfile

dhour<*stat*> Multi-day hourly statistical values
<*operator*> infile outfile

yday<*stat*> Multi-year daily statistical values
<*operator*> infile outfile

ydaypctl Multi-year daily percentiles
ydaypctl,*p* infile1 infile2 infile3 outfile

ymon<*stat*> Multi-year monthly statistical values
<*operator*> infile outfile

ymonpctl Multi-year monthly percentiles
ymonpctl,*p* infile1 infile2 infile3 outfile

yseas<*stat*> Multi-year seasonal statistical values
<*operator*> infile outfile

yseaspctl Multi-year seasonal percentiles
yseaspctl,*p* infile1 infile2 infile3 outfile

ydrun<*stat*> Multi-year daily running statistical values
<*operator*>,*nts* infile outfile

ydrunpctl Multi-year daily running percentiles
ydrunpctl,*p*,*nts* infile1 infile2 infile3 outfile

Correlation and co.

fldcor Correlation in grid space
fldcor infile1 infile2 outfile

timcor Correlation over time
timcor infile1 infile2 outfile

fldcovar Covariance in grid space
fldcovar infile1 infile2 outfile

timcovar Covariance over time
timcovar infile1 infile2 outfile

Regression

regres Regression
regres[,*equal*] infile outfile

detrend Detrend
detrend[,*equal*] infile outfile

trend Trend
trend[,*equal*] infile outfile1 outfile2

addtrend Add trend
subtrend Subtract trend
<*operator*>[,*equal*] infile1 infile2 infile3 outfile

EOFs

eof Calculate EOFs in spatial or time space
eoftime Calculate EOFs in time space
eofspatial Calculate EOFs in spatial space
eof3d Calculate 3-Dimensional EOFs in time space
<*operator*>,*neof* infile outfile1 outfile2

eofcoeff Calculate principal coefficients of EOFs
eofcoeff infile1 infile2 obase

Interpolation

remapbil Bilinear interpolation
genbil Generate bilinear interpolation weights
<*operator*>,*grid* infile outfile

remapbic Bicubic interpolation
genbic Generate bicubic interpolation weights
<*operator*>,*grid* infile outfile

remapnn Nearest neighbor remapping
gennn Generate nearest neighbor remap weights
<*operator*>,*grid* infile outfile

remapdis Distance weighted average remapping
remapdis,*grid*[,*neighbors*] infile outfile
gendis Generate distance weighted average remap weights
gendis,*grid* infile outfile

remapcon First order conservative remapping
gencon Generate 1st order conservative remap weights
<*operator*>,*grid* infile outfile

remapcon2 Second order conservative remapping
gencon2 Generate 2nd order conservative remap weights
<*operator*>,*grid* infile outfile

remaplaf Largest area fraction remapping
genlaf Generate largest area fraction remap weights
<*operator*>,*grid* infile outfile

remap Grid remapping
remap,*grid*,*weights* infile outfile

remapeta Remap vertical hybrid level
remapeta,*vct*[,*oro*] infile outfile

ml2pl Model to pressure level interpolation
ml2pl,*plevels* infile outfile
ml2hl Model to height level interpolation
ml2hl,*hlevels* infile outfile

ap2pl Air pressure to pressure level interpolation
ap2pl,*plevels* infile outfile

gh2hl Geometric height to height level interpolation
gh2hl,*hlevels* infile outfile

intlevel Linear level interpolation
intlevel,*levels* infile outfile

intlevel3d Linear level interpolation onto a 3D vertical coordin
intlevelx3d like intlevel3d but with extrapolation
<*operator*>,*tgtcoordinate* infile1 infile2 outfile

inttime Interpolation between timesteps
inttime,*date*,*time*[,*inc*] infile outfile
intntime Interpolation between timesteps
intntime,*n* infile outfile

intyear Interpolation between two years
intyear,*years* infile1 infile2 obase

Transformation

sp2gp Spectral to gridpoint
sp2gp[,*type*] infile outfile
gp2sp Gridpoint to spectral
gp2sp[,*type—trunc*] infile outfile

sp2sp Spectral to spectral
sp2sp,*trunc* infile outfile

dv2ps D and V to velocity potential and stream function
dv2ps infile outfile

dv2uv Divergence and vorticity to U and V wind
uv2dv U and V wind to divergence and vorticity
<*operator*>[,*gridtype*] infile outfile

fourier Fourier transformation
fourier,*epsilon* infile outfile

Import/Export

import_binary Import binary data sets
import_binary infile outfile

import_cmsaf Import CM-SAF HDF5 files
import_cmsaf infile outfile

import_amsr Import AMSR binary files
import_amsr infile outfile

input ASCII input
input,*grid*[,*zaxis*] outfile
inputsrv SERVICE ASCII input
inputext EXTRA ASCII input
<*operator*> outfile

output ASCII output
output infiles
outputf Formatted output
outputf,*format*[,*nelem*] infiles
outputint Integer output
outputsrv SERVICE ASCII output
outputext EXTRA ASCII output
<*operator*> infiles

outputtab Table output
outputtab,*params* infiles outfile

gmtxyz GMT xyz format
gmtcells GMT multiple segment format
<*operator*> infile

Miscellaneous

gradsdes GrADS data descriptor file
gradsdes[,*mapversion*] infile

after ECHAM standard post processor
after[,*vct*] infiles outfile

bandpass Bandpass filtering
bandpass,*fmin*,*fmax* infile outfile
lowpass Lowpass filtering
lowpass,*fmax* infile outfile
highpass Highpass filtering
highpass,*fmin* infile outfile

gridarea Grid cell area
gridweights Grid cell weights
<*operator*> infile outfile

smooth Smooth grid points
smooth[,*options*] infile outfile
smooth9 9 point smoothing
smooth9 infile outfile

smooth9 infile outfile

setvals Set list of old values to new values
setvals,*oldval*,*newval*[,...] infile outfile
setrtoc Set range to constant
setrtoc,*rmin*,*rmax*,*c* infile outfile
setrtoc2 Set range to constant others to constant2
setrtoc2,*rmin*,*rmax*,*c*,*c2* infile outfile

const Create a constant field
const,*const*,*grid* outfile
random Create a field with random numbers
random,*grid*[,*seed*] outfile
topo Create a field with topography
topo[,*grid*] outfile
seq Create a time series
seq,*start*,*end*[,*inc*] outfile
stdatm Create values for pressure and temperature for hydrostatic atmosphere
stdatm,*levels* outfile

timsort Sort over the time
timsort infile outfile

uvDestag Destaggering of u/v wind components
uvDestag,*u*,*v*[,*-/+0.5*[,*-/+0.5*]] infile outfile
rotuvNorth Rotate u/v wind to North pole.
projuvLatLon Cylindrical Equidistant projection
<*operator*>,*u*,*v* infile outfile

rotuvb Backward rotation
rotuvb,*u*,*v*,... infile outfile

mrotuvb Backward rotation of MPIOM data
mrotuvb infile1 infile2 outfile

mastrfu Mass stream function
mastrfu infile outfile

sealevelpressur Sea level pressure
gheight Geopotential height
<*operator*> infile outfile

adisit Potential temperature to in-situ temperature
adipot In-situ temperature to potential temperature
<*operator*>[,*pressure*] infile outfile

rhopot Calculates potential density
rhopot[,*pressure*] infile outfile

histcount Histogram count
histsum Histogram sum
histmean Histogram mean
histfreq Histogram frequency
<*operator*>,*bounds* infile outfile

sethalo Set the left and right bounds of a field
sethalo,*lhalo*,*rhalo* infile outfile

wct Windchill temperature
wct infile1 infile2 outfile

fdns Frost days where no snow index per time period
fdns infile1 infile2 outfile

strwin Strong wind days index per time period
strwin[,*v*] infile outfile

strbre Strong breeze days index per time period
strbre infile outfile

strgal Strong gale days index per time period
strgal infile outfile

hurr Hurricane days index per time period
hurr infile outfile

cmorlite CMOR lite
cmorlite,*table*[,*convert*] infile outfile

verifygrid Verify grid coordinates
verifygrid infile

NCL

uv2vr_cfd U and V wind to relative vorticity
uv2dv_cfd U and V wind to divergence
<*operator*>[,*u*,*v*,*boundOpt*,*outMode*] infile outfile