

# CDO Reference Card

Climate Data Operators  
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http://www.mpimet.mpg.de/cdo

## Syntax

cdo	[Options]	Operator1	[ −Operator2	[ −OperatorN	]
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## Options

-a	Generate an absolute time axis
-b <nbits>	Set the number of bits for the output precision (32/64 for nc,nc2,nc4,srv,ext,ieg; 1 - 32 for grb) Add L or B for Little or Big endian byteorder
-f <format>	Output file format (grb,nc,nc2,nc4,srv,ext,ieg)
-g <grid>	Grid name or file Available grids: t<RES>grid, r<NX>x<NY>
-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)
-R	Convert GRIB 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	Compress GRIB records with szip

## Operators

### Information

info	Dataset information listed by code number
infov	Dataset information listed by variable name
map	Dataset information and simple map
Syntax	<operator> ifiles

sinfo	Short dataset information listed by code number
sinfov	Short dataset information listed by variable name
Syntax	<operator> ifiles

diff	Compare two datasets listed by code number
diffv	Compare two datasets listed by variable name
Syntax	<operator> ifile1 ifile2

npar	Number of parameters
nlevel	Number of levels
nyear	Number of years
nmon	Number of months
ndate	Number of dates
ntime	Number of time steps
Syntax	<operator> ifile

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
showtimestamp	Show timestamp
Syntax	<operator> ifile

pardes	Parameter description
griddes	Grid description
zaxisdes	Z-axis description
vct	Vertical coordinate table
Syntax	<operator> ifile

## File operations

copy	Copy datasets
cat	Concatenate datasets
Syntax	<operator> ifiles ofile

replace	Replace variables
Syntax	replace ifile1 ifile2 ofile

merge	Merge datasets with different fields
mergetime	Merge datasets sorted by date and time
Syntax	<operator> ifiles ofile

splitcode	Split code numbers
splitname	Split variable names
splitlevel	Split levels
splitgrid	Split grids
splitzaxis	Split z-axes
splittabnum	Split parameter table numbers
Syntax	<operator> ifile oprefix

splithour	Split hours
splitlevel	Split days
splitmon	Split months
splitseas	Split seasons
splityear	Split years
Syntax	<operator> ifile oprefix

splitsel	Split time selection
Syntax	splitsel,nsets[,noffset[,nskip]] ifile oprefix

## Selection

selcode	Select variables by code number
delcode	Delete variables by code number
Syntax	<operator> .codes ifile ofile
selname	Select variables by name
delname	Delete variables by name
Syntax	<operator> .varnames ifile ofile
selstdname	Select variables by standard name
Syntax	selstdname, stdnames ifile ofile

sellevel	Select levels
Syntax	sellevel, levels ifile ofile
sellevelidx	Select levels by index
Syntax	sellevelidx, levelidx ifile ofile
selgrid	Select grids
Syntax	selgrid, grids ifile ofile
selzaxis	Select z-axes
Syntax	selzaxis, zaxes ifile ofile
selltype	Select GRIB level types
Syntax	selltype, types ifile ofile
seltabnum	Select parameter table numbers
Syntax	seltabnum, tabnums ifile ofile

seltimestep	Select time steps
Syntax	seltimestep, timesteps ifile ofile
seltime	Select times
Syntax	seltime, times ifile ofile
selhour	Select hours
Syntax	selhour, hours ifile ofile
selday	Select days
Syntax	selday, days ifile ofile
selmon	Select months
Syntax	selmon, months ifile ofile
selyear	Select years
Syntax	selyear, years ifile ofile
selseas	Select seasons
Syntax	selseas, seasons ifile ofile
seldate	Select dates
Syntax	seldate, date1[,date2] ifile ofile
selsmon	Select single month
Syntax	selsmon, month[,nts1[,nts2]] ifile ofile

sellonlatbox	Select a longitude/latitude box
Syntax	sellonlatbox, lon1,lon2,lat1,lat2 ifile ofile
selindexbox	Select an index box
Syntax	selindexbox, idx1,idx2,idy1,idy2 ifile ofile

## Conditional selection

ifthen	If then
ifnotthen	If not then
Syntax	<operator> ifile1 ifile2 ofile

ifthenelse	If then else
Syntax	ifthenelse ifile1 ifile2 ifile3 ofile

ifthenc	If then constant
ifnotthenc	If not then constant
Syntax	<operator> ,c ifile ofile

## Comparison

eq	Equal
ne	Not equal
le	Less equal
lt	Less than
ge	Greater equal
gt	Greater than
Syntax	<operator> ifile1 ifile2 ofile

eqc	Equal constant
nec	Not equal constant
lec	Less equal constant
ltc	Less than constant
gec	Greater equal constant
gtc	Greater than constant
Syntax	<operator> ,c ifile ofile

## Modification

setpartab	Set parameter table
Syntax	setpartab, table ifile ofile
setcode	Set code number
Syntax	setcode, code ifile ofile
setname	Set variable name
Syntax	setname, name ifile ofile
setlevel	Set level
Syntax	setlevel, level ifile ofile
setltype	Set GRIB level type
Syntax	setltype, ltype ifile ofile

setdate	Set date
Syntax	setdate, date ifile ofile
settime	Set time of the day
Syntax	settime, time ifile ofile
setday	Set day
Syntax	setday, day ifile ofile
setmon	Set month
Syntax	setmon, month ifile ofile
setyear	Set year
Syntax	setyear, year ifile ofile
setunits	Set time units
Syntax	setunits, units ifile ofile
settaxis	Set time axis
Syntax	settaxis, date, time[,inc] ifile ofile
setreftime	Set reference time
Syntax	setreftime, date, time[,units] ifile ofile
setcalendar	Set calendar
Syntax	setcalendar, calendar ifile ofile
shifttime	Shift time steps
Syntax	shifttime, sval ifile ofile

chcode	Change code number
Syntax	chcode, oldcode, newcode[,...] ifile ofile
chname	Change variable name
Syntax	chname, oldname, newname,... ifile ofile
chlevel	Change level
Syntax	chlevel, oldlev, newlev,... ifile ofile
chlevelc	Change level of one code
Syntax	chlevelc, code, oldlev, newlev ifile ofile
chlevelv	Change level of one variable
Syntax	chlevelv, name, oldlev, newlev ifile ofile

setgrid	Set grid
Syntax	setgrid, grid ifile ofile
setgridtype	Set grid type
Syntax	setgridtype, gridtype ifile ofile

setzaxis	Set z-axis
Syntax	setzaxis, zaxis ifile ofile

setgatt	Set global attribute
Syntax	setgatt, attname, attstring ifile ofile
setgatts	Set global attributes
Syntax	setgatts, attfile ifile ofile

invertlat	Invert latitudes
Syntax	invertlat ifile ofile

invertlev	Invert levels
Syntax	invertlev ifile ofile

maskregion	Mask regions
Syntax	maskregion, regions ifile ofile

masklonlatbox	Mask a longitude/latitude box
Syntax	masklonlatbox, lon1,lon2,lat1,lat2 ifile ofile
maskindexbox	Mask an index box
Syntax	maskindexbox, idx1,idx2,idy1,idy2 ifile ofile

setclonlatbox	Set a longitude/latitude box to constant
Syntax	setclonlatbox, c, lon1,lon2,lat1,lat2 ifile ofile
setcindexbox	Set an index box to constant
Syntax	setcindexbox, c, idx1,idx2,idy1,idy2 ifile ofile

enlarge	Enlarge fields
Syntax	enlarge, grid ifile ofile

setmissval	Set a new missing value
Syntax	setmissval, newmiss ifile ofile
setctomiss	Set constant to missing value
setmisstoc	Set missing value to constant
Syntax	<operator> ,c ifile ofile
setrtomiss	Set range to missing value
setvrange	Set valid range
Syntax	<operator> ,rmin,rmax ifile ofile

