

# CDO Reference Card

Climate Data Operators

Version 1.1.1

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## Syntax

cdo	[Options]	Operators
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## Options

-a	Convert from a relative to an absolute time axis
-b <nbits>	Set the number of bits for the output precision (32/64 for nc, nc2, srv, ext, ieg; 1 - 32 for grb)
-f <format>	Output file format (grb, nc, nc2, 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 <missval>	Set the default missing value (default: -9e+33)
-R	Convert GRIB data from reduced to regular grid
-r	Convert from an absolute to 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 infov map	Dataset information listed by code number Dataset information listed by variable name Dataset information and simple map
Syntax	<operator> ifiles
sinfo sinfov	Short dataset information listed by code number Short dataset information listed by variable name
Syntax	<operator> ifiles
diff diffv	Compare two datasets listed by code number Compare two datasets listed by variable name
Syntax	<operator> ifile1 ifile2
npar nlevel nyear nmon ndate ntime	Number of parameters Number of levels Number of years Number of months Number of dates Number of time steps
Syntax	<operator> ifile
showformat showcode showname showstdname showlevel showltype showyear showmon showdate showtime	Show file format Show code numbers Show variable names Show standard names Show levels Show GRIB level types Show years Show months Show dates Show time steps
Syntax	<operator> ifile
pardes griddes zaxisdes vct	Parameter description Grid description Zaxis description Vertical coordinate table
Syntax	<operator> ifile

### File operations

copy cat	Copy datasets Concatenate datasets
Syntax	<operator> ifiles ofile
replace	Replace variables
Syntax	replace ifile1 ifile2 ofile
merge mergetime	Merge datasets with different fields Merge datasets sorted by date and time
Syntax	<operator> ifiles ofile
splitcode spllname splitlevel splitgrid splitzaxis	Split code numbers Split variable names Split levels Split grids Split zaxis
Syntax	<operator> ifile oprefix
splthour spltday splitmon splitseas spltyear	Split hours Split days Split months Split seasons Split years
Syntax	<operator> ifile oprefix
splitsel	Split time selection
Syntax	splitsel,nsets[,noffset[,nskip]] ifile oprefix

### Selection

selcode delcode	Select variables by code number Delete variables by code number
Syntax	<operator> ,codes ifile ofile
selname delname	Select variables by name 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
selgrid	Select grids
Syntax	selgrid,grids ifile ofile
selgridname	Select grids by name
Syntax	selgridname,gridnames ifile ofile
selzaxis	Select zaxes
Syntax	selzaxis,zaxes ifile ofile
selzaxisname	Select zaxes by name
Syntax	selzaxisname,zaxisnames ifile ofile
selltype	Select GRIB level types
Syntax	selltype,ltypes ifile ofile
seltabnum	Select parameter table numbers
Syntax	seltabnum,tabnums ifile ofile
selimestep	Select time steps
Syntax	selimestep,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
seleas	Select seasons
Syntax	seleas,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 ifnotthen	If then If not then
Syntax	<operator> ifile1 ifile2 ofile
ifthenelse	If then else
Syntax	ifthenelse ifile1 ifile2 ifile3 ofile
ifthenc ifnotthenc	If then constant If not then constant
Syntax	<operator> ,c ifile ofile

### Comparison

eq ne le lt ge gt	Equal Not equal Less equal Less than Greater equal Greater than
Syntax	<operator> ifile1 ifile2 ofile
eqc nec lec ltc gec gtc	Equal constant Not equal constant Less equal constant Less then constant Greater equal constant Greater then 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,type ifile ofile
setdate	Set date
Syntax	setdate,date ifile ofile
settime	Set time
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 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,ovar,nvar,... 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,var,oldlev,newlev ifile ofile
setgrid	Set grid
Syntax	setgrid,grid ifile ofile
setgridtype	Set grid type
Syntax	setgridtype,gridtype ifile ofile
setzaxis	Set zaxis
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 invertlon invertlatdes invertlondes invertlatdata invertlondata	Invert latitude Invert longitude Invert latitude description Invert longitude description Invert latitude data Invert longitude data
Syntax	<operator> 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,miss ifile ofile
setctomiss setmisstoc	Set constant to missing value Set missing value to constant
Syntax	<operator> ,c ifile ofile
setrtomiss	Set range to missing value
Syntax	setrtomiss,rmin,rmax ifile ofile

### Arithmetic

expr	Evaluate expressions
Syntax	expr,instr ifile ofile
exprf	Evaluate expressions from script file
Syntax	exprf,filename ifile ofile

abs int nint sqr sqrt exp ln log10 sin cos tan asin acos atan	Absolute value Integer value Nearest integer value Square Square root Exponential Natural logarithm Base 10 logarithm Sine Cosine Tangent Arc sine Arc cosine Arc tangent
Syntax	<operator> ifile ofile

<b>addc</b>	Add a constant
<b>subc</b>	Subtract a constant
<b>mulc</b>	Multiply with a constant
<b>divc</b>	Divide by a constant
Syntax	<i>&lt;operator&gt;</i> , <i>c</i> <i>ifile</i> <i>ofile</i>
<b>add</b>	Add two fields
<b>sub</b>	Subtract two fields
<b>mul</b>	Multiply two fields
<b>div</b>	Divide two fields
<b>min</b>	Minimum of two fields
<b>max</b>	Maximum of two fields
<b>atan2</b>	Arc tangent of two fields
Syntax	<i>&lt;operator&gt;</i> <i>ifile1</i> <i>ifile2</i> <i>ofile</i>
<b>monadd</b>	Add monthly time series
<b>monsub</b>	Subtract monthly time series
<b>monmul</b>	Multiply monthly time series
<b>monddiv</b>	Divide monthly time series
Syntax	<i>&lt;operator&gt;</i> <i>ifile1</i> <i>ifile2</i> <i>ofile</i>
<b>ymonadd</b>	Add multi-year monthly time series
<b>ymonsub</b>	Subtract multi-year monthly time series
<b>ymonmul</b>	Multiply multi-year monthly time series
<b>ymonddiv</b>	Divide multi-year monthly time series
Syntax	<i>&lt;operator&gt;</i> <i>ifile1</i> <i>ifile2</i> <i>ofile</i>
<b>muldpm</b>	Multiply with days per month
<b>divdpm</b>	Divide by days per month
<b>muldpy</b>	Multiply with days per year
<b>divdpy</b>	Divide by days per year
Syntax	<i>&lt;operator&gt;</i> <i>ifile</i> <i>ofile</i>

#### Statistical values

Available statistical functions	<i>&lt;STAT&gt;</i>
minimum	<b>min</b>
maximum	<b>max</b>
sum	<b>sum</b>
mean	<b>mean</b>
average	<b>avg</b>
variance	<b>var</b>
standard deviation	<b>std</b>

<b>ens</b> <i>&lt;STAT&gt;</i>	Statistical values over an ensemble
Syntax	<i>&lt;operator&gt;</i> <i>ifiles</i> <i>ofile</i>
<b>enspctl</b>	Ensemble percentiles
Syntax	<b>enspctl</b> , <i>p</i> <i>ifiles</i> <i>ofile</i>
<b>fld</b> <i>&lt;STAT&gt;</i>	Statistical values over a field
Syntax	<i>&lt;operator&gt;</i> <i>ifile</i> <i>ofile</i>
<b>fldpctl</b>	Field percentiles
Syntax	<b>fldpctl</b> , <i>p</i> <i>ifile</i> <i>ofile</i>
<b>zon</b> <i>&lt;STAT&gt;</i>	Zonal statistical values
Syntax	<i>&lt;operator&gt;</i> <i>ifile</i> <i>ofile</i>
<b>zonpctl</b>	Zonal percentiles
Syntax	<b>zonpctl</b> , <i>p</i> <i>ifile</i> <i>ofile</i>
<b>mer</b> <i>&lt;STAT&gt;</i>	Meridional statistical values
Syntax	<i>&lt;operator&gt;</i> <i>ifile</i> <i>ofile</i>
<b>merpctl</b>	Meridional percentiles
Syntax	<b>merpctl</b> , <i>p</i> <i>ifile</i> <i>ofile</i>
<b>vert</b> <i>&lt;STAT&gt;</i>	Vertical statistical values
Syntax	<i>&lt;operator&gt;</i> <i>ifile</i> <i>ofile</i>
<b>timsel</b> <i>&lt;STAT&gt;</i>	Time range statistical values
Syntax	<i>&lt;operator&gt;</i> , <i>nsets</i> , <i>[noffset</i> , <i>nskip]</i> <i>ifile</i> <i>ofile</i>
<b>timselfpctl</b>	Time range percentiles
Syntax	<b>timselfpctl</b> , <i>p</i> , <i>nsets</i> , <i>[noffset</i> , <i>nskip]</i> <i>ifile1</i> <i>ifile2</i> <i>ifile3</i> <i>ofile</i>
<b>run</b> <i>&lt;STAT&gt;</i>	Running statistical values
Syntax	<i>&lt;operator&gt;</i> , <i>nts</i> <i>ifile</i> <i>ofile</i>
<b>runpctl</b>	Running percentiles
Syntax	<b>runpctl</b> , <i>p</i> , <i>nts</i> <i>ifile1</i> <i>ofile</i>
<b>tim</b> <i>&lt;STAT&gt;</i>	Statistical values over all time steps
Syntax	<i>&lt;operator&gt;</i> <i>ifile</i> <i>ofile</i>

<b>timpctl</b>	Time percentiles
Syntax	<b>timpctl</b> , <i>p</i> <i>ifile1</i> <i>ifile2</i> <i>ifile3</i> <i>ofile</i>
<b>hour</b> <i>&lt;STAT&gt;</i>	Hourly statistical values
Syntax	<i>&lt;operator&gt;</i> <i>ifile</i> <i>ofile</i>
<b>hourpctl</b>	Hourly percentiles
Syntax	<b>hourpctl</b> , <i>p</i> <i>ifile1</i> <i>ifile2</i> <i>ifile3</i> <i>ofile</i>
<b>day</b> <i>&lt;STAT&gt;</i>	Daily statistical values
Syntax	<i>&lt;operator&gt;</i> <i>ifile</i> <i>ofile</i>
<b>daypctl</b>	Daily percentiles
Syntax	<b>daypctl</b> , <i>p</i> <i>ifile1</i> <i>ifile2</i> <i>ifile3</i> <i>ofile</i>
<b>mon</b> <i>&lt;STAT&gt;</i>	Monthly statistical values
Syntax	<i>&lt;operator&gt;</i> <i>ifile</i> <i>ofile</i>
<b>monpctl</b>	Monthly percentiles
Syntax	<b>monpctl</b> , <i>p</i> <i>ifile1</i> <i>ifile2</i> <i>ifile3</i> <i>ofile</i>
<b>year</b> <i>&lt;STAT&gt;</i>	Yearly statistical values
Syntax	<i>&lt;operator&gt;</i> <i>ifile</i> <i>ofile</i>
<b>yearpctl</b>	Yearly percentiles
Syntax	<b>yearpctl</b> , <i>p</i> <i>ifile1</i> <i>ifile2</i> <i>ifile3</i> <i>ofile</i>
<b>seas</b> <i>&lt;STAT&gt;</i>	Seasonal statistical values
Syntax	<i>&lt;operator&gt;</i> <i>ifile</i> <i>ofile</i>

<b>seaspctl</b>	Seasonal percentiles
Syntax	<b>seaspctl</b> , <i>p</i> <i>ifile1</i> <i>ifile2</i> <i>ifile3</i> <i>ofile</i>
<b>yhour</b> <i>&lt;STAT&gt;</i>	Multi-year hourly statistical values
Syntax	<i>&lt;operator&gt;</i> <i>ifile</i> <i>ofile</i>
<b>yday</b> <i>&lt;STAT&gt;</i>	Multi-year daily statistical values
Syntax	<i>&lt;operator&gt;</i> <i>ifile</i> <i>ofile</i>
<b>ydaypctl</b>	Multi-year daily percentiles
Syntax	<b>ydaypctl</b> , <i>p</i> <i>ifile1</i> <i>ifile2</i> <i>ifile3</i> <i>ofile</i>
<b>ymon</b> <i>&lt;STAT&gt;</i>	Multi-year monthly statistical values
Syntax	<i>&lt;operator&gt;</i> <i>ifile</i> <i>ofile</i>
<b>ymonpctl</b>	Multi-year monthly percentiles
Syntax	<b>ymonpctl</b> , <i>p</i> <i>ifile1</i> <i>ifile2</i> <i>ifile3</i> <i>ofile</i>
<b>yseas</b> <i>&lt;STAT&gt;</i>	Multi-year seasonal statistical values
Syntax	<i>&lt;operator&gt;</i> <i>ifile</i> <i>ofile</i>
<b>yseaspctl</b>	Multi-year seasonal percentiles
Syntax	<b>yseaspctl</b> , <i>p</i> <i>ifile1</i> <i>ifile2</i> <i>ifile3</i> <i>ofile</i>
<b>ydrun</b> <i>&lt;STAT&gt;</i>	Multi-year daily running statistical values
Syntax	<i>&lt;operator&gt;</i> , <i>nts</i> <i>ifile</i> <i>ofile</i>
<b>ydrunpctl</b>	Multi-year daily running percentiles
Syntax	<b>ydrunpctl</b> , <i>p</i> , <i>nts</i> <i>ifile1</i> <i>ifile2</i> <i>ifile3</i> <i>ofile</i>

#### Regression

<b>regres</b>	Regression
Syntax	<b>regres</b> <i>ifile</i> <i>ofile</i>
<b>detrend</b>	Detrend
Syntax	<b>detrend</b> <i>ifile</i> <i>ofile</i>
<b>trend</b>	Trend
Syntax	<b>trend</b> <i>ifile</i> <i>ofile1</i> <i>ofile2</i>
<b>subtrend</b>	Subtrend trend
Syntax	<b>subtrend</b> <i>ifile1</i> <i>ifile2</i> <i>ifile3</i> <i>ofile</i>

#### Interpolation

<b>remapbil</b>	Bilinear interpolation
<b>remapbic</b>	Bicubic interpolation
<b>remapcon</b>	Conservative remapping
<b>remapdis</b>	Distance-weighted averaging
Syntax	<i>&lt;operator&gt;</i> , <i>grid</i> <i>ifile</i> <i>ofile</i>

<b>genbil</b>	Generate bilinear interpolation weights
<b>genbic</b>	Generate bicubic interpolation weights
<b>gencon</b>	Generate conservative interpolation weights
<b>gendis</b>	Generate distance-weighted averaging weights
Syntax	<i>&lt;operator&gt;</i> , <i>grid</i> <i>ifile</i> <i>ofile</i>
<b>remap</b>	SCRIP grid remapping
Syntax	<b>remap</b> , <i>grid</i> , <i>weights</i> <i>ifile</i> <i>ofile</i>
<b>interpolate</b>	PINGO grid interpolation
<b>intgridbil</b>	Bilinear grid interpolation
Syntax	<i>&lt;operator&gt;</i> , <i>grid</i> <i>ifile</i> <i>ofile</i>
<b>remapeta</b>	Remap vertical hybrid level
Syntax	<b>remapeta</b> , <i>vct</i> , <i>[oro]</i> <i>ifile</i> <i>ofile</i>
<b>ml2pl</b>	Model to pressure level interpolation
Syntax	<b>ml2pl</b> , <i>p</i> , <i>plevels</i> <i>ifile</i> <i>ofile</i>
<b>ml2hl</b>	Model to height level interpolation
Syntax	<b>ml2hl</b> , <i>h</i> , <i>levels</i> <i>ifile</i> <i>ofile</i>
<b>inttime</b>	Time interpolation
Syntax	<b>inttime</b> , <i>date</i> , <i>time</i> , <i>[inc]</i> <i>ifile</i> <i>ofile</i>
<b>intntime</b>	Time interpolation
Syntax	<b>intntime</b> , <i>n</i> <i>ifile</i> <i>ofile</i>
<b>intyear</b>	Year interpolation
Syntax	<b>intyear</b> , <i>years</i> <i>ifile1</i> <i>ifile2</i> <i>oprefix</i>

#### Transformation

<b>sp2gp</b>	Spectral to gridpoint
<b>sp2spl</b>	Spectral to gridpoint (linear)
<b>gp2sp</b>	Gridpoint to spectral
<b>gp2spl</b>	Gridpoint to spectral (linear)
Syntax	<i>&lt;operator&gt;</i> <i>ifile</i> <i>ofile</i>
<b>sp2sp</b>	Spectral to spectral
Syntax	<b>sp2sp</b> , <i>trunc</i> <i>ifile</i> <i>ofile</i>
<b>spcut</b>	Cut spectral wave number
Syntax	<b>spcut</b> , <i>wnums</i> <i>ifile</i> <i>ofile</i>
<b>dv2uv</b>	Divergence and vorticity to U and V wind
<b>dv2uvl</b>	Divergence and vorticity to U and V wind (linear)
<b>uv2dv</b>	U and V wind to divergence and vorticity
<b>uv2dvl</b>	U and V wind to divergence and vorticity (linear)
Syntax	<i>&lt;operator&gt;</i> <i>ifile</i> <i>ofile</i>

#### Formatted I/O

<b>input</b>	ASCII input
Syntax	<b>input</b> , <i>grid</i> <i>ofile</i>
<b>inputsrv</b>	SERVICE input
<b>inputext</b>	EXTRA input
Syntax	<i>&lt;operator&gt;</i> <i>ofile</i>
<b>output</b>	ASCII output
Syntax	<b>output</b> <i>ifiles</i>
<b>outputf</b>	Formatted output
Syntax	<b>outputf</b> , <i>format</i> , <i>nelem</i> <i>ifiles</i>
<b>outputint</b>	Integer output
<b>outputsrv</b>	SERVICE output
<b>outputext</b>	EXTRA output
Syntax	<i>&lt;operator&gt;</i> <i>ifiles</i>

#### Miscellaneous

<b>gridarea</b>	Grid cell area
<b>gridweights</b>	Grid cell weights
Syntax	<i>&lt;operator&gt;</i> <i>ifile</i> <i>ofile</i>
<b>gradsdes1</b>	GrADS data descriptor file (version 1 GRIB map)
<b>gradsdes2</b>	GrADS data descriptor file (version 2 GRIB map)
Syntax	<i>&lt;operator&gt;</i> <i>ifile</i> <i>ofile</i>
<b>smooth9</b>	9 point smoothing
Syntax	<b>smooth9</b> <i>ifile</i> <i>ofile</i>

<b>setrtoc</b>	Set range to constant
Syntax	<b>setrtoc</b> , <i>rmin</i> , <i>rmax</i> , <i>c</i> <i>ifile</i> <i>ofile</i>
<b>setrtoc2</b>	Set range to constant others to constant2
Syntax	<b>setrtoc2</b> , <i>rmin</i> , <i>rmax</i> , <i>c</i> , <i>c2</i> <i>ifile</i> <i>ofile</i>
<b>timsort</b>	Sort over the time
Syntax	<b>timsort</b> <i>ifile</i> <i>ofile</i>
<b>const</b>	Create a constant field
Syntax	<b>const</b> , <i>const</i> , <i>grid</i> <i>ofile</i>
<b>random</b>	Create a field with random values
Syntax	<b>random</b> , <i>grid</i> <i>ofile</i>
<b>rotuvb</b>	Backward rotation
Syntax	<b>rotuvb</b> , <i>u</i> , <i>v</i> ,... <i>ifile</i> <i>ofile</i>

<b>mastrfu</b>	Mass stream function
Syntax	<b>mastrfu</b> <i>ifile</i> <i>ofile</i>
<b>histcount</b>	Histogram count
<b>histsum</b>	Histogram sum
<b>histmean</b>	Histogram mean
<b>histfreq</b>	Histogram frequency
Syntax	<i>&lt;operator&gt;</i> , <i>bounds</i> <i>ifile</i> <i>ofile</i>
<b>wct</b>	Windchill temperature (C)
Syntax	<b>wct</b> <i>ifile1</i> <i>ifile2</i> <i>ofile</i>
<b>fdns</b>	Frost days where no snow index per time period
Syntax	<b>fdns</b> <i>ifile1</i> <i>ifile2</i> <i>ofile</i>
<b>strwin</b>	Strong wind days index per time period
Syntax	<b>strwin</b> , <i>[v]</i> <i>ifile</i> <i>ofile</i>
<b>strbre</b>	Strong breeze days index per time period
Syntax	<b>strbre</b> <i>ifile</i> <i>ofile</i>
<b>strgal</b>	Strong gale days index per time period
Syntax	<b>strgal</b> <i>ifile</i> <i>ofile</i>
<b>hurr</b>	Hurricane days index per time period
Syntax	<b>hurr</b> <i>ifile</i> <i>ofile</i>

#### Climate indices

<b>eca_cdd</b>	Consecutive dry days index per time period
Syntax	<b>eca_cdd</b> <i>ifile</i> <i>ofile</i>
<b>eca_cfd</b>	Consecutive frost days index per time period
Syntax	<b>eca_cfd</b> <i>ifile</i> <i>ofile</i>
<b>eca_csu</b>	Consecutive summer days index per time period
Syntax	<b>eca_csu</b> , <i>[T]</i> <i>ifile</i> <i>ofile</i>
<b>eca_cwd</b>	Consecutive wet days index per time period
Syntax	<b>eca_cwd</b> <i>ifile</i> <i>ofile</i>
<b>eca_cwdi</b>	Cold wave duration index wrt mean of reference period
Syntax	<b>eca_cwdi</b> , <i>[nday</i> , <i>[T]]</i> <i>ifile1</i> <i>ifile2</i> <i>ofile</i>
<b>eca_cwfi</b>	Cold-spell days index wrt 10th percentile of reference period
Syntax	<b>eca_cwfi</b> , <i>[nday]</i> <i>ifile1</i> <i>ifile2</i> <i>ofile</i>
<b>eca_etr</b>	Intra-period extreme temperature range
Syntax	<b>eca_etr</b> <i>ifile1</i> <i>ifile2</i> <i>ofile</i>
<b>eca_fd</b>	Frost days index per time period
Syntax	<b>eca_fd</b> <i>ifile</i> <i>ofile</i>
<b>eca_gsl</b>	Growing season length index
Syntax	<b>eca_gsl</b> , <i>[nday</i> , <i>[T</i> , <i>[fland]]]</i> <i>ifile1</i> <i>ifile2</i> <i>ofile</i>
<b>eca_hd</b>	Heating degree days per time period
Syntax	<b>eca_hd</b> , <i>[T1</i> , <i>[T2]]</i> <i>ifile</i> <i>ofile</i>
<b>eca_hwdi</b>	Heat wave duration index wrt mean of reference period
Syntax	<b>eca_hwdi</b> , <i>[nday</i> , <i>[T]]</i> <i>ifile1</i> <i>ifile2</i> <i>ofile</i>
<b>eca_hwfi</b>	Warm spell days index wrt 90th percentile of reference period
Syntax	<b>eca_hwfi</b> , <i>[nday]</i> <i>ifile1</i> <i>ifile2</i> <i>ofile</i>
<b>eca_id</b>	Ice days index per time period
Syntax	<b>eca_id</b> <i>ifile</i> <i>ofile</i>
<b>eca_r10mm</b>	Heavy precipitation days index per time period
Syntax	<b>eca_r10mm</b> <i>ifile</i> <i>ofile</i>

<b>eca_r20mm</b> Syntax	Very heavy precipitation days index per time period <b>eca_r20mm ifile ofile</b>
<b>eca_r75p</b> Syntax	Moderate wet days wrt 75th percentile of reference period <b>eca_r75p ifile1 ifile2 ofile</b>
<b>eca_r75ptot</b> Syntax	Precipitation percent due to R75p days <b>eca_r75ptot ifile1 ifile2 ofile</b>
<b>eca_r90p</b> Syntax	Wet days wrt 90th percentile of reference period <b>eca_r90p ifile1 ifile2 ofile</b>
<b>eca_r90ptot</b> Syntax	Precipitation percent due to R90p days <b>eca_r90ptot ifile1 ifile2 ofile</b>
<b>eca_r95p</b> Syntax	Very wet days wrt 95th percentile of reference period <b>eca_r95p ifile1 ifile2 ofile</b>
<b>eca_r95ptot</b> Syntax	Precipitation percent due to R95p days <b>eca_r95ptot ifile1 ifile2 ofile</b>
<b>eca_r99p</b> Syntax	Extremely wet days wrt 99th percentile of reference period <b>eca_r99p ifile1 ifile2 ofile</b>
<b>eca_r99ptot</b> Syntax	Precipitation percent due to R99p days <b>eca_r99ptot ifile1 ifile2 ofile</b>
<b>eca_rr1</b> Syntax	Wet days index per time period <b>eca_rr1 ifile ofile</b>
<b>eca_rx1day</b> Syntax	Highest one day precipitation amount per time period <b>eca_rx1day[,mode] ifile ofile</b>
<b>eca_rx5day</b> Syntax	Highest five-day precipitation amount per time period <b>eca_rx5day[,x] ifile ofile</b>
<b>eca_sdii</b> Syntax	Simple daily intensity index per time period <b>eca_sdii ifile ofile</b>
<b>eca_su</b> Syntax	Summer days index per time period <b>eca_su[,T] ifile ofile</b>
<b>eca_tg10p</b> Syntax	Cold days percent wrt 10th percentile of reference period <b>eca_tg10p ifile1 ifile2 ofile</b>
<b>eca_tg90p</b> Syntax	Warm days percent wrt 90th percentile of reference period <b>eca_tg90p ifile1 ifile2 ofile</b>
<b>eca_tn10p</b> Syntax	Cold nights percent wrt 10th percentile of reference period <b>eca_tn10p ifile1 ifile2 ofile</b>
<b>eca_tn90p</b> Syntax	Warm nights percent wrt 90th percentile of reference period <b>eca_tn90p ifile1 ifile2 ofile</b>
<b>eca_tr</b> Syntax	Tropical nights index per time period <b>eca_tr[,T] ifile ofile</b>
<b>eca_tx10p</b> Syntax	Very cold days percent wrt 10th percentile of reference period <b>eca_tx10p ifile1 ifile2 ofile</b>
<b>eca_tx90p</b> Syntax	Very warm days percent wrt 90th percentile of reference period <b>eca_tx90p ifile1 ifile2 ofile</b>