CDO Reference Card

Climate Data Operators
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https://code.zmaw.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 nc,nc2,nc4,nc4c; F32/F64 for grb2,srv,ext,ieg; 1-24 for grb,grb2) Add L or B for Little or Big endian byteorder
-f <*format*>	Outputformat: grb,grb2,nc,nc2,nc4,nc4c,srv,ext,ieg
-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*> `ifiles`	

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

diff	Compare two datasets listed by parameter id
diffn	Compare two datasets listed by parameter name
<*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 timesteps
<*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
<*operator*> `ifile`	

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

File operations

copy	Copy datasets
cat	Concatenate datasets
<*operator*> `ifiles ofile`	

replace	Replace variables
replace `ifile1 ifile2 ofile`	

duplicate	Duplicates a dataset
duplicate[,*ndup*] `ifile ofile`	

mergegrid	Merge grid
mergegrid `ifile1 ifile2 ofile`	

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

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*] `ifile obase`	

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

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

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

collgrid	Collect horizontal grid
collgrid[,*names*] `ifiles ofile`	

Selection

select	Select fields
delete	Delete fields
<*operator*>,*params* `ifiles ofile`	

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

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

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

Conditional selection

ifthen	If then
ifnotthen	If not then
<*operator*> `ifile1 ifile2 ofile`	

ifthenelse	If then else
ifthenelse `ifile1 ifile2 ifile3 ofile`	

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

Comparison

eq	Equal
ne	Not equal
le	Less equal
lt	Less than
ge	Greater equal
gt	Greater than
<*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
<*operator*>,*c* `ifile ofile`	

Modification

setpartabp	Set parameter table
setpartabn	Set parameter table
<*operator*>,*table*[,*convert*] `ifile ofile`	

setpartab	Set parameter table
setpartab,*table* `ifile ofile`	
setcode	Set code number
setcode,*code* `ifile ofile`	
setparam	Set parameter identifier
setparam,*param* `ifile ofile`	
setname	Set variable name
setname,*name* `ifile ofile`	
setunit	Set variable unit
setunit,*unit* `ifile ofile`	
setlevel	Set level
setlevel,*level* `ifile ofile`	
setltype	Set GRIB level type
setltype,*ltype* `ifile ofile`	

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

chcode	Change code number
chcode,*oldcode*,*newcode*[,...] `ifile ofile`	
chparam	Change parameter identifier
chparam,*oldparam*,*newparam*,... `ifile ofile`	
chname	Change variable name
chname,*oldname*,*newname*,... `ifile ofile`	
chunit	Change variable unit
chunit,*oldunit*,*newunit*,... `ifile ofile`	
chlevel	Change level
chlevel,*oldlev*,*newlev*,... `ifile ofile`	
chlevelc	Change level of one code
chlevelc,*code*,*oldlev*,*newlev* `ifile ofile`	
chlevelv	Change level of one variable
chlevelv,*name*,*oldlev*,*newlev* `ifile ofile`	

setgrid	Set grid
setgrid,*grid* `ifile ofile`	
setgridtype	Set grid type
setgridtype,*gridtype* `ifile ofile`	
setgridarea	Set grid cell area
setgridarea,*gridarea* `ifile ofile`	

setzaxis	Set z-axis
setzaxis,*zaxis* `ifile ofile`	
genlevelbounds	Generate level bounds
genlevelbounds[,*zbot*[,*ztop*]] `ifile ofile`	

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

invertlat	Invert latitudes
invertlat ifile ofile	

invertlev	Invert levels
invertlev ifile ofile	

maskregion	Mask regions
maskregion,*regions* ifile ofile	

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

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

enlarge	Enlarge fields
enlarge,*grid* ifile ofile	

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

Arithmetic

expr	Evaluate expressions
expr,*instr* ifile ofile	
exprf	Evaluate expressions script
exprf,*filename* ifile ofile	
aexpr	Evaluate expressions and append results
aexpr,*instr* ifile ofile	
aexprf	Evaluate expression script and append results
aexprf,*filename* ifile ofile	

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
reci	Reciprocal value
<*operator*> ifile ofile	

addc	Add a constant
subc	Subtract a constant
mulc	Multiply with a constant
divc	Divide by a constant
<*operator*>,*c* ifile ofile	

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*> ifile1 ifile2 ofile	

monadd	Add monthly time series
monsub	Subtract monthly time series
monmul	Multiply monthly time series
mondiv	Divide monthly time series
<*operator*> ifile1 ifile2 ofile	

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*> ifile1 ifile2 ofile	

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*> ifile1 ifile2 ofile	

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*> ifile1 ifile2 ofile	

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*> ifile1 ifile2 ofile	

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*> ifile ofile	

Statistical values

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

consects	Consecutive Timesteps
<*operator*> ifile ofile	

ens<*stat*>	Statistical values over an ensemble
<*operator*> ifiles ofile	
enspctl	Ensemble percentiles
enspctl,*p* ifiles ofile	

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

enscrps	Ensemble CRPS and decomposition
enscrps rfile ifiles ofilebase	
ensbrs	Ensemble Brier score
ensbrs,*x* rfile ifiles ofilebase	

fld<*stat*>	Statistical values over a field
<*operator*> ifile ofile	
fldpctl	Field percentiles
fldpctl,*p* ifile ofile	

zon<*stat*>	Zonal statistical values
<*operator*> ifile ofile	
zonpctl	Zonal percentiles
zonpctl,*p* ifile ofile	

mer<*stat*>	Meridional statistical values
<*operator*> ifile ofile	
merpctl	Meridional percentiles
merpctl,*p* ifile ofile	

gridbox<*stat*>	Statistical values over grid boxes
<*operator*>,*nx*,*ny* ifile ofile	

vert<*stat*>	Vertical statistical values
<*operator*> ifile ofile	

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

timselpctl	Time range percentiles
timselpctl,*p*,*nsets*[,*noffset*[,*nskip*]] ifile1 ifile2 ifile3 ofile	

run<*stat*>	Running statistical values
<*operator*>,*nts* ifile ofile	

runpctl	Running percentiles
runpctl,*p*,*nts* ifile ofile	

tim<*stat*>	Statistical values over all timesteps
<*operator*> ifile ofile	

timpctl	Time percentiles
timpctl,*p* ifile1 ifile2 ifile3 ofile	

hour<*stat*>	Hourly statistical values
<*operator*> ifile ofile	

hourpctl	Hourly percentiles
hourpctl,*p* ifile1 ifile2 ifile3 ofile	

day<*stat*>	Daily statistical values
<*operator*> ifile ofile	

daypctl	Daily percentiles
daypctl,*p* ifile1 ifile2 ifile3 ofile	

mon<*stat*>	Monthly statistical values
<*operator*> ifile ofile	

monpctl	Monthly percentiles
monpctl,*p* ifile1 ifile2 ifile3 ofile	

yearmonmean ifile ofile

year<*stat*>	Yearly statistical values
<*operator*> ifile ofile	

yearpctl	Yearly percentiles
yearpctl,*p* ifile1 ifile2 ifile3 ofile	

seas<*stat*>	Seasonal statistical values
<*operator*> ifile ofile	

seaspctl	Seasonal percentiles
seaspctl,*p* ifile1 ifile2 ifile3 ofile	

yhour<*stat*>	Multi-year hourly statistical values
<*operator*> ifile ofile	

yday<*stat*>	Multi-year daily statistical values
<*operator*> ifile ofile	

ydaypctl	Multi-year daily percentiles
ydaypctl,*p* ifile1 ifile2 ifile3 ofile	

ymon<*stat*>	Multi-year monthly statistical values
<*operator*> ifile ofile	

ymonpctl	Multi-year monthly percentiles
ymonpctl,*p* ifile1 ifile2 ifile3 ofile	

yseas<*stat*>	Multi-year seasonal statistical values
<*operator*> ifile ofile	

yseaspctl	Multi-year seasonal percentiles
yseaspctl,*p* ifile1 ifile2 ifile3 ofile	

ydrun<*stat*>	Multi-year daily running statistical values
<*operator*>,*nts* ifile ofile	

ydrunpctl	Multi-year daily running percentiles
ydrunpctl,*p*,*nts* ifile1 ifile2 ifile3 ofile	

Correlation and co.

fldcor	Correlation in grid space
fldcor ifile1 ifile2 ofile	

timcor	Correlation over time
timcor ifile1 ifile2 ofile	

fldcovar	Covariance in grid space
fldcovar ifile1 ifile2 ofile	

timcovar	Covariance over time
timcovar ifile1 ifile2 ofile	

Regression

regres	Regression
regres ifile ofile	

detrend	Detrend
detrend ifile ofile	

trend	Trend
trend ifile ofile1 ofile2	

subtrend	Subtract trend
subtrend ifile1 ifile2 ifile3 ofile	

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* ifile ofile1 ofile2	

eofcoeff	Calculate principal coefficients of EOFs
eofcoeff ifile1 ifile2 obase	

Interpolation

remapbil	Bilinear interpolation
remapbic	Bicubic interpolation
remapdis	Distance-weighted average remapping
remapnn	Nearest neighbor remapping
remapcon	First order conservative remapping
remapcon2	Second order conservative remapping
remaplaf	Largest area fraction remapping
<*operator*>,*grid* ifile ofile	

genbil	Generate bilinear interpolation weights
genbic	Generate bicubic interpolation weights
gendis	Generate distance-weighted average remap weights
gennn	Generate nearest neighbor remap weights
gencon	Generate 1st order conservative remap weights
gencon2	Generate 2nd order conservative remap weights
genlaf	Generate largest area fraction remap weights
<*operator*>,*grid* ifile ofile	

remap	SCRIP grid remapping
remap,*grid*,*weights* ifile ofile	

remapeta	Remap vertical hybrid level
remapeta,*vct*[,*oro*] ifile ofile	

ml2pl	Model to pressure level interpolation
ml2pl,*plevels* ifile ofile	
ml2hl	Model to height level interpolation
ml2hl,*hlevels* ifile ofile	

intlevel	Linear level interpolation
intlevel,*levels* ifile ofile	

intlevel3d	Linear level interpolation onto a 3d vertical coordina
intlevelx3d	like intlevel3d but with extrapolation
<*operator*>,*icoordinate* ifile1 ifile2 ofile	

inttime	Interpolation between timesteps
inttime,*date*,*time*[,*inc*] ifile ofile	
intntime	Interpolation between timesteps
intntime,*n* ifile ofile	

intyear	Interpolation between two years
intyear,*years* ifile1 ifile2 obase	

Transformation

sp2gp	Spectral to gridpoint
sp2gpl	Spectral to gridpoint (linear)
gp2sp	Gridpoint to spectral
gp2spl	Gridpoint to spectral (linear)
<*operator*> ifile ofile	
sp2sp	Spectral to spectral
sp2sp,*trunc* ifile ofile	

dv2uv	Divergence and vorticity to U and V wind
dv2uvl	Divergence and vorticity to U and V wind (linear)
uv2dv	U and V wind to divergence and vorticity
uv2dvl	U and V wind to divergence and vorticity (linear)
dv2ps	D and V to velocity potential and stream function
<*operator*> ifile ofile	

Import/Export

import_binary	Import binary data sets
import_binary ifile ofile	

import_cmsaf	Import CM-SAF HDF5 files
import_cmsaf ifile ofile	

import_amsr	Import AMSR binary files
import_amsr ifile ofile	

input	ASCII input
input,*grid* ofile	
inputsrv	SERVICE ASCII input
inputext	EXTRA ASCII input
<*operator*> ofile	

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

outputtab	Table output
outputtab,*params* ifiles ofile	

Miscellaneous

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

after	ECHAM standard post processor
after ifiles ofile	

bandpass	Bandpass filtering
bandpass,*fmin*,*fmax* ifile ofile	
lowpass	Lowpass filtering
lowpass,*fmax* ifile ofile	
highpass	Highpass filtering
highpass,*fmin* ifile ofile	

gridarea	Grid cell area
gridweights	Grid cell weights
<*operator*> ifile ofile	

smooth9	9 point smoothing
smooth9 ifile ofile	

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

timsort	Sort over the time
timsort ifile ofile	

const	Create a constant field
const,*const*,*grid* ofile	
random	Create a field with random numbers
random,*grid*[,*seed*] ofile	
stdatm	Create values for pressure and temperature for hydr
stdatm,*levels* ofile	

rotuvb	Backward rotation
rotuvb,*u*,*v*,... ifile ofile	

mastrfu	Mass stream function
mastrfu ifile ofile	

sealevelpressur	Sea level pressure
sealevelpressure ifile ofile	

adisit	Potential temperature to in-situ temperature
adisit[,*pressure*] ifile ofile	
adipot	In-situ temperature to potential temperature
adipot ifile ofile	

rhopot	Calculates potential density
rhopot[,*pressure*] ifile ofile	

histcount	Histogram count
histsum	Histogram sum
histmean	Histogram mean
histfreq	Histogram frequency
<*operator*>,*bounds* ifile ofile	

sethalo	Set the left and right bounds of a field
sethalo,*lhalo*,*rhalo* ifile ofile	

wct	Windchill temperature
wct ifile1 ifile2 ofile	

fdns	Frost days where no snow index per time period
fdns ifile1 ifile2 ofile	

strwin	Strong wind days index per time period
strwin[,*v*] ifile ofile	

strbre	Strong breeze days index per time period
strbre ifile ofile	

strgal	Strong gale days index per time period
strgal ifile ofile	

hurr	Hurricane days index per time period
hurr ifile ofile	

fillmiss	Fill missing values
fillmiss ifile ofile	
fillmiss2	Fill missing values
fillmiss2[,*maxiter*] ifile ofile	

Climate indices

eca_cdd	Consecutive dry days index per time period
eca_cdd[,*R*] ifile ofile	

eca_cfd	Consecutive frost days index per time period
eca_cfd ifile ofile	

eca_csu	Consecutive summer days index per time period
eca_csu[,*T*] ifile ofile	

eca_cwd	Consecutive wet days index per time period
eca_cwd[,*R*] ifile ofile	

eca_cwdi	Cold wave duration index wrt mean of reference per
eca_cwdi[,*nday*[,*T*]] ifile1 ifile2 ofile	

eca_cwfi	Cold-spell days index wrt 10th percentile of referenc
eca_cwfi[,*nday*] ifile1 ifile2 ofile	

eca_etr	Intra-period extreme temperature range
eca_etr ifile1 ifile2 ofile	

eca_fd	Frost days index per time period
eca_fd ifile ofile	

eca_gsl	Growing season length index
eca_gsl[,*nday*[,*T*[,*fland*]]] ifile1 ifile2 ofile	

eca_hd	Heating degree days per time period
eca_hd[,*T1*[,*T2*]] ifile ofile	

eca_hwdi	Heat wave duration index wrt mean of reference period
eca_hwdi[,*nday*[,*T*]] ifile1 ifile2 ofile	

eca_hwfi	Warm spell days index wrt 90th percentile of reference period
eca_hwfi[,*nday*] ifile1 ifile2 ofile	

eca_id	Ice days index per time period
eca_id ifile ofile	

eca_r75p	Moderate wet days wrt 75th percentile of reference period
eca_r75p ifile1 ifile2 ofile	

eca_r75ptot	Precipitation percent due to R75p days
eca_r75ptot ifile1 ifile2 ofile	

eca_r90p	Wet days wrt 90th percentile of reference period
eca_r90p ifile1 ifile2 ofile	

eca_r90ptot	Precipitation percent due to R90p days
eca_r90ptot ifile1 ifile2 ofile	

eca_r95p	Very wet days wrt 95th percentile of reference period
eca_r95p ifile1 ifile2 ofile	

eca_r95ptot	Precipitation percent due to R95p days
eca_r95ptot ifile1 ifile2 ofile	

eca_r99p	Extremely wet days wrt 99th percentile of reference period
eca_r99p ifile1 ifile2 ofile	

eca_r99ptot	Precipitation percent due to R99p days
eca_r99ptot ifile1 ifile2 ofile	

eca_pd	Precipitation days index per time period
eca_pd,*x* ifile ofile	
eca_r10mm	Heavy precipitation days index per time period
eca_r20mm	Very heavy precipitation days index per time period
<*operator*> ifile ofile	

eca_rr1	Wet days index per time period
eca_rr1[,*R*] ifile ofile	

eca_rx1day	Highest one day precipitation amount per time period
eca_rx1day[,*mode*] ifile ofile	

eca_rx5day	Highest five-day precipitation amount per time period
eca_rx5day[,*x*] ifile ofile	

eca_sdii	Simple daily intensity index per time period
eca_sdii[,*R*] ifile ofile	

eca_su	Summer days index per time period
eca_su[,*T*] ifile ofile	

eca_tg10p	Cold days percent wrt 10th percentile of reference period
eca_tg10p ifile1 ifile2 ofile	

eca_tg90p	Warm days percent wrt 90th percentile of reference period
eca_tg90p ifile1 ifile2 ofile	

eca_tn10p	Cold nights percent wrt 10th percentile of reference period
eca_tn10p ifile1 ifile2 ofile	

eca_tn90p	Warm nights percent wrt 90th percentile of reference period
eca_tn90p ifile1 ifile2 ofile	

eca_tr	Tropical nights index per time period
eca_tr[,*T*] ifile ofile	

eca_tx10p	Very cold days percent wrt 10th percentile of reference period
eca_tx10p ifile1 ifile2 ofile	

eca_tx90p	Very warm days percent wrt 90th percentile of reference period
eca_tx90p ifile1 ifile2 ofile	