

# CDO Reference Card

Climate Data Operator  
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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/F32/4 for nc1,nc2,nc4,nc4; F32/F64 for grb2.srv,ext,iwg; 1-24 for grb1,grb2)
-f <format>	Add L or B for Little or Big endian byteorder
-g <grid>	Outputformat: grb1,grb2,nc1,nc2,nc4,nc4c,srv,ext,grid
-h	Grid names: r<NX>x<NY>, n<N>, gme<NI>
-M	Help information for the operators
-m <missval>	Indicate that the I/O streams have missing values
-O	Set the default missing value (default: -9e+33)
-R	Override 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
-V	Predefined tables: echam4 echam5 mpiom1
-v	Print the version number
-z szip	Print extra details for some operators
	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	
xinfo	Extra short information listed by parameter name
xsinop	Extra short information listed by parameter identifier
<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	

### 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
unpack	Unpack data
unpack infile	outfile
bitrounding	Bit rounding
bitrounding[,parameter]	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	
splitcode	Split code numbers
splitparam	Split parameter identifiers
splitname	Split variable names
splitlevel	Split levels
splitgrid	Split grids
splitaxis	Split z-axes
splittabnum	Split parameter table numbers
<operator>[,parameter]	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[,nofset[,nskip]]]	infile obase
splitdate	Splits a file into dates
splitdate	infile obase

showformat	Show file format
showcode	Show code numbers
showname	Show variable names
showstdname	Show standard names
showlevel	Show levels
showtype	Show GRIB level types
showyear	Show years
showmon	Show months
showdate	Show date information
showtime	Show time information
showtimestamp	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	

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

collgrid	Collect horizontal grid
collgrid[,names]]	infiles outfile

## Selection

select	Select fields
delete	Delete fields
<operator>,parameter	infiles outfile

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

selparam	Select parameters by identifier
delparam	Delete parameters by identifier
<operator>,parameter	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,stdcall	infile outfile
sellevel	Select levels

sellevidx	Select levels by index
sellevidx,levidx	infile outfile
selgrid	Select grids

selzaxis	Select z-axes
selzaxis,zaxes	infile outfile
selzaxisname	Select z-axes by name

selzaxisname,zaxisnames	Select z-axes by name
selztype	Select GRIB level types
selztype,ltypes	infile outfile

seltabnum	Select parameter table numbers
sel timestep	Select timesteps
sel timestep,timesteps	infile outfile

seltime	Select times
selhour	Select hours
selhour,hours	infile outfile

selday	Select days
selmonth	Select months
selmonth,months	infile outfile

selyear	Select years
selyear,years	infile outfile
selseason	Select seasons

seldate	Select dates
seldate,startdate[,enddate]	infile outfile
selmon	Select single month

selmon,month[,nts1[,nts2]]	Select month[,nts1[,nts2]]
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

selcircle	Select cells inside a circle
selcircle,[parameter]	infile outfile
selgridcell	Select grid cells

delgridcell	Delete grid cells
<operator>,indices	infile outfile
setattribute	Set attributes

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

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

eq	Equal
ne	Not equal
le	Less equal

lt	Less than
ge	Greater equal
gt	Greater than

<operator>,c	infile outfile
ymoneq	Compare time series with Equal

ymoneq	Compare time series with Equal
ymonne	Compare time series with NotEqual

ymonle	Compare time series with LessEqual
ymonlt	Compares if time series with LessThan
ymonge	Compares if time series with GreaterEqual

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
setmaxsteps	Set max timesteps
setmaxsteps,maxsteps	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,shiftValue	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>,jns,shift,j,cyclic,j,coord,j	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
setcomiss	Set constant to missing value
setmissoc	Set missing value to constant
<operator>,c	infile outfile
setrtomiss	Set range to missing value
setvrange	Set valid range
<operator>,rmin,rmax	infile outfile
setmisstomm	Set missing value to nearest neighbor
setmisstomm	infile outfile
setmisstodis	Set missing value to distance-weighted average
setmisstodis,[neighbors]	infile outfile
vertfillmiss	Vertical filling of missing values
vertfillmiss,[parameter]	infile outfile
timfillmiss	Temporal filling of missing values
timfillmiss,[parameter]	infile outfile
setgridcell	Set the value of a grid cell
setgridcell,[parameter]	infile outfile
<b>Arithmetic</b>	
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
mule	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
mons sub	Subtract monthly time series
monmul	Multiply monthly time series
mondiv	Divide monthly time series
<operator>	infile1 infile2 outfile
yearadd	Add yearly time series
years sub	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
yhours sub	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
ydays sub	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
ymons sub	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
muldpdm	Multiply with days per month
divdpdm	Divide by days per month
muldp y	Multiply with days per year
divdp y	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
<b>Statistical values</b>	
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
enspcl	Ensemble percentiles
enspcl,p	infiles outfile
ensrkhistspace	Ranked Histogram averaged over time
ensrkhistime	Ranked Histogram averaged over space
ensroc	Ensemble Receiver Operating characteristics
<operator>	obsfile ensfiles outfile
enscrps	Ensemble CRPS and decomposition
enscrps rfile	infiles outfilebase
ensb rs	Ensemble Brier score
ensb rs,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
fdpctl	Field percentiles
fdpctl,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,[nofset,[nskip]]	infile outfile
timselpctl	Time range percentiles
timselpctl,p,nsets,[nofset,[nskip]]	infile1 infile2 infile3 outfile
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

<code>timpctl</code>	Time percentiles
<code>timpctl,p infile1 infile2 infile3 outfile</code>	
<code>hour&lt;stat&gt;</code>	Hourly statistical values
<code>&lt;operator&gt; infile outfile</code>	
<code>hourpctl</code>	Hourly percentiles
<code>hourpctl,p infile1 infile2 infile3 outfile</code>	
<code>day&lt;stat&gt;</code>	Daily statistical values
<code>&lt;operator&gt; infile outfile</code>	
<code>daypctl</code>	Daily percentiles
<code>daypctl,p infile1 infile2 infile3 outfile</code>	
<code>mon&lt;stat&gt;</code>	Monthly statistical values
<code>&lt;operator&gt; infile outfile</code>	
<code>monpctl</code>	Monthly percentiles
<code>monpctl,p infile1 infile2 infile3 outfile</code>	
<code>yearmonmean</code>	Yearly mean from monthly data
<code>yearmonmean infile outfile</code>	
<code>year&lt;stat&gt;</code>	Yearly statistical values
<code>yearminidx</code>	Yearly minimum indices
<code>yearmaxidx</code>	Yearly maximum indices
<code>&lt;operator&gt; infile outfile</code>	
<code>yearpctl</code>	Yearly percentiles
<code>yearpctl,p infile1 infile2 infile3 outfile</code>	
<code>seas&lt;stat&gt;</code>	Seasonal statistical values
<code>&lt;operator&gt; infile outfile</code>	
<code>seaspctl</code>	Seasonal percentiles
<code>seaspctl,p infile1 infile2 infile3 outfile</code>	
<code>yhour&lt;stat&gt;</code>	Multi-year hourly statistical values
<code>&lt;operator&gt; infile outfile</code>	
<code>dhour&lt;stat&gt;</code>	Multi-day hourly statistical values
<code>&lt;operator&gt; infile outfile</code>	
<code>yday&lt;stat&gt;</code>	Multi-year daily statistical values
<code>&lt;operator&gt; infile outfile</code>	
<code>ydaypctl</code>	Multi-year daily percentiles
<code>ydaypctl,p infile1 infile2 infile3 outfile</code>	
<code>ymon&lt;stat&gt;</code>	Multi-year monthly statistical values
<code>&lt;operator&gt; infile outfile</code>	
<code>ymonpctl</code>	Multi-year monthly percentiles
<code>ymonpctl,p infile1 infile2 infile3 outfile</code>	
<code>yseas&lt;stat&gt;</code>	Multi-year seasonal statistical values
<code>&lt;operator&gt; infile outfile</code>	
<code>yesaspctl</code>	Multi-year seasonal percentiles
<code>yesaspctl,p infile1 infile2 infile3 outfile</code>	
<code>ydrun&lt;stat&gt;</code>	Multi-year daily running statistical values
<code>&lt;operator&gt;,nts infile outfile</code>	
<code>ydrunpctl</code>	Multi-year daily running percentiles
<code>ydrunpctl,p,nts infile1 infile2 infile3 outfile</code>	
<b>Correlation and co.</b>	
<code>fldcor</code>	Correlation in grid space
<code>fldcor infile1 infile2 outfile</code>	
<code>timecor</code>	Correlation over time
<code>timecor infile1 infile2 outfile</code>	
<code>fldcovar</code>	Covariance in grid space
<code>fldcovar infile1 infile2 outfile</code>	
<code>timcovar</code>	Covariance over time
<code>timcovar infile1 infile2 outfile</code>	
<b>Regression</b>	
<code>regres</code>	Regression
<code>regres[,equal]</code>	infile outfile
<code>detrend</code>	Detrend
<code>detrend[,equal]</code>	infile outfile
<code>trend</code>	Trend
<code>trend[,equal]</code>	infile outfile1 outfile2
<code>addtrend</code>	Add trend
<code>subtrend</code>	Subtract trend
<code>&lt;operator&gt;[,equal]</code>	infile1 infile2 infile3 outfile
<b>EOFs</b>	
<code>eof</code>	Calculate EOFs in spatial or time space
<code>eotime</code>	Calculate EOFs in time space
<code>eofspatial</code>	Calculate EOFs in spatial space
<code>eof3d</code>	Calculate 3-Dimensional EOFs in time space
<code>&lt;operator&gt;,neof</code>	infile outfile1 outfile2
<code>eofcoeff</code>	Calculate principal coefficients of EOFs
<code>eofcoeff infile1 infile2 obase</code>	
<b>Interpolation</b>	
<code>remapbil</code>	Bilinear interpolation
<code>genbil</code>	Generate bilinear interpolation weights
<code>&lt;operator&gt;,grid</code>	infile outfile
<code>remapbic</code>	Bicubic interpolation
<code>genbic</code>	Generate bicubic interpolation weights
<code>&lt;operator&gt;,grid</code>	infile outfile
<code>remapnn</code>	Nearest neighbor remapping
<code>gennn</code>	Generate nearest neighbor remap weights
<code>&lt;operator&gt;,grid</code>	infile outfile
<code>remapdis</code>	Distance weighted average remapping
<code>gendis</code>	Generate distance weighted average remap weights
<code>&lt;operator&gt;,grid[,neighbors]</code>	infile outfile
<code>remapcon</code>	First order conservative remapping
<code>gencon</code>	Generate 1st order conservative remap weights
<code>&lt;operator&gt;,grid</code>	infile outfile
<code>remapcon2</code>	Second order conservative remapping
<code>gencon2</code>	Generate 2nd order conservative remap weights
<code>&lt;operator&gt;,grid</code>	infile outfile
<code>remaplafl</code>	Largest area fraction remapping
<code>genlafl</code>	Generate largest area fraction remap weights
<code>&lt;operator&gt;,grid</code>	infile outfile
<code>remap</code>	Grid remapping
<code>remap,grid,weights</code>	infile outfile
<code>remapeta</code>	Remap vertical hybrid level
<code>remapeta,vct,oro</code>	infile outfile
<code>ml2pl</code>	Model to pressure level interpolation
<code>ml2pl,plevels</code>	infile outfile
<code>ml2hl</code>	Model to height level interpolation
<code>ml2hl,hlevels</code>	infile outfile
<code>ap2pl</code>	Air pressure to pressure level interpolation
<code>ap2pl,plevels</code>	infile outfile
<code>gh2hl</code>	Geometric height to height level interpolation
<code>gh2hl,hlevels</code>	infile outfile
<code>intlevel</code>	Linear level interpolation
<code>intlevel,parameter</code>	infile outfile
<code>intlevel3d</code>	Linear level interpolation onto a 3D vertical coordinate
<code>intlevelx3d</code>	like intlevel3d but with extrapolation
<code>&lt;operator&gt;,tgtcoordinate</code>	infile1 infile2 outfile
<code>inttime</code>	Interpolation between timesteps
<code>inttime,date,time[,inc]</code>	infile outfile
<code>inttime</code>	Interpolation between timesteps
<code>inttime,n</code>	infile outfile
<b>Transformation</b>	
<code>intyear</code>	Interpolation between two years
<code>intyear,years</code>	infile1 infile2 obase
<b>Import/Export</b>	
<code>sp2gp</code>	Spectral to gridpoint
<code>gp2sp</code>	Gridpoint to spectral
<code>&lt;operator&gt;[,type=trunc]</code>	infile outfile
<code>sp2sp</code>	Spectral to spectral
<code>sp2sp,trunc</code>	infile outfile
<code>dv2ps</code>	D and V to velocity potential and stream function
<code>dv2ps,infile</code>	outfile
<code>dv2uv</code>	Divergence and vorticity to U and V wind
<code>uv2dv</code>	U and V wind to divergence and vorticity
<code>&lt;operator&gt;[,gridtype]</code>	infile outfile
<code>fourier</code>	Fourier transformation
<code>fourier,epsilon</code>	infile outfile
<code>import_binary</code>	Import binary data sets
<code>import_binary infile</code>	outfile
<code>import_cmsaf</code>	Import CM-SAF HDF5 files
<code>import_cmsaf infile</code>	outfile
<code>import_amrs</code>	Import AMSR binary files
<code>import_amrs infile</code>	outfile
<code>input</code>	ASCII input
<code>input,grid[,zaxis]</code>	outfile
<code>inputsrv</code>	SERVICE ASCII input
<code>inputtext</code>	EXTRA ASCII input
<code>&lt;operator&gt; outfile</code>	
<code>output</code>	ASCII output
<code>output,infiles</code>	
<code>outputf</code>	Formatted output
<code>outputf,format[,nelem]</code>	infiles
<code>outputint</code>	Integer output
<code>outputsrv</code>	SERVICE ASCII output
<code>outputext</code>	EXTRA ASCII output
<code>&lt;operator&gt; infiles</code>	
<code>outputtab</code>	Table output
<code>outputtab,parameter</code>	infiles outfile
<code>gmtxyz</code>	GMT xyz format
<code>gmtcells</code>	GMT multiple segment format
<code>&lt;operator&gt; infile</code>	
<b>Miscellaneous</b>	
<code>gradsdes</code>	GrADS data descriptor file
<code>gradsdes[,mapversion]</code>	infile
<code>after</code>	ECHAM standard post processor
<code>after,vct</code>	infiles outfile
<code>bandpass</code>	Bandpass filtering
<code>bandpass,fmin,fmax</code>	infile outfile
<code>lowpass</code>	Lowpass filtering
<code>lowpass,fmax</code>	infile outfile
<code>highpass</code>	Highpass filtering
<code>highpass,fmin</code>	infile outfile
<code>gridarea</code>	Grid cell area
<code>gridweights</code>	Grid cell weights
<code>&lt;operator&gt; infile</code>	outfile
<code>smooth</code>	Smooth grid points
<code>smooth,options</code>	infile outfile
<code>smooth9</code>	9 point smoothing
<code>smooth9 infile</code>	outfile
<code>setvals</code>	Set list of old values to new values
<code>setvals,oldval,newval[...]</code>	infile outfile
<code>setrtoc</code>	Set range to constant
<code>setrtoc,rmin,rmax,c</code>	infile outfile
<code>setrtoc2</code>	Set range to constant others to constant2
<code>setrtoc2,rmin,rmax,c2</code>	infile outfile
<code>gridcellindex</code>	Get grid cell index from lon/lat point
<code>gridcellindex,[parameter]</code>	infile
<code>const</code>	Create a constant field
<code>const,const,grid</code>	outfile
<code>random</code>	Create a field with random numbers
<code>random,grid[,seed]</code>	outfile
<code>topo</code>	Create a field with topography
<code>topo,[grid]</code>	outfile
<code>seq</code>	Create a time series
<code>seq,start,end[,inc]</code>	outfile
<code>stdatm</code>	Create values for pressure and temperature for hydro
<code>stdatm,levels</code>	outfile
<code>timsort</code>	Sort over the time
<code>timsort infile</code>	outfile
<code>uvDestag</code>	Destaggering of u/v wind components
<code>uvDestag,u,v,[-/+0.5],[-/+0.5]</code>	infile outfile
<code>rotuvNorth</code>	Rotate u/v wind to North pole.
<code>projuvLatLon</code>	Cylindrical Equidistant projection
<code>&lt;operator&gt;,u,v</code>	infile outfile
<code>rotuvb</code>	Backward rotation
<code>rotuvb,u,v,...</code>	infile outfile
<code>mrotruvb</code>	Backward rotation of MPIOM data
<code>mrotruvb infile1</code>	outfile
<code>mastrfu</code>	Mass stream function
<code>mastrfu infile</code>	outfile
<code>sealevelpressur</code>	Sea level pressure
<code>gheight</code>	Geopotential height
<code>&lt;operator&gt; infile</code>	outfile
<code>adisit</code>	Potential temperature to in-situ temperature
<code>adipot</code>	In-situ temperature to potential temperature
<code>&lt;operator&gt;,[pressure]</code>	infile outfile
<code>rhopot</code>	Calculates potential density
<code>rhopot,[pressure]</code>	infile outfile
<code>histcount</code>	Histogram count
<code>histsum</code>	Histogram sum
<code>histmean</code>	Histogram mean
<code>histfreq</code>	Histogram frequency
<code>&lt;operator&gt;,bounds</code>	infile outfile
<code>sethalo</code>	Set the bounds of a field
<code>sethalo,[parameter]</code>	infile outfile
<code>wct</code>	Windchill temperature
<code>wct infile1</code>	infile2 outfile
<code>fdns</code>	Frost days where no snow index per time period
<code>fdns infile1</code>	infile2 outfile
<code>strwin</code>	Strong wind days index per time period
<code>strwin,[v]</code>	infile outfile
<code>strbre</code>	Strong breeze days index per time period
<code>strbre infile</code>	outfile
<code>strgal</code>	Strong gale days index per time period
<code>strgal infile</code>	outfile
<code>hurr</code>	Hurricane days index per time period
<code>hurr infile</code>	outfile
<code>cmorlite</code>	CMOR lite
<code>cmorlite,table,[convert]</code>	infile outfile
<code>verifygrid</code>	Verify grid coordinates
<code>verifygrid infile</code>	

<b>hpupgrade</b>	Degrad healpix
<b>hpupgrade</b>	Upgrade healpix
<operator>,parameter infile outfile	

## NCL

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