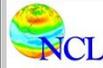


NCL functions & procedures graphics reference card

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Read the corresponding web page to get more information about a function or procedure:

http://ncl.ucar.edu/Document/Functions/list_alpha.shtml

Graphics routines

boxplot

Creates a boxplot.

ColorNegDashZeroPosContour

Sets the negative contours to dashed, and colors the negative, positive, and zero contours to user-specified colors.

ColorShadeLeGeContour

Shades contour regions given low and high values and two colors. (Superceded by `gsn_contour_shade` as of version 4.3.0.)

create_graphic

Creates a graphic object

draw

Draws the given graphical objects.

drawNDCGrid

Draws NDC grid lines at 0.1 NDC coordinate intervals and labels them.

get_isolines

Retrieves the points that define a contour line.

gsn_add_annotation

Attaches the given annotation to the given plot.

gsn_add_polygon

Attaches a filled polygon to the given plot.

gsn_add_polyline

Attaches a polyline to the given plot.

gsn_add_polymarker

Attaches polymarkers to the given plot.

gsn_add_shapefile_polygon

Attaches shapefile polygon data to the given plot(s) using randomly-filled polygons.

gsn_add_shapefile_polylines

Attaches shapefile polyline or polygon data to the given plot(s) using polylines.

gsn_add_shapefile_polymarkers

Attaches shapefile point data to the given plot(s) using polymarkers.

gsn_add_text

Attaches text strings to the given plot.

gsn_attach_plots

Attaches a series of plots to a base plot.

gsn_blank_plot

Draws a blank plot with tickmarks pointing inward.

gsn_contour

Creates and draws a contour plot.

gsn_contour_map

Creates and draws a contour plot over a map.

gsn_contour_shade

Shades contour regions given low and/or high values using colors or patterns.

gsn_coordinates

Draws or attaches the data coordinate locations on the given plot as grid lines or markers.

gsn_create_labelbar

Creates a labelbar.

gsn_create_legend

Creates a legend.

gsn_create_text

Creates text strings.

gsn_csm_attach_zonal_means

Attaches a zonal means plot to a contour/map plot.

gsn_csm_blank_plot

Draws a blank plot with tickmarks pointing outward.

gsn_csm_contour

Creates and draws a contour plot.

gsn_csm_contour_map

Creates and draws a contour plot over a map.

gsn_csm_contour_map_ce

Creates and draws a contour plot over a cylindrical equidistant map.

gsn_csm_contour_map_overlay

Creates and draws two contour plots over a map.

gsn_csm_contour_map_polar

Creates and draws a contour plot over a polar stereographic map.

gsn_csm_hov

Creates and draws a Hovmueller (time v.s. longitude) plot.

gsn_csm_lat_time

Creates and draws a latitude versus time plot.

gsn_csm_map

Creates and draws a map.

gsn_csm_map_ce

Creates and draws a cylindrical equidistant map.

gsn_csm_map_polar

Creates and draws a polar stereographic map.

gsn_csm_pres_hgt

Creates and draws a pressure/height plot.

gsn_csm_pres_hgt_streamline

Creates and draws a pressure/height contour plot overlaid with streamlines.

gsn_csm_pres_hgt_vector

Creates and draws a pressure/height contour plot overlaid with vectors.

gsn_csm_streamline

Creates and draws a streamline plot.

gsn_csm_streamline_contour_map

Creates and draws streamlines over a contour plot over a map.

gsn_csm_streamline_contour_map_ce

Creates and draws streamlines over a contour plot over a cylindrical equidistant map.

gsn_csm_streamline_contour_map_polar

Creates and draws streamlines over a contour plot over a polar stereographic map.

gsn_csm_streamline_map

Creates and draws a streamline plot over a map.

gsn_csm_streamline_map_ce

Creates and draws a streamline plot over a cylindrical equidistant map.

gsn_csm_streamline_map_polar

Creates and draws a streamline plot over a polar stereographic map.

gsn_csm_time_lat

Creates and draws a time versus latitude plot.

gsn_csm_vector

Creates and draws a vector plot.

gsn_csm_vector_map

Creates and draws a vector plot over a map.

gsn_csm_vector_map_ce

Creates and draws a vector plot over a cylindrical equidistant map.

gsn_csm_vector_map_polar

Creates and draws a vector plot over a polar stereographic map.

gsn_csm_vector_scalar

Creates and draws a vector plot, and uses a scalar field to draw a separate contour plot or color the vectors.

gsn_csm_vector_scalar_map

Creates and draws a vector plot over a map, and uses a scalar field to draw a separate contour plot or color the vectors.

gsn_csm_vector_scalar_map_ce

Creates and draws a vector plot over a cylindrical equidistant map projection, and uses a scalar field to draw a separate contour plot or color the vectors.

gsn_csm_vector_scalar_map_polar

Creates and draws a vector plot over a polar stereographic map projection, and uses a scalar field to draw a separate contour plot or color the vectors.

gsn_csm_x2y

Creates and draws an XY plot with two different X axes.

gsn_csm_x2y2

Creates and draws an XY plot with two different X and Y axes

gsn_csm_xy

Creates and draws an XY plot.

gsn_csm_xy2

Creates and draws an XY plot with two different Y axes.

gsn_csm_xy3

Creates and draws an XY plot with three different Y axes.

gsn_csm_y

Creates and draws an XY plot, using index values for the X axis.

gsn_histogram

Draws a histogram plot on the given workstation.

gsn_labelbar_ndc

Draws a labelbar on the given workstation.

gsn_legend_ndc

Draws a legend on the given workstation.

gsn_map

Creates and draws a map.

gsn_open_wks

Opens a workstation on which to draw graphics.

gsn_panel
Draws multiple plots of identical size on a single frame.

gsn_polygon
Draws a filled polygon on the given plot.

gsn_polygon_ndc
Draws a filled polygon on the given workstation.

gsn_polyline
Draws a polyline on the given plot.

gsn_polyline_ndc
Draws a polyline on the given workstation.

gsn_polymarker
Draws polymarkers on the given plot.

gsn_polymarker_ndc
Draws polymarkers on the given workstation.

gsn_streamline
Creates and draws a streamline plot.

gsn_streamline_map
Creates and draws a streamline plot over a map.

gsn_streamline_scalar
Creates and draws a streamline plot colored by a given a scalar field.

gsn_streamline_scalar_map
Creates and draws a streamline plot over a map, and colors the streamlines using the given scalar field.

gsn_table
Draws a table with text.

gsn_text
Draws text strings on the given plot.

gsn_text_ndc
Draws text strings on the given workstation.

gsn_vector
Creates and draws a vector plot.

gsn_vector_map
Creates and draws a vector plot over a map.

gsn_vector_scalar
Creates and draws a vector plot colored by a given a scalar field.

gsn_vector_scalar_map
Creates and draws a vector plot over a map, and colors the vectors using the given scalar field.

gsn_xy
Creates and draws an XY plot.

gsn_y
Creates and draws an XY plot, using index values for the X axis.

infoTimeStamp
Draws two text strings at the bottom of the workstation to indicate the time the plot was created and other information.

maximize_output
Maximizes the sizes of a series of plots drawn in a single frame.

msgValOutline
Draws an outline around missing data in vector and streamline plots.

ngezlogo
Draws the NCAR logo in the lower right corner of the

given workstation.

nggetp
Retrieves values for various parameters for the NCAR ngezlogo procedure.

nglogo
Draws various NCAR and UCAR logos on the given workstation.

ngsetp
Sets values for various parameters for the NCAR ngezlogo procedure.

NhiAddAnnotation
Add annotations to a plot object as an external annotation.

NhiAddOverlay
Overlays one plot object on another.

NhiAddPrimitive
Adds a Primitive object to an existing plot.

NhiDataPolygon
Draws a polygon using data coordinates.

NhiDataPolyline
Draws a polyline using data coordinates.

NhiDataPolymarker
Draws polymarkers using data coordinates.

NhiDraw
Draws the given graphical objects.

NhiNDCPolygon
Draws a polygon using NDC coordinates.

NhiNDCPolyline
Draws a polyline using NDC coordinates.

NhiNDCPolymarker
Draws polymarkers using NDC coordinates.

NhiNewDashPattern
Adds new dash patterns to the existing table of dash patterns.

NhiNewMarker
Adds new markers to the existing table of markers.

NhiRemoveAnnotation
Remove annotations from the plot they are registered in.

NhiRemoveOverlay
Removes one or more plots from an overlay.

NhiRemovePrimitive
Removes one or more primitives from the given Transform object.

NhiSetDashPattern
Sets the dash patterns for a given list of dash pattern indexes and workstations.

NhiSetMarker
Sets the markers for a given list of marker indexes and workstations.

overlay
Overlays one plot object on another.

paleo_outline
Creates continental outlines from model orography data.

pie_chart
Creates a basic pie chart.

reset_device_coordinates
Resets the PS/PDF device coordinates back to their default values.

setColorContourClear
Sets the color contours between two given levels transparent.

ShadeCOI
Adds the cone of influence as a shaded polygon.

ShadeGeLeContour
Shades contour regions given low and high values and a shade pattern.(Superceded by gsn_contour_shade as of version 4.3.0.)

ShadeGtContour
Shades contour regions above a given value with the given fill pattern.(Superceded by gsn_contour_shade as of version 4.3.0.)

ShadeLtContour
Shades contour regions below a given value with the given fill pattern.(Superceded by gsn_contour_shade as of version 4.3.0.)

ShadeLtGtContour
Shades contour regions below a given value and above a given value with the specified fill patterns. (Superceded by gsn_contour_shade as of version 4.3.0.)

skewT_BackGround
Creates a background chart for Skew T, Log P plotting.

skewT_PlotData
Plot a sounding and (optionally) winds on Skew T, Log P charts created by skewT_BackGround.

symMinMaxPlt
Calculates the minimum/maximum values for a variable and uses nice_mnmxintvl to calculate the symmetric contour interval.

tdclr
Defines a set of colors for use with selected TDPACK routines.

tdctri
Cuts the triangles in a triangle list with a plane perpendicular to an axis (for use with selected TDPACK routines).

tdcudp
Not yet implemented.

tdcurv
Draws the projection of a curve defined by an array of points in 3-space.

tddtri
Draws triangles defined by a triangle list (for use with selected TDPACK routines).

tdez2d
Draws a surface on the specified workstation.

tdez3d
Draws an isosurface on the specified workstation.

tdgetp
Retrieves TDPACK parameter values.

tdgrds
Draws perimeters, ticks, and grid lines on the six sides of a box (for use with selected TDPACK routines).

tdgrid
Draws a grid on a particular face of a box in 3-space (for use with selected TDPACK routines).

tdgtrs Gets the definition of a specified rendering style (for use with selected TDPACK routines).

tdinit Defines eye position, line of sight, up direction, and stereo flag for selected TDPACK routines.

tditri Adds triangles defining an isosurface to a triangle list (for use with selected TDPACK routines).

tdlbla Draws labels for a particular face of a box in 3-space (for use with selected TDPACK routines).

tdlblp Not yet implemented.

tdlbls Draws labels for all faces of a box in 3-space (for use with selected TDPACK routines).

tdline Draws the projection of a solid line in 3-space (for use with selected TDPACK routines).

tdlndp Not yet implemented.

tdlnpa Draws the projection of a line joining two points in the reference parallelogram (for use with selected TDPACK routines).

tdlpdp Not yet implemented.

tdmtri Adds triangles defining a 3D marker to a triangle list for use with selected TDPACK routines.

tdotri Orders the triangles in a triangle list for proper rendering (for use with selected TDPACK routines).

tdpara Defines the reference parallelogram for use with selected TDPACK routines.

tdplch Draws a string in the plane of the reference parallelogram (for use with selected TDPACK routines).

tdprpa Retrieves the coordinates of a projection in the projection plane, given the parallelogram coordinates of a point (for use with selected TDPACK routines).

tdprpi Retrieves the parallelogram coordinates of a point in the reference parallelogram, given a point in the projection plane (for use with selected TDPACK routines.)

tdprpt Retrieves the coordinates of its projection in the projection plane, given the coordinates of a point in 3-space (for use with selected TDPACK routines).

tdsetp Sets TDPACK parameter values.

tdsort Sorts an array (for use with selected TDPACK routines).

tdstri Adds triangles defining a simple surface to a triangle list (for use with selected TDPACK routines).

tdstrs Sets the values defining a selected rendering style (for use with selected TDPACK routines).

tdttri Adds triangles defining a trajectory to a triangle list (for use with selected TDPACK routines).

WindRoseBasic Plots a basic wind rose.

WindRoseColor Plot a wind rose diagram where different colors are used to differentiate speed ranges.

WindRoseThickLine Plot a black and white wind rose diagram where different line thicknesses are used to differentiate speed ranges.

wmbarb Draws wind barbs on the given workstation.

wmbarbmap Draws wind barbs over maps.

wmdrft Draws weather front lines on the given workstation.

wmgetp Retrieves parameter values for selected Wmap routines.

wmlabs Plots special symbols and icons for daily weather.

wmsetp Sets parameter values for selected Wmap routines.

wmstnm Plots station model data on the given workstation.

wmvect Draws vectors on the given workstation.

wmvectmap Draws vectors over maps.

wmvlbl Draws an informational label box for plots produced by wmvect or wmvectmap.

wrf_contour Creates a contour plot from ARW WRF model output.

wrf_map Creates a map background for ARW WRF model data.

wrf_map_overlay Overlays different plot id's over a map background (deprecated in version 5.1.0).

wrf_map_overlays Overlays different contour and vector plots over a WRF-ARW map background.

wrf_map_resources Sets map plotting resources based on an input WRF-ARW file.

wrf_map_zoom Zooms into a portion of the ARW WRF model domain, and creates a map background (deprecated in version 5.1.0).

wrf_overlay

Overlays multiple plots, created from other ARW WRF plot functions (deprecated in version 5.1.0).

wrf_overlays Overlays multiple plots, created from other ARW WRF plot functions.

wrf_vector Creates a vector plot from ARW WRF model output

Color routines

color_index_to_rgba Converts an absolute color index to its equivalent RGBA quadruplet

ColorNegDashZeroPosContour Sets the negative contours to dashed, and colors the negative, positive, and zero contours to user-specified colors.

ColorShadeLeGeContour Shades contour regions given low and high values and two colors.(Superceded by gsn_contour_shade as of version 4.3.0.)

get_color_index Chooses a color index for a scalar value, given a color map and a range of values.

get_color_rgba Chooses an RGB triplet or RGBA quadruplet for a scalar value, given a color map and a range of values.

GetFillColor Chooses a color from a group of RGB triplets based upon a secondary scalar field (deprecated version).

GetFillColorIndex Chooses from a list of color table indices based upon a secondary scalar field (deprecated version).

gsn_contour_shade Shades contour regions given low and/or high values using colors or patterns.

gsn_define_colormap Defines a color map for the given workstation.

gsn_draw_colormap Draws the current color map for the given workstation.

gsn_draw_named_colors Draws the given list of named colors.

gsn_merge_colormaps Merges two color maps and sets this as the color map for the given workstation.

gsn_retrieve_colormap Retrieves a color map for the given workstation.

gsn_reverse_colormap Reverses the color map for the given workstation.

hlsrgb Converts HLS color values to RGB.

hsv2rgb Maps values from the HSV color model to the RGB color model (deprecated).

hsvrgb Converts HSV color values to RGB.

namedcolor2rgb Returns the RGB triplets of the given list of named colors.

namedcolor2rgba

Returns the RGBA quadruplets of the given list of named colors.

NhlFreeColor

Removes one or more color entries from one or more workstations.

NhlGetNamedColorIndex

Returns color map indexes that match the given color names in the color maps of the given workstations.

NhllsAllocatedColor

Queries a list of workstations to determine whether or not the given color indexes have been allocated.

NhlNewColor

Allocates new workstation color indexes.

NhlPalGetDefined

Returns a list of available color maps.

NhlSetColor

Sets the colors for a given list of color indexes and workstations.

read_colormap_file

Reads an NCL system colormap file or a user-defined colormap.

rgba_to_color_index

Converts RGBA quadruplets to their encoded integer equivalent absolute color indexes

rgbhls

Converts RGB color values to HLS.

rgbhsv

Converts RGB color values to HSV.

RGBtoCmap

Reads a text file of RGB triplets and converts them to a colormap.

rgbyiq

Converts RGB color values to YIQ values.

setColorContourClear

Sets the color contours between two given levels transparent.

span_color_indexes

Given the number of desired color values, return an array of indexes that nicely span the given color map.

span_color_rgba

Given the number of desired color values, return an array of RGB triplets or RGBA quadruplets that nicely span the given color map.

span_named_colors

Returns an RGB array that is a span between given list of named colors.

yiqrngb

Converts YIQ color values to RGB.

NCL object routines

attsetvalues

Applies resources to the given objects.

create_graphic

Creates a graphic object

destroy

Destroys objects from NCL.

get_isolines

Retrieves the points that define a contour line.

list_hlus

Lists all of the HLU objects currently referenced by NCL variables.

NhlAddAnnotation

Add annotations to a plot object as an external annotation.

NhlAddData

Adds one or more additional data items to a plot.

NhlAddOverlay

Overlays one plot object on another.

NhlAddPrimitive

Adds a Primitive object to an existing plot.

NhlAppGetDefaultParentId

Returns a reference to the current default App object.

NhlClassName

Retrieve the class name of one or more NCL objects.

NhlDestroy

Destroys objects from NCL.

NhlGetBB

Retrieves the bounding boxes of a list of NCL objects.

NhlGetClassResources

Returns a list of resources associated with the given class name and an optional filter string.

NhlGetErrorObjectId

Returns a reference to the current Error object.

NhlGetParentId

Returns the ids of the parent ids of the given objects.

NhlGetWorkspaceObjectId

Returns a reference to the current Workspace object.

NhllsApp

Returns True for each given object that is an App object.

NhllsDataComm

Returns True for each given object that is a DataComm object.

NhllsDataItem

Returns True for each given object that is a DataItem object.

NhllsDataSpec

Returns True for each given object that is a DataSpec object.

NhllsTransform

Returns True for each given object that is a Transform object.

NhllsView

Returns True for each given object that is a View object.

NhlName

Retrieves the name of one or more NCL objects.

NhlRemoveAnnotation

Remove annotations from the plot they are registered in.

NhlRemoveData

Removes data items from one or more plots.

NhlRemoveOverlay

Removes one or more plots from an overlay.

NhlRemovePrimitive

Removes one or more primitives from the given Transform object.

NhlUpdateData

Forces the DataComm instances to update their internal states.

overlay

Overlays one plot object on another.

Workstation routines

clear

Clears the given workstation objects.

frame

Updates and clears the given workstation objects.

NhlChangeWorkstation

Changes the output workstation of one or more NCL View objects.

NhlClearWorkstation

Clears the given workstation objects.

NhlFrame

Updates and clears the given workstation objects.

NhlGetParentWorkstation

Returns the ids of the parent workstations of the given objects.

NhllsWorkstation

Returns True for each given object that is a Workstation object.

NhlUpdateWorkstation

Updates the given workstation objects.

update

Updates the given workstation objects.

WRF

wrf_contour

Creates a contour plot from ARW WRF model output.

wrf_map

Creates a map background for ARW WRF model data.

wrf_map_overlay

Overlays different plot id's over a map background (deprecated in version 5.1.0).

wrf_map_overlays

Overlays different contour and vector plots over a WRF-ARW map background.

wrf_map_resources

Sets map plotting resources based on an input WRF-ARW file.

wrf_map_zoom

Zooms into a portion of the ARW WRF model domain, and creates a map background (deprecated in version 5.1.0).

wrf_mapres_c

Sets the appropriate geographical mapping resources based upon WRF file contents. (deprecated)

wrf_overlay

Overlays multiple plots, created from other ARW

WRF plot functions (deprecated in version 5.1.0).

wrf_overlays

Overlays multiple plots, created from other ARW WRF plot functions.

wrf_smooth_2d

Smooths a given field.

wrf_vector

Creates a vector plot from ARW WRF model output.

Unclassified routines

dim_spei_n

Calculate the standardized precipitation evapotranspiration index (SPEI).

dim_spi_n

Calculate the standardized precipitation index (SPI).

dim_thornthwaite_n

Estimate the potential evapotranspiration (PET) via the Thornthwaite method.

dim_ttwpet_n

Estimate the potential evapotranspiration (PET) via the Thornthwaite method.

rtest

Determines the statistical significance of a linear correlation coefficient.

System tools

echo_off

Disables echoing of NCL statements as they are encountered.

echo_on

Enables echoing of NCL statements as they are encountered.

exit

Forces an NCL script to exit immediately.

fileexists

Checks for existence of any UNIX file.

get_cpu_time

Returns the CPU time used by NCL.

get_ncl_version

Returns the current NCL version.

get_script_name

Returns the name of a script of commands provided to NCL for execution.

get_script_prefix_name

Returns the name of a script of commands provided to NCL for execution, if provided, with any script name tag removed.

getenv

Returns the string value of a shell environment variable.

isbigendian

Returns True if you are running NCL on a big endian machine.

isfilepresent

Checks if a supported file exists.

loadscript

Loads the given NCL script.

ncargpath

Returns the absolute pathnames of various NCAR Graphics directories.

ncargversion

Prints the NCAR Graphics version, copyright, trademark and general licensing terms.

print_clock

Prints the given string along with a current timestamp.

sleep

Pauses execution of NCL scripts for a specified number of seconds.

status_exit

Exits an NCL script passing a status code to the calling environment.

system

Executes a shell command.

systemfunc

Executes a shell command and returns the output.

unique_string

Returns a unique string given the input string as a prefix.

wallClockElapsedTime

Calculates and prints elapsed 'wall clock' time.