

List of resources mentioned in graphics lecture

<http://www.ncl.ucar.edu/Document/Graphics/Resources/>

Contour resources

cnFillColor	[List of color indexes or names for filled contours]
cnFillMode	"AreaFill", "RasterFill", "CellFill"
cnFillOn	Turn on/off contour fill
cnFillPalette	Set color map for contours (new in V6.1.0)
cnLevels	[List of contour levels desired] ("ExplicitLevels")
cnLevelSelectionMode	"AutomaticLevels", "ManualLevels", "ExplicitLevels"
cnLevelSpacingF	Spacing for contour levels ("ManualLevels")
cnLineLabelsOn	Turn on/off contour line labels
cnLinesOn	Turn on/off contour lines
cnMaxLevelValF	Maximum contour level value ("ManualLevels")
cnMinLevelValF	Minimum contour level value ("ManualLevels")
cnRasterSmoothingOn	Turn on/off raster smoothing (if "RasterFill" is on)

Resources for coordinates for contours

sfXArray	Set coordinate arrays for X dimension of contour data
sfYArray	Set coordinate arrays for Y dimension of contour data

Map resources

mpFillOn	Turn on/off map fill
mpOutlineOn	Turn on/off map outlines
mpProjection	"CylindricalEquidistant", "LambertConformal", etc.
mpDataBaseVersion	"LowRes", "MediumRes", "HighRes"
mpDataSetName	[Many values depending on mpDataBaseVersion]
mpLimitMode	"LatLon", "Corners", etc.
mpMinLatF	Minimum latitude value for map
mpMaxLatF	Maximum latitude value for map
mpMinLonF	Minimum longitude value for map
mpMaxLonF	Maximum longitude value for map
mpOutlineBoundarySets	[Many values possible]

Vector resources

vcGlyphStyle	["LineArrow", "CurlyVector", "FillArrow", "WindBarb"]
vcLevelPalette	Set color map for vectors (new in V6.1.0)
vcLineArrowThicknessF	Set the line thickness for vectors
vcMinDistanceF	Set a minimum distance between vectors
vcMonoLineArrowColor	Turn off mono colors for vectors
vcRefAnnoOrthogonalPosF	Move the vector reference annotation label
vcRefLengthF	Set the length of the reference vector
vcRefMagnitudeF	Set the magnitude of the reference vector

Resources for coordinates for vectors

vfXArray	Set coordinate arrays for X dimension of vector data
vfYArray	Set coordinate arrays for Y dimension of vector data

XY plot resources

xyDashPattern	Set the dash pattern for an XY curve
xyDashPatterns	Set the dash pattern for multiple XY curves
xyLineColor	Set the line color for an XY curve
xyLineColors	Set the line color for multiple XY curves
xyLineThicknessF	Set the line thickness for an XY curve
xyLineThicknesses	Set the line thickness for multiple XY curves
xyMonoDashPattern	Turn on/off using a single pattern for all curves

Labelbar resources

lbBoxLinesOn	Turn on/off labelbar box lines
lbLabelBarOn	Turn on/off labelbar
lbLabelFontHeightF	Set size for labelbar labels
lbOrientation	“Vertical” or “Horizontal”

Legend resources

xyExplicitLegendLabels	Set labels to use for legend lines
lgLabelFontHeightF	Set the font height for legend labels
pmLegendWidthF	Set the width of the legend
pmLegendHeightF	Set the height of the legend
pmLegendOrthogonalPosF	Move the legend perpendicular to plot
pmLegendParallelPosF	Move the legend parallel to plot

Title resources

tiMainString	Main title for plot
tiXAxisString	X axis title
tiYAxisString	Y axis title

Tickmark resources

tmXBMode	["Automatic", "Manual", "Explicit"]
tmXBValues	["explicit" mode, list of values for bottom X tickmarks]
tmXBLabels	["explicit" mode, list of labels for bottom X tickmarks]
tmXBMinorOn	Turn on/off minor tickmarks on X axis
tmYLMode	["Automatic", "Manual", "Explicit"]
tmYLValues	["explicit" mode, list of values for left Y tickmarks]
tmYLLabels	["explicit" mode, list of labels for left Y tickmarks]
tmXBLabelFontHeightF	Set font height for X axis labels
tmYLabelFontHeightF	Set font height for Y axis labels

Resources to control “managed” objects like tickmarks and labelbars

pmLabelBarHeightF	Set labelbar height when used with a plot
pmLabelBarOrthogonalPosF	Move labelbar perpendicular to plot

pmLabelBarWidthF Set labelbar width when used with a plot
pmTickMarkDisplayMode “Always” gives you “nice” map tickmarks

Resources to control minimum and maximum of X and Y axes:

trXMinF Minimum value for X axis
trXMaxF Maximum value for X axis
trYMinF Minimum value for Y axis
trYMaxF Maximum value for Y axis

Viewport resources

vpHeightF Set the viewport height [0,1]
vpWidthF Set the viewport width [0,1]
vpXF Set the location of left edge of plot in viewport [0,1]
vpYF Set the location of top edge of plot in viewport [0,1]

Resources for polymarkers, polygons, and polylines

gsEdgesOn Turn on edges for gsn_add_polygon
gsFillColor Set fill color for gsn_add_polygon
gsLineColor Set line color for gsn_add_polyline
gsLineThicknessF Set line thickness for gsn_add_polyline
gsMarkerColor Set marker color for gsn_add_polymarker
gsMarkerIndex Set marker index for gsn_add_polymarker
gsMarkerSizeF Set marker size for gsn_add_polymarker
gsMarkerThicknessF Set marker thickness for gsn_add_polymarker

Resources for “gsn_panel” procedure

gsnPanelBoxes Turn on panel debug box outlines
gsnPanelDebug Turn on panel debug prints
gsnPanelFigureStrings Add figure strings to panel plots
gsnPanelLabelBar Turn on panel labelbar
gsnPanelMainString Set a main title for paneled plots
gsnPanelRowSpec Specify number of plots per row
gsnPanelScalePlotIndex Set the index of the plot to be used for scaling
gsnPanelXF Set location of left edge of paneled plots
gsnPanelYF Set location of top edge of paneled plots

Resources for generic text strings

txFont Set the font for gsn_add_text
txFontColor Set the font color for gsn_add_text
txFontHeightF Set the font height for gsn_add_text
txJust Set the justification for gsn_add_text

Special “gsn” resources recognized by many “gsn_csm_xxxx” functions

gsnAddCyclic Turn the addition of a longitude cyclic point on/off
gsnCenterString Set a string for a center subtitle
gsnDraw Turn draw on/off

gsnFrame	Turn frame on/off
gsnLeftString	Set a string for a left subtitle
gsnMaximize	Maximize plot in frame
gsnPolar	["NH" or "SH"] for gsn_csm_xxx_polar plots
gsnRightString	Set a string for a right subtitle
gsnSpreadColorEnd	Ending index for filled contours or vectors (OLD method)
gsnSpreadColorStart	Starting color index for filled contours or vectors (OLD method)

List of graphical functions mentioned in graphics lecture

http://www.ncl.ucar.edu/Document/Functions/graphics_routines.shtml

draw	Draw the given plot or object
frame	Force a frame (page) advance
gsn_add_polygon	Attach a polygon to the given plot
gsn_add_polyline	Attach a polyline to the given plot
gsn_add_polymarker	Attach a set of polymarkers to the given plot
gsn_add_shapefile_polylines	Attach shapefile polylines to map plot
gsn_add_text	Attach a text string to the given plot
gsn_csm_contour	Draw a contour plot
gsn_csm_contour_map	Draw contours over a map
gsn_csm_contour_map_polar	Draw contours over a polar stereographic map
gsn_csm_map	Draw a map
gsn_csm_vector	Draw a vector plot
gsn_csm_vector_map	Draw vectors over a map
gsn_csm_vector_map_polar	Draw vectors over a polar stereographic map
gsn_csm_xy	Draw an XY plot, given X and Y arrays
gsn_csm_y	Draw an XY plot using index values for X axis
gsn_define_colormap	Set a color map (OLD way of doing color)
gsn_draw_colormap	Draw the current color map
gsn_open_wks	Open a workstation (PS file, X11 windows, etc)
gsn_panel	Panel a set of given plots
NhlNewDashPattern	Add a dash pattern to the existing pattern table
NhlNewMarker	Add a marker to the existing marker table
overlay	Overlay one plot on another
read_colormap_file	Reads a color map into an RGBA (n x 4) array

WRF-specific functions

wrf_user_getvar	Retrieve the given variable from the WRF file
wrf_contour	Create contours given a WRF variable
wrf_map_overlays	Overlay a set of WRF plots on a map
wrf_overlays	Overlay a set of WRF plots on a non-map plot
wrf_vector	Create vectors given a WRF variable

Useful documentation links

NCL Home Page (NHP) <http://www.ncl.ucar.edu/>
Links for workshop
<http://www.ncl.ucar.edu/Training/Workshops/links.shtml>

NCL functions	NHP -> Functions
NCL resources	NHP -> Resources
Examples page	NHP -> Examples
FAQ	NHP -> Support -> FAQ
Graphics functions	NHP -> Functions -> Category -> Graphics Routines
WRF-NCL functions	NHP -> Functions -> Category -> WRF functions
Color table gallery	NHP -> Popular links -> Color Tables
Named colors	NHP -> Popular links -> Color Tables -> named colors
Font tables	NHP -> Popular links -> Font Tables
Predefined dash patterns	NHP -> Popular links -> Dash Pattern Table
Predefined markers	NHP -> Popular links -> Marker Table
Graphical template scripts	NHP -> Examples -> Templates
Scripts used in graphics lecture	NHP -> Support -> Workshops -> Example scripts used in graphics lectures
NCL User Guide (extensive)	NHP -> Support -> Manuals
Mini language manual	NHP -> Support -> Manuals
NCL Reference Manual (huge)	NHP -> Support -> Manuals
Webinars	NHP -> Support -> Webinars
Error messages	NHP -> Support -> Error Messages
Editor enhancements	NHP -> Support -> Editor enhancements
Email lists	NHP -> Support -> Email lists