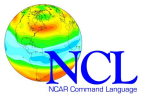


Basics III

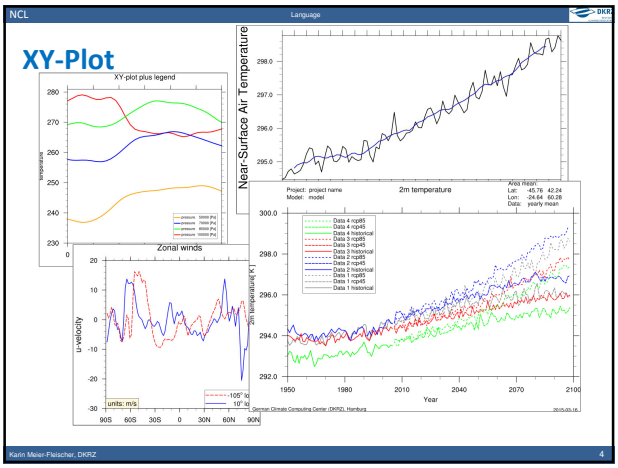
Graphics

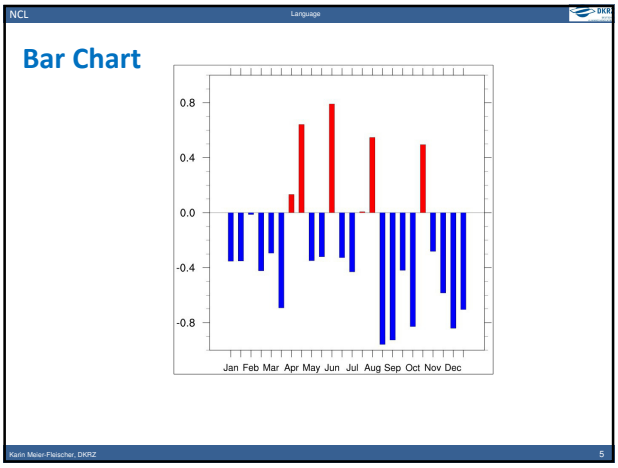
Content

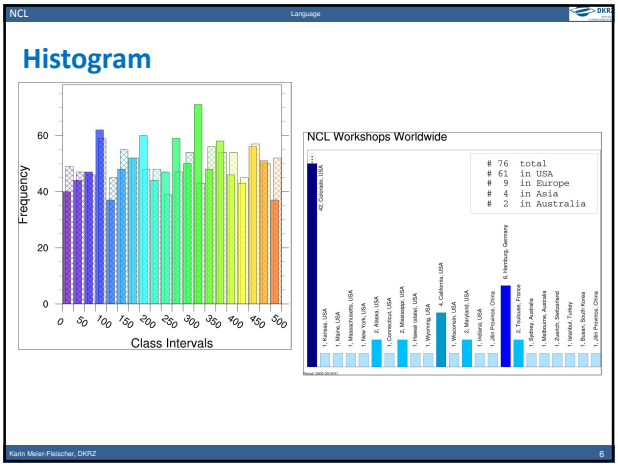
- **Overview of graphic types**
- **Examples web pages (NCL and DKRZ)**
- **Plot functions**
- **Plot resources**

NCL Visualization Types

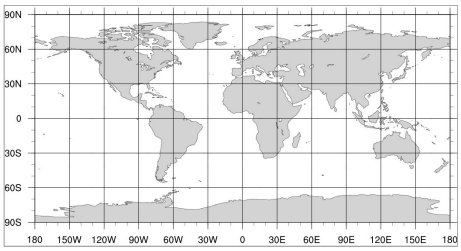
XY-plot	Wind rose
Bar chart	Scatter plot
Histogram	Box plot
Contour	Pie chart
Vector	Overlay
Map	Panel
Slice	Evans plot
Streamlines	Taylor diagram
Attach plots	Shapefiles
Wind Barbs	


NCL
Language
XY-Plot
XY-plot plus legend
Zonal winds
u-velocity
Near-Surface Air Temperature
2m temperature
Year
Karin Meier-Fleischer, DKRZ
4

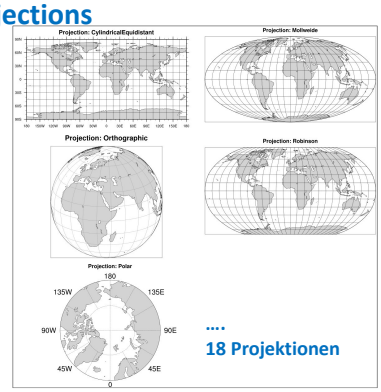

NCL
Language
Bar Chart
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
Karin Meier-Fleischer, DKRZ
5


NCL
Language
Histogram
Frequency
Class Intervals
NCL Workshops Worldwide
76 total
61 in USA
9 in Europe
4 in Asia
2 in Australia
Karin Meier-Fleischer, DKRZ
6

Maps



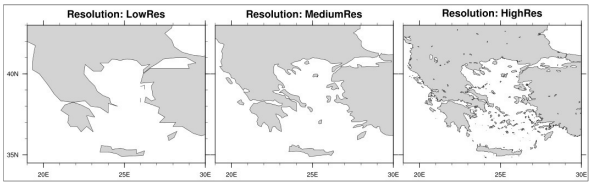
Map Projections



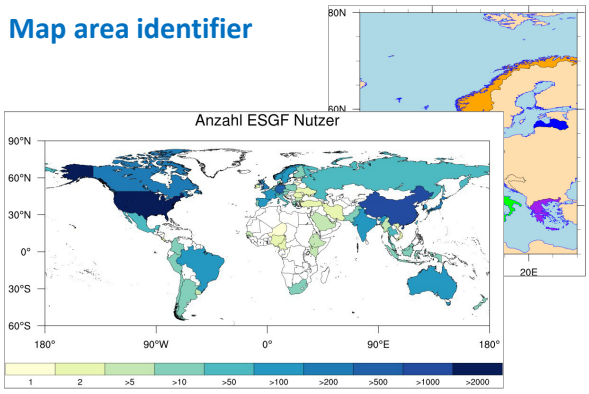
....

18 Projektionen

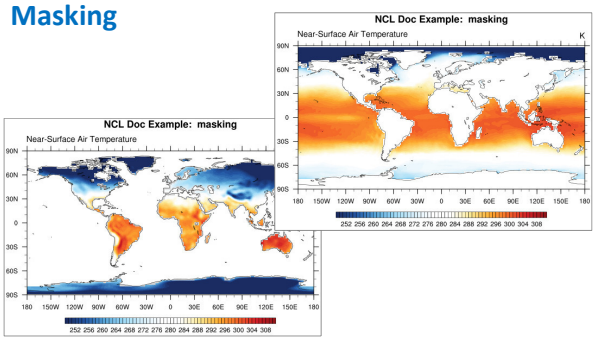
Map Resolutions



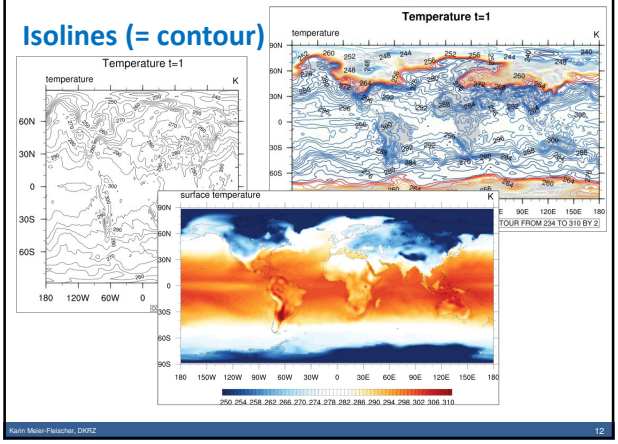
Map area identifier



Masking

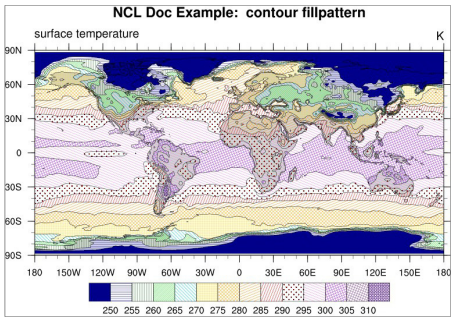


Isolines (= contour)



NCL Language

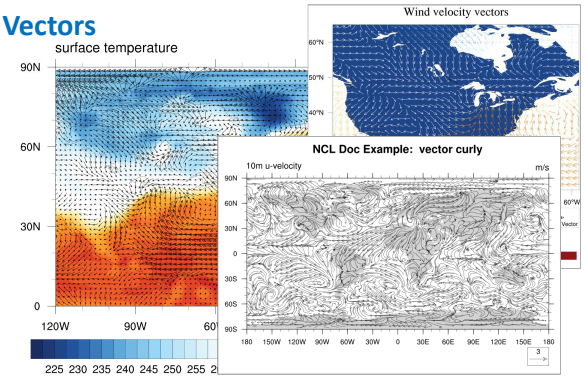
Isolines (= contour)



Karin Meier-Fleischer, DKRZ 13

NCL Language

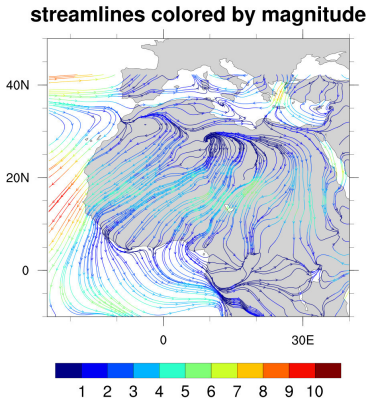
Vectors



Karin Meier-Fleischer, DKRZ 14

NCL Language

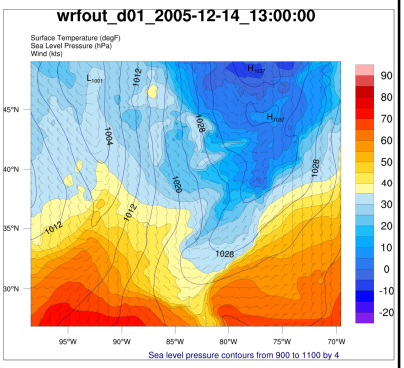
Streamlines



Karin Meier-Fleischer, DKRZ 15

NCL Language

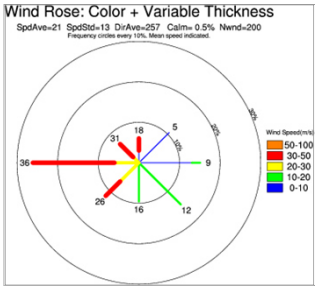
Wind Barbs



Karin Meier-Fleischer, DKRZ 16

NCL Language

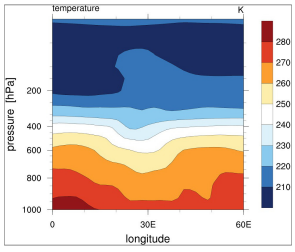
Wind Rose

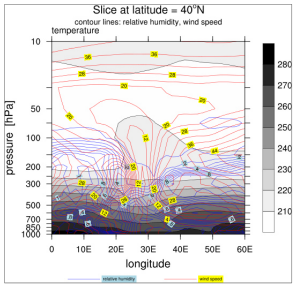


Karin Meier-Fleischer, DKRZ 17

NCL Language

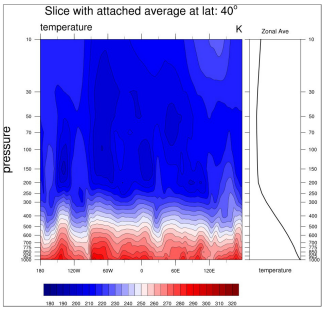
Slices



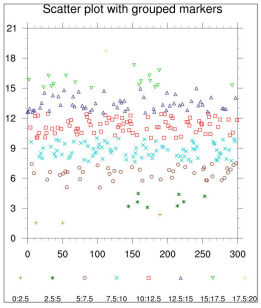


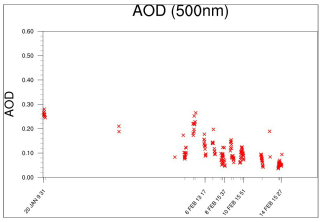
Karin Meier-Fleischer, DKRZ 18

Attached Plots

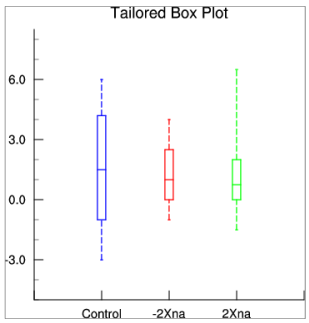


Scatter Plot

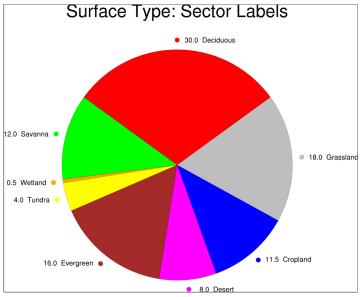




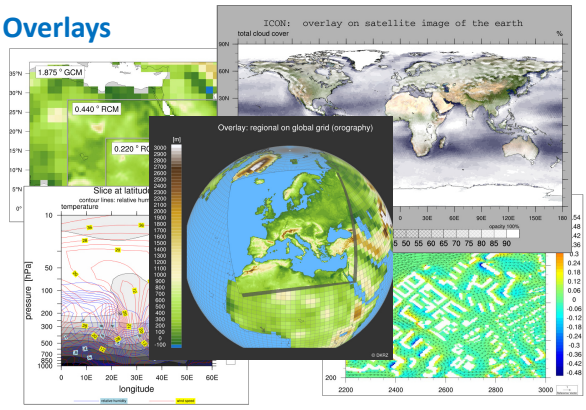
Box Plot



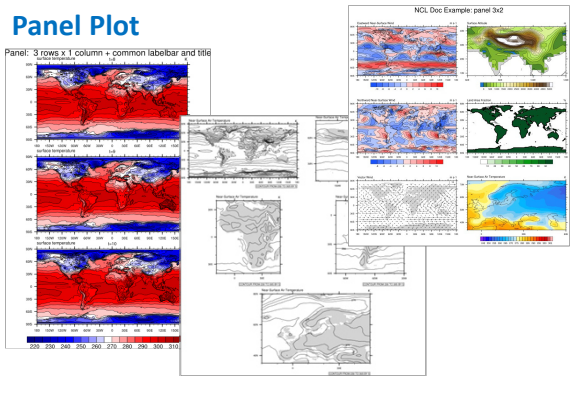
Pie Chart



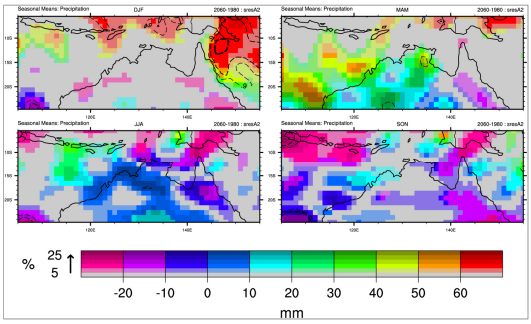
Overlays



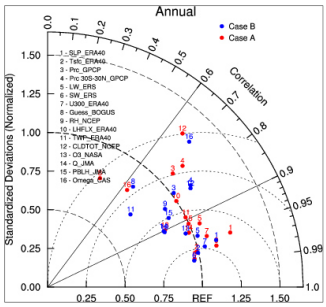
Panel Plot



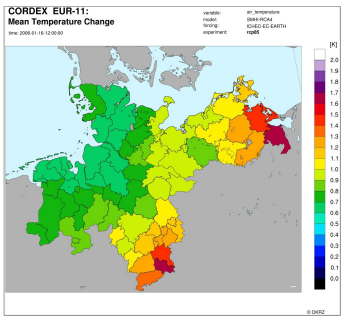
Evans Plot – Mapping with color and saturation



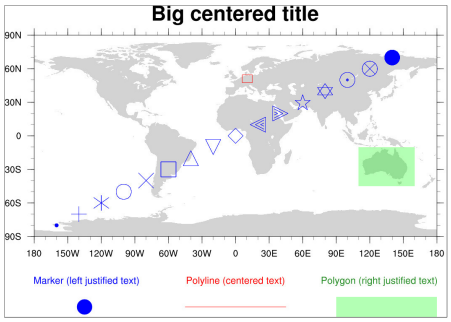
Taylor Diagram



Shapefiles

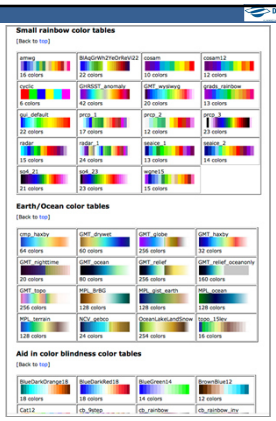


Markers, Polylines, Polygons



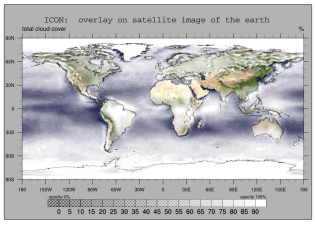
Colors

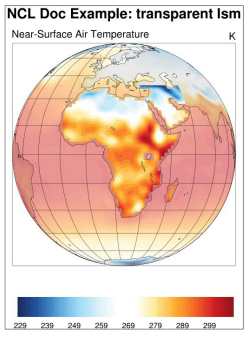
more than 200 color tables



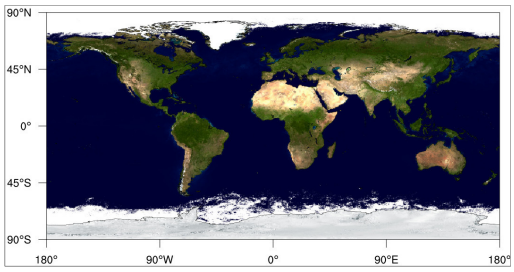
http://ncl.ucar.edu/Document/Graphics/color_table_gallery.shtml

Colors / Transparency



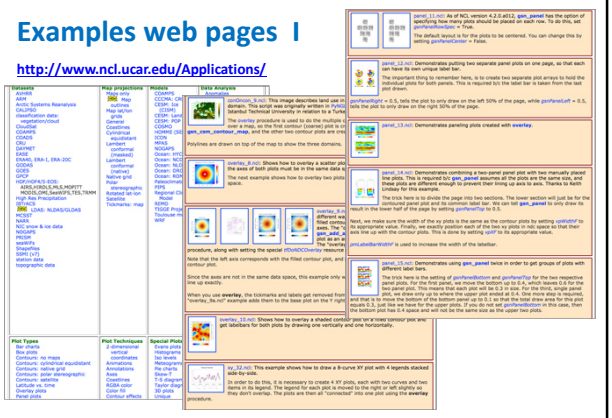


Textures - JPEG files



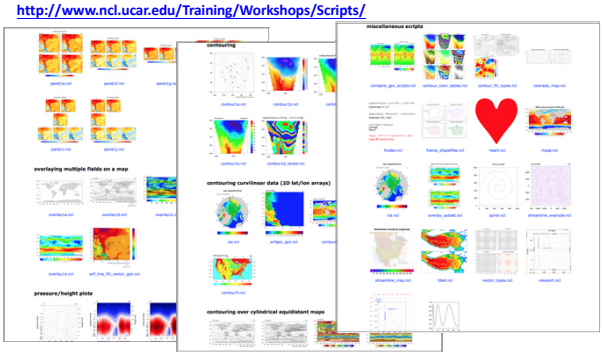
Examples web pages I

http://www.ncl.ucar.edu/Applications/



Examples web pages II

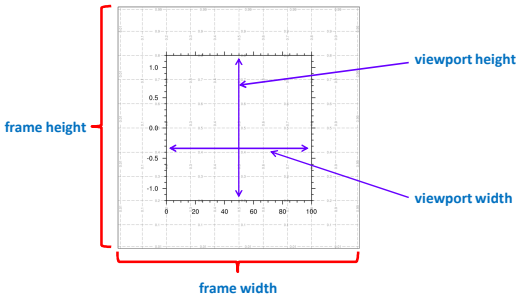
http://www.ncl.ucar.edu/Training/Workshops/Scripts/



NCL

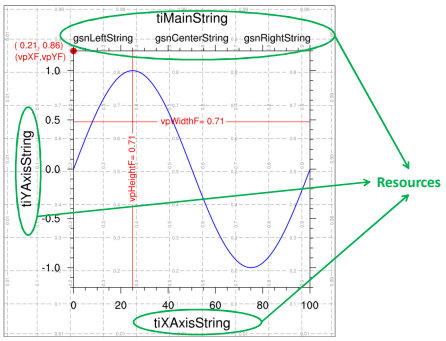
The frame

Frame size: x: 0.0 – 1.0 y: 0.0 – 1.0
Viewport size: ***variably***



NCL

The viewport



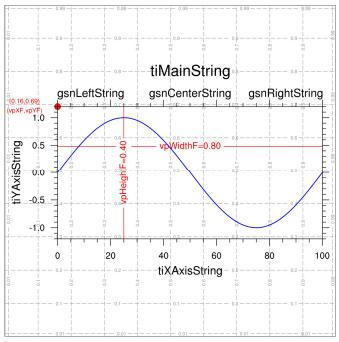
NCL

Control viewport

Using the viewport attributes:

vp resources

- ***vpWidthF***
- ***vpHeightF***
- ***vpXF***
- ***vpYF***

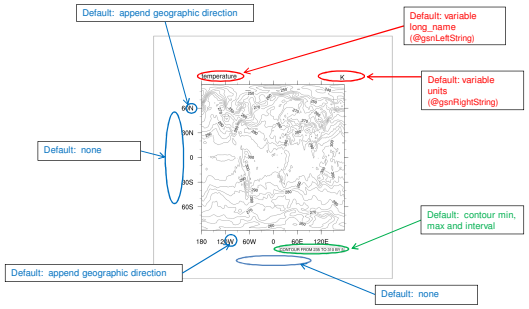


http://ncl.ucar.edu/Document/Graphics/Resources/vp.shtml

NCL

Geographical coordinates

Precondition: coordinate units like ***degrees_east*** or ***degrees_north***

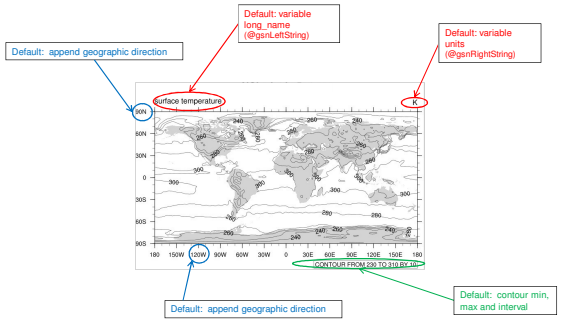


(Plot function: gsn_csm_contour)

NCL

Geographical coordinates with maps

Precondition: coordinate units for latitude/longitude like ***degrees_east*** or ***degrees_north***



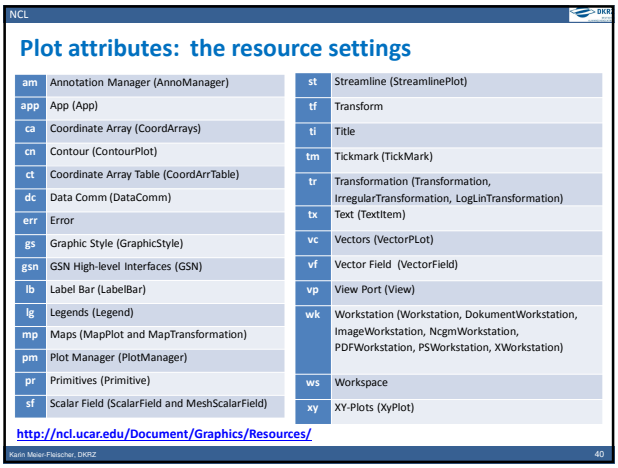
(Plot function: gsn_csm_contour_map)

NCL

Graphic functions

most used
gsn_csm_map, gsn_csm_map_polar, …
gsn_csm_xy, gsn_csm_xy2, …
gsn_csm_contour, gsn_csm_contour_map, …
gsn_csm_vector, gsn_csm_vector_map, …
gsn_csm_streamline, gsn_csm_streamline_map, …
gsn_csm_hov
gsn_histogram
gsn_create_labelbar, gsn_create_legend, gsn_create_text
gsn_add_polyline, gsn_add_polygon, gsn_add_polymarker
gsn_csm_lat_time,gsn_csm_time_lat, gsn_csm_pres_hgt, …
wrf_map, wrf_contour, wrf_vector, …
…

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


NCL
Plot attributes: the resource settings
am Annotation Manager (AnnoManager)
app App (App)
ca Coordinate Array (CoordArrays)
cn Contour (ContourPlot)
ct Coordinate Array Table (CoordArrTable)
dc Data Comm (DataComm)
err Error
gs Graphic Style (GraphicStyle)
gsn GSN High-level Interfaces (GSN)
lb Label Bar (LabelBar)
lg Legends (Legend)
mp Maps (MapPlot and MapTransformation)
pm Plot Manager (PlotManager)
pr Primitives (Primitive)
sf Scalar Field (ScalarField and MeshScalarField)
st Streamline (StreamlinePlot)
tf Transform
ti Title
tm Tickmark (TickMark)
tr Transformation (Transformation, IrregularTransformation, LogLinTransformation)
tx Text (TextItem)
vc Vectors (VectorPLot)
vf Vector Field (VectorField)
vp View Port (View)
wk Workstation (Workstation, DokumentWorkstation, ImageWorkstation, NcgmWorkstation, PDFWorkstation, PSWorkstation, XWorkstation)
ws Workspace
xy XY-Plots (XyPlot)
http://ncl.ucar.edu/Document/Graphics/Resources/
Karin Meier-Fleischer, DKRZ
40