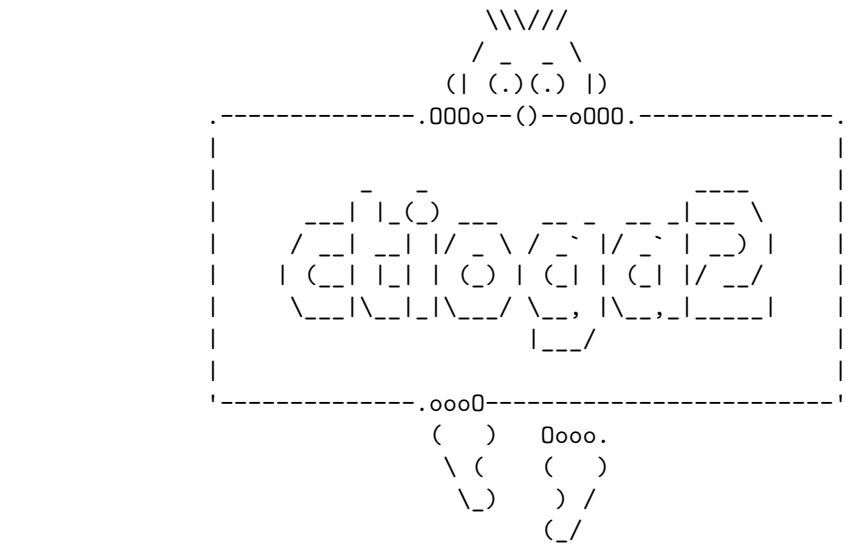

```
Codeblock class: ctioga2

    sudo apt-get install ctioga2
    http://ctioga2.sourceforge.net

    runs:
    > ctioga2 {im_opt} -f <fname>.ctioga2

    class->cmd
      ctioga2 -> ctioga2

Metadata options
    imagine.im_out: img,fcb
    imagine.im_log: 4
```

ctioga2

Parabolas, filling & intersection

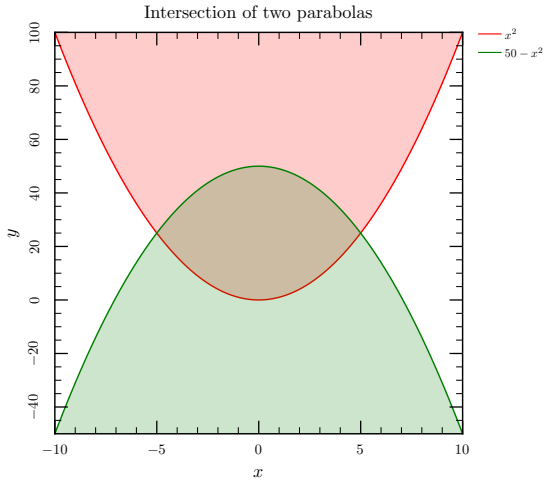

Figure 1: Created by ctioga2

```
```{.ctioga2 caption="Created by ctioga2" width="60%"}
title "Intersection of two parabolas"
math
plot x*x /fill=top /fill-transparency 0.8 /legend '$x^2$'
plot 50-x*x /fill=bottom /fill-transparency 0.8 /legend '$50 - x^2$'
```
```

a grid system

```
```{.ctioga2 caption="Created by ctioga2" width="60%"}
define-axis-style '.grid-non-left axis.left' /decoration=ticks /axis-label-text=' '
define-axis-style '.grid-non-bottom axis.bottom' /decoration=ticks /axis-label-text=' '
define-background-style '.grid-odd-column background' /background-color Blue!15
define-axis-style '.grid-2-0 axis' /decoration=None

setup-grid 3x2 /top=1mm /right=2mm /dy=2mm /dx=2mm
math


inset grid:next
  plot sin(x)
```
```

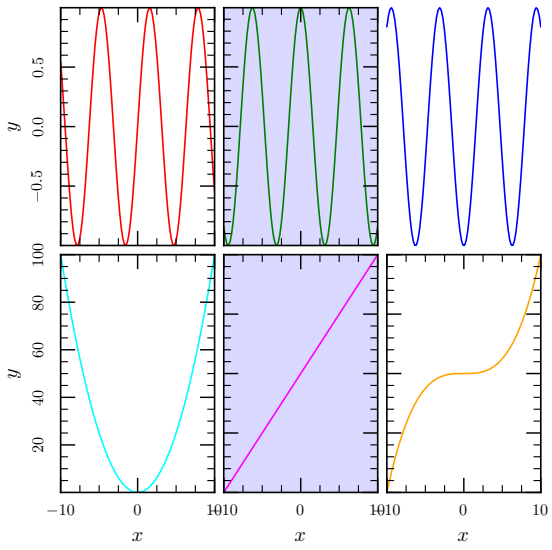

Figure 2: Created by ctioga2

```
next-inset grid:next
  plot cos(x)
next-inset grid:next
  plot -cos(x)
next-inset grid:next
  plot x**2
next-inset grid:next
  plot 10*x
next-inset grid:next
  plot 0.1*x**3
end
```

plotting data

The data file's name `../dta/cr2-ex01.dat` is relative to where the fenced code block contents was saved, usually in ./pd-images although you can change that via the `im_dir` option.

```
```{.ctioga2 caption="Created by ctioga2" width="60%"}
draw-line -15,0 15,0 /style=Dashes /color=Gray
plot ../dta/ct2-ex01.dat
plot ../dta/ct2-ex01.dat@1:3
title '\centering This is a very long title about sine waves'  \
```
```

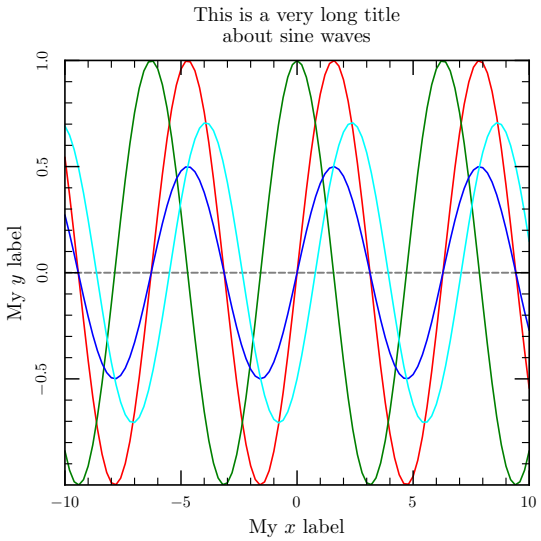

Figure 3: Created by ctioga2

```
      /text-width=5cm /shift=1.3
xlabel 'My $x$ label'
ylabel 'My $y$ label'
plot ../dta/ct2-ex01.dat@'$1:$2*0.5'
plot ../dta/ct2-ex01.dat@'$1:0.5*($2-$3)'
```

Documentation

ctioga2 -h

```
Plots
        --plot DATASET      Plots the given datasets
                              options: /as /bypass-transforms /class /clipped
                                       /color /color-map /contour-conrec
                                       /contour-minor-number
                                       /contour-minor-scale /contour-minor-style
                                       /contour-number /depth /error-bar-color
                                       /error-bar-line-width /fill /fill-color
                                       /fill-pattern /fill-transparency /id
                                       /ignore-hooks /legend /line-cap
                                       /line-style /line-width /marker
                                       /marker-angle /marker-color
                                       /marker-color-map /marker-fill-color
                                       /marker-fill-color-map /marker-line-color
                                       /marker-line-color-map /marker-line-width
                                       /marker-min-scale /marker-scale /name
                                       /path-style /region-side /split-on-nan
                                       /where /xaxis /yaxis /zaxis
    -p, --plot-last         Plots the last dataset pushed onto the stack
                              options: /class /clipped /color /color-map
                                       /contour-conrec /contour-minor-number
                                       /contour-minor-scale /contour-minor-style
                                       /contour-number /depth /error-bar-color
                                       /error-bar-line-width /fill /fill-color
                                       /fill-pattern /fill-transparency /id
                                       /legend /line-cap /line-style /line-width
                                       /marker /marker-angle /marker-color
                                       /marker-color-map /marker-fill-color
                                       /marker-fill-color-map /marker-line-color
                                       /marker-line-color-map /marker-line-width
                                       /marker-min-scale /marker-scale
                                       /path-style /region-side /split-on-nan
                                       /which /xaxis /yaxis /zaxis

Curves styles
        --[no-]clipped      Sets the clipped for subsequent curves
    -c, --color COLOR-OR-FALSE-OR-AUTO
                            Sets the line color for subsequent curves
        --color-map COLORMAP-OR-AUTO
                            Sets the color map for subsequent curves
        --color-set COLOR-OR-FALSE-SET
```

```
                    Chooses a set for the line color of subsequent
                    curves
--[no-]contour-conrec
                    Sets the use CONREC for contouring for subsequent
                    curves
--contour-minor-number INTEGER-OR-AUTO
                    Sets the number of minor level lines between major
                    ones (approx) for subsequent curves
--contour-minor-scale FLOAT-OR-AUTO
                    Sets the relative scale of minor level lines for
                    subsequent curves
--contour-minor-style LINE-STYLE-OR-AUTO
                    Sets the minor ticks line style for subsequent
                    curves
--contour-number INTEGER-OR-AUTO
                    Sets the overall number of level lines for
                    subsequent curves
--depth INTEGER-OR-AUTO
                    Sets the depth for subsequent curves
--error-bar-color COLOR-OR-FALSE-OR-AUTO
                    Sets the error bar color for subsequent curves
--error-bar-color-set COLOR-OR-FALSE-SET
                    Chooses a set for the error bar color of subsequent
                    curves
--error-bar-line-width FLOAT-OR-AUTO
                    Sets the error bar line width for subsequent curves
--error-bar-line-width-set FLOAT-SET
                    Chooses a set for the error bar line width of
                    subsequent curves
--fill FILL-UNTIL-OR-AUTO
                    Sets the Fill until for subsequent curves
--fill-color COLOR-OR-AUTO
                    Sets the fill color for subsequent curves
--fill-color-set COLOR-SET
                    Chooses a set for the fill color of subsequent
                    curves
--fill-pattern FILL-PATTERN-OR-AUTO
                    Sets the fill pattern for subsequent curves
--fill-set FILL-UNTIL-SET
                    Chooses a set for the Fill until of subsequent
                    curves
--fill-transparency FLOAT-OR-AUTO
                    Sets the fill transparency for subsequent curves
--fill-transparency-set FLOAT-SET
                    Chooses a set for the fill transparency of
                    subsequent curves
```

```
    --line-cap LINE-CAP-OR-AUTO
                        Sets the line cap for subsequent curves
    --line-style LINE-STYLE-OR-AUTO
                        Sets the line style for subsequent curves
    --line-style-set LINE-STYLE-SET
                        Chooses a set for the line style of subsequent
                        curves
    --line-width FLOAT-OR-AUTO
                        Sets the line width for subsequent curves
    --line-width-set FLOAT-SET
                        Chooses a set for the line width of subsequent
                        curves
-m, --marker MARKER-OR-AUTO
                        Sets the marker for subsequent curves
    --marker-angle FLOAT-OR-AUTO
                        Sets the marker angle for subsequent curves
    --marker-color COLOR-OR-FALSE-OR-AUTO
                        Sets the marker color for subsequent curves
    --marker-color-map COLORMAP-OR-AUTO
                        Sets the color map for markers for subsequent curves
    --marker-color-set COLOR-OR-FALSE-SET
                        Chooses a set for the marker color of subsequent
                        curves
    --marker-fill-color COLOR-OR-FALSE-OR-AUTO
                        Sets the marker fill color for subsequent curves
    --marker-fill-color-map COLORMAP-OR-AUTO
                        Sets the color map for the lines of markers for
                        subsequent curves
    --marker-fill-color-set COLOR-OR-FALSE-SET
                        Chooses a set for the marker fill color of
                        subsequent curves
    --marker-line-color COLOR-OR-FALSE-OR-AUTO
                        Sets the marker stroke color for subsequent curves
    --marker-line-color-map COLORMAP-OR-AUTO
                        Sets the color map for the lines of markers for
                        subsequent curves
    --marker-line-color-set COLOR-OR-FALSE-SET
                        Chooses a set for the marker stroke color of
                        subsequent curves
    --marker-line-width FLOAT-OR-AUTO
                        Sets the marker line width for subsequent curves
    --marker-min-scale FLOAT-OR-FALSE-OR-AUTO
                        Sets the marker scale for subsequent curves
    --marker-scale FLOAT-OR-AUTO
                        Sets the marker scale for subsequent curves
    --marker-scale-set FLOAT-SET
```

```
                        Chooses a set for the marker scale of subsequent
                        curves
        --marker-set MARKER-SET
                        Chooses a set for the marker of subsequent curves
        --path-style TEXT-OR-AUTO
                        Sets the path style for subsequent curves
        --path-style-set TEXT-SET
                        Chooses a set for the path style of subsequent
                        curves
        --region-side REGION-SIDE-OR-AUTO
                        Sets the region side for subsequent curves
        --region-side-set REGION-SIDE-SET
                        Chooses a set for the region side of subsequent
                        curves
        --reuse-style OBJECT
                        Reuse the style of a previous curve
        --skip          Skips next curve style
                          options: /number
        --[no-]split-on-nan Sets the split on NaN for subsequent curves
        --zaxis TEXT-OR-AUTO
                        Sets the name for the Z axis for subsequent curves

Legends
        --[no-]auto-legend  Automatically give legends to datasets
    -l, --legend TEXT       Sets the legend for the next dataset
        --legend-inside ALIGNED-POINT
                        Draw legends inside the current plot
                          options: /class /dy /frame-cap /frame-color
                                   /frame-fill-color /frame-fill-pattern
                                   /frame-fill-transparency /frame-padding
                                   /frame-radius /frame-shape /frame-style
                                   /frame-width /id /picto-height
                                   /picto-to-text /picto-width /scale
                                   /symbol-scale /text-scale /vpadding
        --legend-line TEXT  Adds a pure text line to the legend
                          options: /align /alignment /angle /color /halign
                                   /justification /position /scale /shift
                                   /text-align /text-width /valign
        --legend-multicol   Lay out legends in several columns
                          options: /columns /dx
        --legend-multicol-end
                        End of multicolumn legends
        --legend-style      Set the style of the legends
                          options: /class /dy /frame-cap /frame-color
                                   /frame-fill-color /frame-fill-pattern
                                   /frame-fill-transparency /frame-padding
```

```
                                        /frame-radius /frame-shape /frame-style
                                        /frame-width /id /picto-height
                                        /picto-to-text /picto-width /scale
                                        /symbol-scale /text-scale /vpadding

Switch between different kinds of plots
        --contour           select contour plots
        --histogram         select histogram plots
                              options: /compute-dx /cumulative /gap /intra-sep
        --xy-parametric     select XY parametric plots
                              options: /z1 /z2 /z3 /z4
        --xy-plot           select XY plots
        --xyz-map           select XYZ maps

Plot coordinates
        --margin FLOAT      Leaves a margin around data points
        --xfact FLOAT       Alias for xscale
        --[no-]xlog         Use log scale for X
        --xoffset FLOAT     Offset X data
        --xrange PARTIAL-FLOAT-RANGE
                            Sets the X range
        --xscale FLOAT      Scale X data
        --yfact FLOAT       Alias for yscale
        --[no-]ylog         Use log scale for Y
        --yoffset FLOAT     Offset Y data
        --yrange PARTIAL-FLOAT-RANGE
                            Sets the Y range
        --yscale FLOAT      Scale Y data

Graphics primitives
        --draw DRAWING-SPEC Draws graphics primitives
        --draw-arrow POINT POINT
                            Draws arrow
                              options: /cap /class /clipped /color /depth
                                       /head-angle /head-color /head-marker
                                       /head-scale /id /line-style /line-width
                                       /style /tail-angle /tail-color
                                       /tail-marker /tail-scale /width
        --draw-box POINT POINT
                            Draws box
                              options: /cap /class /clipped /color /depth
                                       /fill-color /fill-transparency
                                       /fill-color /fill-pattern
                                       /fill-transparency /id /radius /shape
                                       /style /width
        --draw-color-list POINT DIMENSION
```

```
                    Draws the list of all named colors
                      options: /class /clipped /columns /depth /id
                               /padding /scale
--draw-color-set-list POINT DIMENSION
                    Draws the list of all color sets
                      options: /class /clipped /depth /exclude /id
                               /include /scale
--draw-contour LEVEL
                    Draws contour
                      options: /class /clipped /closed /color /depth /id
                               /style /width
--draw-image FILE TOP-LEFT BOTTOM-RIGHT
                    Draws image
                      options: /aspect-ratio /auto-rotate /class
                               /clipped /depth /id /transparency
--draw-legend-pictogram POINT OBJECT
                    Draws legend-pictogram
                      options: /class /clipped /depth /id /width
--draw-line POINT POINT
                    Draws line
                      options: /cap /class /clipped /color /depth
                               /head-angle /head-color /head-marker
                               /head-scale /id /line-style /line-width
                               /style /tail-angle /tail-color
                               /tail-marker /tail-scale /width
--draw-line-style-list POINT DIMENSION
                    Draws the list of all named line styles
                      options: /class /clipped /columns /depth /id
                               /padding /scale
--draw-marker POINT MARKER
                    Draws marker
                      options: /alignment /angle /class /clipped /color
                               /depth /fill-color /horizontal-scale /id
                               /justification /scale /stroke-color
                               /stroke-width /vertical-scale
--draw-marker-list POINT DIMENSION
                    Draws the list of all named markers
                      options: /class /clipped /columns /depth /id
                               /padding /scale
--draw-marker-set-list POINT DIMENSION
                    Draws the list of all marker sets
                      options: /class /clipped /depth /exclude /id
                               /include /scale
--draw-oriented-line POINT DIMENSION
                    Draws oriented-line
                      options: /angle /cap /class /clipped /color /depth
```

```
                                    /head-angle /head-color /head-marker
                                    /head-scale /id /origin /style
                                    /tail-angle /tail-color /tail-marker
                                    /tail-scale /width
        --draw-string-marker POINT TEXT
                            Draws marker
                              options: /alignment /angle /class /clipped /color
                                       /depth /fill-color /font
                                       /horizontal-scale /id /justification
                                       /scale /stroke-color /stroke-width
                                       /vertical-scale
        --draw-tangent DATA-POINT
                            Draws tangent
                              options: /cap /class /clipped /color /depth
                                       /head-angle /head-color /head-marker
                                       /head-scale /id /line-style /line-width
                                       /nbavg /style /tail-angle /tail-color
                                       /tail-marker /tail-scale /width /xextent
                                       /xfrom /xto /yextent /yfrom /yto
        --draw-text POINT TEXT
                            Draws text
                              options: /alignment /angle /class /clipped /color
                                       /depth /font /halign /id /justification
                                       /position /scale /shift /text-align
                                       /text-width /valign

The 'direct' backend: Direct format
        --direct            Selects the '{backend: direct}' backend

The 'gnuplot' backend: Gnuplot files
        --gnuplot           Selects the '{backend: gnuplot}' backend
                              options: /range /samples /vars
        --gnuplot-range RANGE
                            Set the Plotting X range parameter of backend
                            'gnuplot'
        --gnuplot-samples SAMPLES
                            Set the The number of samples parameter of backend
                            'gnuplot'
        --gnuplot-vars VARS Set the Variable overrides parameter of backend
                            'gnuplot'

The 'math' backend: Mathematical functions
        --math              Selects the '{backend: math}' backend
                              options: /log /samples /trange /xrange
        --[no-]math-log     Set the Logarithmic scale parameter of backend
                            'math'
```

```
        --math-samples SAMPLES
                            Set the Samples parameter of backend 'math'
        --math-trange TRANGE
                            Set the T Range parameter of backend 'math'
        --math-xrange XRANGE
                            Set the X Range parameter of backend 'math'

The 'smath' backend: Mathematical functions (multi-D)
        --smath             Selects the '{backend: smath}' backend
                              options: /samples /urange /usamples /vrange
                                       /vsamples
        --smath-samples SAMPLES
                            Set the Sample number parameter of backend 'smath'
        --smath-urange URANGE
                            Set the U Range parameter of backend 'smath'
        --smath-usamples USAMPLES
                            Set the U samples parameter of backend 'smath'
        --smath-vrange VRANGE
                            Set the V Range parameter of backend 'smath'
        --smath-vsamples VSAMPLES
                            Set the V samples parameter of backend 'smath'

The 'text' backend: Text format
        --csv               reads CSV files
        --text              Selects the '{backend: text}' backend
                              options: /col /header-line /parameters /separator
                                       /skip /split
        --text-col COL      Set the Default column specification parameter of
                            backend 'text'
        --text-header-line HEADER-LINE
                            Set the Header line regular expression parameter of
                            backend 'text'
        --text-parameters PARAMETERS
                            Set the Parameters parsing parameter of backend
                            'text'
        --text-separator SEPARATOR
                            Set the Data columns separator parameter of backend
                            'text'
        --text-skip SKIP    Set the Skip lines parameter of backend 'text'
        --[no-]text-split   Set the Split into subsets parameter of backend
                            'text'

LaTeX
        --preamble TEXT     Adds a string to the LaTeX preamble
        --set-global-font   Set global font details
                              options: /size
```

```
        --use TEXT          Includes a LaTeX package
                              options: /arguments
        --utf8              Uses UTF-8 in strings

Subplots and assimilated
        --end               Leaves the current subobject
        --frame-margins FRAME-MARGINS
                            Sets the margins of the current plot
                              options: /bottom /left /right /top
        --gradient COLOR COLOR
                            Use a color gradient for all curves until --end
                              options: /class /id
        --hide OBJECTS      Hides named objects
                              options: /show
        --inset BOX         Begins a new inset
                              options: /class /id
        --next-inset BOX    Ends the previous inset and begins a new one
                              options: /class /id
        --padding DIMENSION Sets the padding for the current plot
        --plot-scale FLOAT  Rescales the current (sub)plot
                              options: /what
        --region            Starts a region with filling between curves
                              options: /class /color /id /pattern
                                       /reversed-color /reversed-pattern
                                       /reversed-transparency /transparency
        --reopen OBJECT     Reopens a previously finished object
        --root-plot         Begin root plot
                              options: /class /id
        --setup-grid TEXT   Setup grid for insets
                              options: /bottom /dx /dy /left /right /top
        --text-adjust-mode TEXT-ADJUST-MODE
                            Enables or disables the automatic detection of text
                            size

Axes and labels
        --axis-style AXIS   Sets the style of the given axis
                              options: /also-axes /axis-label-alignment
                                       /axis-label-angle /axis-label-color
                                       /axis-label-halign
                                       /axis-label-justification /axis-label-loc
                                       /axis-label-position /axis-label-scale
                                       /axis-label-shift /axis-label-text
                                       /axis-label-text-align
                                       /axis-label-text-width /axis-label-valign
                                       /background-lines-cap
                                       /background-lines-color
```

```
                                /background-lines-style
                                /background-lines-width /decoration
                                /line-width /location /log
                                /major-tick-length /major-tick-width
                                /minor-tick-length /minor-tick-width
                                /offset /stroke-color
                                /tick-label-alignment /tick-label-angle
                                /tick-label-color /tick-label-halign
                                /tick-label-justification
                                /tick-label-position /tick-label-scale
                                /tick-label-shift /tick-label-text-align
                                /tick-label-text-width /tick-label-valign
                                /ticks-format /ticks-format-last
                                /ticks-labels /ticks-major
                                /ticks-major-delta /ticks-major-number
                                /ticks-major-sep /ticks-minor
                                /ticks-minor-delta /ticks-minor-number
                                /ticks-minor-sep-min /ticks-side
                                /transform
--background-grid COLOR-OR-FALSE
                    Sets the color of the background lines
                      options: /cap /style /width
--background-lines AXIS COLOR-OR-FALSE
                    Sets the color of the background lines
                      options: /cap /style /width
--bottom AXIS-DECORATION
                    Sets the type of the bottom axis
                      options: /axis-label-alignment /axis-label-angle
                                /axis-label-color /axis-label-halign
                                /axis-label-justification /axis-label-loc
                                /axis-label-position /axis-label-scale
                                /axis-label-shift /axis-label-text
                                /axis-label-text-align
                                /axis-label-text-width /axis-label-valign
                                /background-lines-cap
                                /background-lines-color
                                /background-lines-style
                                /background-lines-width /line-width
                                /location /log /major-tick-length
                                /major-tick-width /minor-tick-length
                                /minor-tick-width /offset /stroke-color
                                /tick-label-alignment /tick-label-angle
                                /tick-label-color /tick-label-halign
                                /tick-label-justification
                                /tick-label-position /tick-label-scale
                                /tick-label-shift /tick-label-text-align
```

```
                                /tick-label-text-width /tick-label-valign
                                /ticks-format /ticks-format-last
                                /ticks-labels /ticks-major
                                /ticks-major-delta /ticks-major-number
                                /ticks-major-sep /ticks-minor
                                /ticks-minor-delta /ticks-minor-number
                                /ticks-minor-sep-min /ticks-side
                                /transform
--clear-axes        Clear all axes
--drawing-frame     Setup a drawing frame
                      options: /units
--label-style LABEL Sets the style of the given label
                      options: /align /alignment /angle /color /halign
                                /justification /loc /position /scale
                                /shift /text /text-align /text-width
                                /valign
--left AXIS-DECORATION
                    Sets the type of the left axis
                      options: /axis-label-alignment /axis-label-angle
                                /axis-label-color /axis-label-halign
                                /axis-label-justification /axis-label-loc
                                /axis-label-position /axis-label-scale
                                /axis-label-shift /axis-label-text
                                /axis-label-text-align
                                /axis-label-text-width /axis-label-valign
                                /background-lines-cap
                                /background-lines-color
                                /background-lines-style
                                /background-lines-width /line-width
                                /location /log /major-tick-length
                                /major-tick-width /minor-tick-length
                                /minor-tick-width /offset /stroke-color
                                /tick-label-alignment /tick-label-angle
                                /tick-label-color /tick-label-halign
                                /tick-label-justification
                                /tick-label-position /tick-label-scale
                                /tick-label-shift /tick-label-text-align
                                /tick-label-text-width /tick-label-valign
                                /ticks-format /ticks-format-last
                                /ticks-labels /ticks-major
                                /ticks-major-delta /ticks-major-number
                                /ticks-major-sep /ticks-minor
                                /ticks-minor-delta /ticks-minor-number
                                /ticks-minor-sep-min /ticks-side
                                /transform
--new-zaxis TEXT    Creates a Z axis
```

```
                          options: /axis-label-alignment /axis-label-angle
                                   /axis-label-color /axis-label-halign
                                   /axis-label-justification /axis-label-loc
                                   /axis-label-position /axis-label-scale
                                   /axis-label-shift /axis-label-text
                                   /axis-label-text-align
                                   /axis-label-text-width /axis-label-valign
                                   /background-lines-cap
                                   /background-lines-color
                                   /background-lines-style
                                   /background-lines-width /bar-shift
                                   /bar-size /bounds /class /decoration /id
                                   /line-width /location /log
                                   /major-tick-length /major-tick-width
                                   /minor-tick-length /minor-tick-width
                                   /offset /padding /stroke-color
                                   /tick-label-alignment /tick-label-angle
                                   /tick-label-color /tick-label-halign
                                   /tick-label-justification
                                   /tick-label-position /tick-label-scale
                                   /tick-label-shift /tick-label-text-align
                                   /tick-label-text-width /tick-label-valign
                                   /ticks-format /ticks-format-last
                                   /ticks-labels /ticks-major
                                   /ticks-major-delta /ticks-major-number
                                   /ticks-major-sep /ticks-minor
                                   /ticks-minor-delta /ticks-minor-number
                                   /ticks-minor-sep-min /ticks-side
                                   /transform
--no-title          Disables title for the plot
--no-xlabel         Disables X label for the plot
--no-ylabel         Disables Y label for the plot
--right AXIS-DECORATION
                    Sets the type of the right axis
                      options: /axis-label-alignment /axis-label-angle
                               /axis-label-color /axis-label-halign
                               /axis-label-justification /axis-label-loc
                               /axis-label-position /axis-label-scale
                               /axis-label-shift /axis-label-text
                               /axis-label-text-align
                               /axis-label-text-width /axis-label-valign
                               /background-lines-cap
                               /background-lines-color
                               /background-lines-style
                               /background-lines-width /line-width
                               /location /log /major-tick-length
```

```
                                        /major-tick-width /minor-tick-length
                                        /minor-tick-width /offset /stroke-color
                                        /tick-label-alignment /tick-label-angle
                                        /tick-label-color /tick-label-halign
                                        /tick-label-justification
                                        /tick-label-position /tick-label-scale
                                        /tick-label-shift /tick-label-text-align
                                        /tick-label-text-width /tick-label-valign
                                        /ticks-format /ticks-format-last
                                        /ticks-labels /ticks-major
                                        /ticks-major-delta /ticks-major-number
                                        /ticks-major-sep /ticks-minor
                                        /ticks-minor-delta /ticks-minor-number
                                        /ticks-minor-sep-min /ticks-side
                                        /transform
    --ticks AXIS        Sets the ticks of the given axis
                          options: /format /format-last /labels /major
                                   /major-delta /major-number /major-sep
                                   /minor /minor-delta /minor-number
                                   /minor-sep-min
-t, --title TEXT        Sets the title of the plot
                          options: /align /alignment /angle /color /halign
                                   /justification /loc /position /scale
                                   /shift /text-align /text-width /valign
    --top AXIS-DECORATION
                        Sets the type of the top axis
                          options: /axis-label-alignment /axis-label-angle
                                   /axis-label-color /axis-label-halign
                                   /axis-label-justification /axis-label-loc
                                   /axis-label-position /axis-label-scale
                                   /axis-label-shift /axis-label-text
                                   /axis-label-text-align
                                   /axis-label-text-width /axis-label-valign
                                   /background-lines-cap
                                   /background-lines-color
                                   /background-lines-style
                                   /background-lines-width /line-width
                                   /location /log /major-tick-length
                                   /major-tick-width /minor-tick-length
                                   /minor-tick-width /offset /stroke-color
                                   /tick-label-alignment /tick-label-angle
                                   /tick-label-color /tick-label-halign
                                   /tick-label-justification
                                   /tick-label-position /tick-label-scale
                                   /tick-label-shift /tick-label-text-align
                                   /tick-label-text-width /tick-label-valign
```

```
                                        /ticks-format /ticks-format-last
                                        /ticks-labels /ticks-major
                                        /ticks-major-delta /ticks-major-number
                                        /ticks-major-sep /ticks-minor
                                        /ticks-minor-delta /ticks-minor-number
                                        /ticks-minor-sep-min /ticks-side
                                        /transform
        --x2                Switches to top axis for subsequent curves
        --xaxis AXIS        Sets default X axis for the plot
    -x, --xlabel TEXT       Sets the X label of the plot
                              options: /align /alignment /angle /color /halign
                                       /justification /loc /position /scale
                                       /shift /text-align /text-width /valign
        --y2                Switches to right axis for subsequent curves
        --yaxis AXIS        Sets default Y axis for the plot
    -y, --ylabel TEXT       Sets the Y label of the plot
                              options: /align /alignment /angle /color /halign
                                       /justification /loc /position /scale
                                       /shift /text-align /text-width /valign

Background
        --background COLOR-OR-FALSE
                            Background color for the plot
        --watermark TEXT    Sets a watermark for the current plot
                              options: /alignment /angle /color /fill-color
                                       /font /horizontal-scale /justification
                                       /scale /stroke-color /stroke-width
                                       /vertical-scale

Default styles
        --define-arrow-style TEXT
                            Sets the default style for the given arrows.
                              options: /cap /color /head-angle /head-color
                                       /head-marker /head-scale /style
                                       /tail-angle /tail-color /tail-marker
                                       /tail-scale /width
        --define-axis-style TEXT
                            Sets the default style for the given axis.
                              options: /axis-label-alignment /axis-label-angle
                                       /axis-label-color /axis-label-halign
                                       /axis-label-justification /axis-label-loc
                                       /axis-label-position /axis-label-scale
                                       /axis-label-shift /axis-label-text
                                       /axis-label-text-align
                                       /axis-label-text-width /axis-label-valign
                                       /background-lines-cap
```

```
                                /background-lines-color
                                /background-lines-style
                                /background-lines-width /decoration
                                /line-width /location /log
                                /major-tick-length /major-tick-width
                                /minor-tick-length /minor-tick-width
                                /offset /stroke-color
                                /tick-label-alignment /tick-label-angle
                                /tick-label-color /tick-label-halign
                                /tick-label-justification
                                /tick-label-position /tick-label-scale
                                /tick-label-shift /tick-label-text-align
                                /tick-label-text-width /tick-label-valign
                                /ticks-format /ticks-format-last
                                /ticks-labels /ticks-major
                                /ticks-major-delta /ticks-major-number
                                /ticks-major-sep /ticks-minor
                                /ticks-minor-delta /ticks-minor-number
                                /ticks-minor-sep-min /ticks-side
                                /transform
--define-background-style TEXT
                    Sets the default style for the given plot
                    background.
                      options: /background-color /watermark
                                /watermark-alignment /watermark-angle
                                /watermark-color /watermark-fill-color
                                /watermark-font
                                /watermark-horizontal-scale
                                /watermark-justification /watermark-scale
                                /watermark-stroke-color
                                /watermark-stroke-width
                                /watermark-vertical-scale
--define-box-style TEXT
                    Sets the default style for the given boxes.
                      options: /cap /color /fill-color /fill-pattern
                                /fill-transparency /radius /shape /style
                                /width
--define-curve-style TEXT
                    Sets the default style for the given plot
                    background.
                      options: /clipped /color /color-map
                                /contour-conrec /contour-minor-number
                                /contour-minor-scale /contour-minor-style
                                /contour-minor-width /contour-number
                                /contour-use-naturals /depth
                                /error-bar-color /error-bar-line-cap
```

```
                                /error-bar-line-color
                                /error-bar-line-style
                                /error-bar-line-width /fill
                                /fill-close-type /fill-color
                                /fill-pattern /fill-transparency /legend
                                /line-cap /line-color /line-style
                                /line-width /location-xaxis
                                /location-yaxis /marker /marker-angle
                                /marker-color /marker-color-map
                                /marker-fill-color /marker-fill-color-map
                                /marker-line-color /marker-line-color-map
                                /marker-line-width /marker-marker
                                /marker-min-scale /marker-scale
                                /path-style /region-position
                                /split-on-nan /zaxis
--define-image-style TEXT
                    Sets the default style for the given image.
                      options: /aspect-ratio /auto-rotate /transparency
--define-legend-style TEXT
                    Sets the default style for the given legend.
                      options: /dy /frame-cap /frame-color
                                /frame-fill-color /frame-fill-pattern
                                /frame-fill-transparency /frame-padding
                                /frame-radius /frame-shape /frame-style
                                /frame-width /picto-height /picto-to-text
                                /picto-width /scale /symbol-scale
                                /text-scale /vpadding
--define-line-style TEXT
                    Sets the default style for the given lines.
                      options: /cap /color /style /width
--define-marker-style TEXT
                    Sets the default style for the given marker.
                      options: /alignment /angle /color /fill-color
                                /font /horizontal-scale /justification
                                /scale /stroke-color /stroke-width
                                /vertical-scale
--define-oriented-line-style TEXT
                    Sets the default style for the given oriented lines.
                      options: /angle /cap /color /head-angle
                                /head-color /head-marker /head-scale
                                /origin /style /tail-angle /tail-color
                                /tail-marker /tail-scale /width
--define-style TEXT Defines style for the given xpath
                      options: /alignment /angle /aspect-ratio
                                /auto-rotate /axis-label-alignment
                                /axis-label-angle /axis-label-color
```

/axis-label-halign
/axis-label-justification /axis-label-loc
/axis-label-position /axis-label-scale
/axis-label-shift /axis-label-text
/axis-label-text-align
/axis-label-text-width /axis-label-valign
/background-color /background-lines-cap
/background-lines-color
/background-lines-style
/background-lines-width /cap /clipped
/color /color-map /contour-conrec
/contour-minor-number
/contour-minor-scale /contour-minor-style
/contour-minor-width /contour-number
/contour-use-naturals /decoration /depth
/dy /error-bar-color /error-bar-line-cap
/error-bar-line-color
/error-bar-line-style
/error-bar-line-width /fill
/fill-close-type /fill-color
/fill-pattern /fill-transparency /font
/frame-cap /frame-color /frame-fill-color
/frame-fill-pattern
/frame-fill-transparency /frame-padding
/frame-radius /frame-shape /frame-style
/frame-width /halign /head-angle
/head-color /head-marker /head-scale
/horizontal-scale /justification /legend
/line-cap /line-color /line-style
/line-width /loc /location
/location-xaxis /location-yaxis /log
/major-tick-length /major-tick-width
/marker /marker-angle /marker-color
/marker-color-map /marker-fill-color
/marker-fill-color-map /marker-line-color
/marker-line-color-map /marker-line-width
/marker-marker /marker-min-scale
/marker-scale /minor-tick-length
/minor-tick-width /offset /origin
/path-style /picto-height /picto-to-text
/picto-width /position /radius
/region-position /scale /shape /shift
/split-on-nan /stroke-color /stroke-width
/style /symbol-scale /tail-angle
/tail-color /tail-marker /tail-scale
/text /text-align /text-scale /text-width

```
                                        /tick-label-alignment /tick-label-angle
                                        /tick-label-color /tick-label-halign
                                        /tick-label-justification
                                        /tick-label-position /tick-label-scale
                                        /tick-label-shift /tick-label-text-align
                                        /tick-label-text-width /tick-label-valign
                                        /ticks-format /ticks-format-last
                                        /ticks-labels /ticks-major
                                        /ticks-major-delta /ticks-major-number
                                        /ticks-major-sep /ticks-minor
                                        /ticks-minor-delta /ticks-minor-number
                                        /ticks-minor-sep-min /ticks-side
                                        /transform /transparency /valign
                                        /vertical-scale /vpadding /watermark
                                        /watermark-alignment /watermark-angle
                                        /watermark-color /watermark-fill-color
                                        /watermark-font
                                        /watermark-horizontal-scale
                                        /watermark-justification /watermark-scale
                                        /watermark-stroke-color
                                        /watermark-stroke-width
                                        /watermark-vertical-scale /width /zaxis
        --define-text-style TEXT
                            Sets the default style for the given text.
                              options: /alignment /angle /color /halign
                                        /justification /position /scale /shift
                                        /text-align /text-width /valign
        --define-title-style TEXT
                            Sets the default style for the given plot title.
                              options: /alignment /angle /color /halign
                                        /justification /loc /position /scale
                                        /shift /text /text-align /text-width
                                        /valign
        --load-style FILE   Load a style file

Output setup
        --[no-]clean        Remove intermediate files
        --[no-]cleanup-pdf  Cleanup produced PDF using gs
        --dependencies FILE Save dependencies
        --[no-]eps          Converts produced PDF to EPS using pdftops
        --[no-]mark         Fills the title of the produced PDF with the
                            command-line
    -n, --name FIGURE_NAME  Sets the name of the figure
        --open              Uses open to view the produced PDF files
    -o, --output FIGURE_NAME
                            Outputs the current state of the figure
```

```
        --output-and-reset  Writes the current figure and starts anew
    -O, --output-directory TEXT
                            Sets the output directory for produced files
    -r, --page-size TEXT    Sets the page size
                              options: /count-legend
        --png RESOLUTION    Converts produced PDF to PNG using convert
                              options: /oversampling /pdftoppm /scale
        --resolution FLOAT  Sets the output resolution
        --[no-]svg          Converts produced PDF to SVG using pdf2svg
        --viewer TEXT       Uses the given viewer to view the produced PDF files
    -X, --xpdf              Uses xpdf to view the produced PDF files

Data stack manipulation
        --append DATASET    Appends the datasets to the last in the stack
                              options: /as /ignore-hooks /where
        --apply-formula TEXT
                            Applies a formula to the last dataset
                              options: /name /which
        --bin               Bins the last dataset
                              options: /column /delta /max /min /name /normalize
                                       /number /which
        --compute-contour FLOAT
                            computes the contour and push it to data stack
                              options: /which
        --dataset-hook COMMANDS
                            Sets the dataset hook
        --dataset-hook-add COMMANDS
                            Adds commands to the dataset hook
        --dataset-hook-clear
                            Clears the dataset hook
        --drop STORED-DATASET
                            Drops the given dataset from the stack
    -j, --join-datasets     Concatenates the last datasets on the stack
                              options: /name /number /which
    -L, --load DATASET      Load given sets onto the data stack
                              options: /as /ignore-hooks /name /where
        --make-contour FLOAT
                            Pushes a contour on the data stack
                              options: /as /ignore-hooks /name /where /which
        --merge-datasets    Merge datasets based on X column
                              options: /columns /number /precision /which
    -P, --print-dataset     Prints the dataset last pushed on the stack
                              options: /save /which
        --show-stack        Displays the content of the stack
        --xy-reglin         ....
                              options: /linear /which
```

```
Introspection
        --edit-command TEXT Edit the command
                              options: /doc
        --edit-group TEXT   Edit the group
        --edit-type TEXT    Edit the type
        --list-commands     List known commands
                              options: /format /raw
        --list-groups       List known groups
                              options: /raw
        --list-styles       List stylistic information
                              options: /raw
        --list-types        List known types
                              options: /raw
        --version-raw       Raw version

Filters
        --avg-dup           Systematicallly average successive elements with
                            identical X values
        --avg-dup-last      Average successive elements with identical X values
                              options: /mode
        --cherry-pick TEXT  Systematicallly remove data for which the formula is
                            false
        --cherry-pick-last TEXT
                            Removes data from the last dataset for which the
                            formula is false
        --smooth INTEGER    Systematicallly smooth data
        --smooth-last INTEGER
                            Smooths data using a gaussian filter
        --sort              Systematically sort subsequent datasets
        --sort-last         Sorts the last dataset according to X values
        --trim INTEGER      Systematically trim subsequent datasets
        --trim-last INTEGER Only keeps every n points in the last dataset

General commands
        --debug             Makes ctioga2 write out debugging information
        --echo              Prints command-line used to standard error
    -e, --eval COMMANDS     Runs the given commands
    -f, --file FILE         Runs given command file
                              options: /log
    -h, --help              Prints help on command-line options and exits
                              options: /pager
        --help-on TEXT      Prints help text about the given command
        --[no-]pause        Pause on errors
        --print-instructions
                            Prints the list of all the instructions run so far
```

```
    --ruby-run FILE     Run as Ruby code
    --set TEXT TEXT     Sets the value of a variable
-v, --verbose           Makes ctioga2 more verbose
-V, --version           Prints the version
```

man page

```
CTIOGA2(1)          Command-line interface for Tioga          CTIOGA2(1)

NAME
       ctioga2 - a command-line front-end for the Tioga plotting library

SYNOPSIS
       ctioga2 arguments ...

DESCRIPTION
       ctioga2  is  a command-line front-end to the wonderful Tioga plot-
       ting library. It aims at plotting  quickly  both  data  files  and
       mathematical  functions,  with  however  the possibility of a high
       control over the details.

       The main feature that was introduced compared to the old ctioga is
       that  it  is  now possible to use command files for ctioga2: every
       single command-line option corresponds to a command, whose name is
       written.  Just  give the command the same arguments as to the com-
       mand-line option. To read a command file, feed it to the  -f  com-
       mand-line option.

EXAMPLES
       Here are a few examples, both from command-line and using the cor-
       responding files.

       ctioga2 File.dat
              Produces a file Plot.pdf  showing  the  second  column  of
              File.dat as a function of the first.

       The corresponding command file would be:

         #!/usr/bin/env ctioga2 -f
         plot(File.dat)

OPTIONS
   Plots
       Plots

       --plot DATASET
              Use  the  current  backend to load the given datasets onto
              the data stack and plot them. It is a combination  of  the
              load  and  the  plot-last  commands; you might want to see
              their documentation.
```

Optional arguments: as bypass-transforms class clipped color color-map contour-conrec contour-minor-number contour-minor-scale contour-minor-style contour-number depth error-bar-color error-bar-line-width fill fill-color fill-pattern fill-transparency id ignore_hooks legend line-cap line-style line-width marker marker-angle marker-color marker-color-map marker-fill-color marker-fill-color-map marker-line-color marker-line-color-map marker-line-width marker-min-scale marker-scale name path-style region-side split-on-nan where xaxis yaxis zaxis
Corresponding command: plot(dataset,option=...)

-p, --plot-last
Plots the last dataset pushed onto the data stack (or the one specified with the which option), with the current style. All aspects of the curve style (colors, markers, line styles...) can be overridden through the use of options.

Optional arguments: class clipped color color-map contour-conrec contour-minor-number contour-minor-scale contour-minor-style contour-number depth error-bar-color error-bar-line-width fill fill-color fill-pattern fill-transparency id legend line-cap line-style line-width marker marker-angle marker-color marker-color-map marker-fill-color marker-fill-color-map marker-line-color marker-line-color-map marker-line-width marker-min-scale marker-scale path-style region-side split-on-nan which xaxis yaxis zaxis
Corresponding command: plot-last(,option=...)

Curves styles
Set stylistic details of curves or other object drawn from data

--[no-]clipped
Sets the clipped for subsequent curves, until cancelled with auto as argument.

Corresponding command: clipped(boolean-or-auto)

-c, --color COLOR-OR-FALSE-OR-AUTO
Sets the line color for subsequent curves, until cancelled with auto as argument.

Corresponding command: color(color-or-false-or-auto)

--color-map COLORMAP-OR-AUTO
Sets the color map for the subsequent curves, until cancelled by an auto argument.

Color maps are used for 3D plots, ie under the effet of contour, xyz-map and xy-parametric.

Corresponding command: color-map(colormap-or-auto)

--color-set COLOR-OR-FALSE-SET
Chooses a set for the line color of subsequent curves. Also sets color to auto, so that the set takes effect immediately

Corresponding command: color-set(color-or-false-set)

--[no-]contour-conrec
If on, the subsequent curves will use the CONREC algorithm for contouring. In the opposite case, the contouring algorithm of Gri is used.

Only useful when contour is in effect.

Corresponding command: contour-conrec(boolean-or-auto)

--contour-minor-number INTEGER-OR-AUTO
Sets the number of minor level lines between major ones (approx) for subsequent curves, until cancelled with auto as argument.

Corresponding command: contour-minor-number(integer-or-auto)

--contour-minor-scale FLOAT-OR-AUTO
Sets the relative scale of minor level lines for subsequent curves, until cancelled with auto as argument.

Corresponding command: contour-minor-scale(float-or-auto)

--contour-minor-style LINE-STYLE-OR-AUTO
Sets the minor ticks line style for subsequent curves, until cancelled with auto as argument.

Corresponding command: contour-minor-style(line-style-or-auto)

--contour-number INTEGER-OR-AUTO
Sets the overall number of level lines for subsequent curves, until cancelled with auto as argument.

Corresponding command: contour-number(integer-or-auto)

--depth INTEGER-OR-AUTO
Sets the depth for subsequent curves, until cancelled with auto as argument.

Corresponding command: depth(integer-or-auto)

--error-bar-color COLOR-OR-FALSE-OR-AUTO
Sets the error bar color for subsequent curves, until cancelled with auto as argument.

Corresponding command: error-bar-color(color-or-false-or-auto)

--error-bar-color-set COLOR-OR-FALSE-SET
Chooses a set for the error bar color of subsequent curves. Also sets error-bar-color to auto, so that the set takes effect immediately

Corresponding command: error-bar-color-set(color-or-false-set)

--error-bar-line-width FLOAT-OR-AUTO
Sets the error bar line width for subsequent curves, until cancelled with auto as argument.

Corresponding command: error-bar-line-width(float-or-auto)

--error-bar-line-width-set FLOAT-SET
Chooses a set for the error bar line width of subsequent curves. Also sets error-bar-line-width to auto, so that the set takes effect immediately

Corresponding command: error-bar-line-width-set(float-set)

--fill FILL-UNTIL-OR-AUTO
Sets the Fill until for subsequent curves, until cancelled with auto as argument.

Corresponding command: fill(fill-until-or-auto)

--fill-color COLOR-OR-AUTO
Sets the fill color for subsequent curves, until cancelled with auto as argument.

Corresponding command: fill-color(color-or-auto)

--fill-color-set COLOR-SET
Chooses a set for the fill color of subsequent curves. Also sets fill-color to auto, so that the set takes effect immediately

Corresponding command: fill-color-set(color-set)

--fill-pattern FILL-PATTERN-OR-AUTO
Sets the fill pattern for subsequent curves, until cancelled with auto as argument.

Corresponding command: fill-pattern(fill-pattern-or-auto)

--fill-set FILL-UNTIL-SET
Chooses a set for the Fill until of subsequent curves. Also sets fill to auto, so that the set takes effect immediately

Corresponding command: fill-set(fill-until-set)

--fill-transparency FLOAT-OR-AUTO
Sets the fill transparency for subsequent curves, until cancelled with auto as argument.

Corresponding command: fill-transparency(float-or-auto)

--fill-transparency-set FLOAT-SET
Chooses a set for the fill transparency of subsequent curves. Also sets fill-transparency to auto, so that the set takes effect immediately

Corresponding command: fill-transparency-set(float-set)

--line-cap LINE-CAP-OR-AUTO
Sets the line cap for subsequent curves, until cancelled with auto as argument.

Corresponding command: line-cap(line-cap-or-auto)

--line-style LINE-STYLE-OR-AUTO
Sets the line style for subsequent curves, until cancelled with auto as argument.

Corresponding command: line-style(line-style-or-auto)

--line-style-set LINE-STYLE-SET
Chooses a set for the line style of subsequent curves. Also sets line-style to auto, so that the set takes effect immediately

Corresponding command: line-style-set(line-style-set)

--line-width FLOAT-OR-AUTO
Sets the line width for subsequent curves, until cancelled with auto as argument.

Corresponding command: line-width(float-or-auto)

--line-width-set FLOAT-SET
Chooses a set for the line width of subsequent curves. Also sets line-width to auto, so that the set takes effect immediately

Corresponding command: line-width-set(float-set)

-m, --marker MARKER-OR-AUTO
Sets the marker for subsequent curves, until cancelled with auto as argument.

Corresponding command: marker(marker-or-auto)

--marker-angle FLOAT-OR-AUTO
Sets the marker angle for subsequent curves, until cancelled with auto as argument.

Corresponding command: marker-angle(float-or-auto)

--marker-color COLOR-OR-FALSE-OR-AUTO
Sets the marker color for subsequent curves, until cancelled with auto as argument.

Corresponding command: marker-color(color-or-false-or-auto)

--marker-color-map COLORMAP-OR-AUTO

Sets the color map for markers for subsequent curves, until cancelled with auto as argument.

Corresponding command: marker-color-map(colormap-or-auto)

--marker-color-set COLOR-OR-FALSE-SET
Chooses a set for the marker color of subsequent curves. Also sets marker-color to auto, so that the set takes effect immediately

Corresponding command: marker-color-set(color-or-false-set)

--marker-fill-color COLOR-OR-FALSE-OR-AUTO
Sets the marker fill color for subsequent curves, until cancelled with auto as argument.

Corresponding command: marker-fill-color(color-or-false-or-auto)

--marker-fill-color-map COLORMAP-OR-AUTO
Sets the color map for the lines of markers for subsequent curves, until cancelled with auto as argument.

Corresponding command: marker-fill-color-map(colormap-or-auto)

--marker-fill-color-set COLOR-OR-FALSE-SET
Chooses a set for the marker fill color of subsequent curves. Also sets marker-fill-color to auto, so that the set takes effect immediately

Corresponding command: marker-fill-color-set(color-or-false-set)

--marker-line-color COLOR-OR-FALSE-OR-AUTO
Sets the marker stroke color for subsequent curves, until cancelled with auto as argument.

Corresponding command: marker-line-color(color-or-false-or-auto)

--marker-line-color-map COLORMAP-OR-AUTO
Sets the color map for the lines of markers for subsequent curves, until cancelled with auto as argument.

Corresponding command: marker-line-color-map(colormap-or-auto)

--marker-line-color-set COLOR-OR-FALSE-SET
Chooses a set for the marker stroke color of subsequent curves. Also sets marker-line-color to auto, so that the set takes effect immediately

Corresponding command: marker-line-color-set(color-or-false-set)

--marker-line-width FLOAT-OR-AUTO
Sets the marker line width for subsequent curves, until cancelled with auto as argument.

Corresponding command: marker-line-width(float-or-auto)

--marker-min-scale FLOAT-OR-FALSE-OR-AUTO
Sets the marker scale for subsequent curves, until cancelled with auto as argument.

Corresponding command: marker-min-scale(float-or-false-or-auto)

--marker-scale FLOAT-OR-AUTO
Sets the marker scale for subsequent curves, until cancelled with auto as argument.

Corresponding command: marker-scale(float-or-auto)

--marker-scale-set FLOAT-SET
Chooses a set for the marker scale of subsequent curves. Also sets marker-scale to auto, so that the set takes effect immediately

Corresponding command: marker-scale-set(float-set)

--marker-set MARKER-SET
Chooses a set for the marker of subsequent curves. Also sets marker to auto, so that the set takes effect immediately

Corresponding command: marker-set(marker-set)

--path-style TEXT-OR-AUTO
Sets the path style for subsequent curves, until cancelled

with auto as argument.

Corresponding command: path-style(text-or-auto)

--path-style-set TEXT-SET
Chooses a set for the path style of subsequent curves. Also sets path-style to auto, so that the set takes effect immediately

Corresponding command: path-style-set(text-set)

--region-side REGION-SIDE-OR-AUTO
Sets the region side for subsequent curves, until cancelled with auto as argument.

Corresponding command: region-side(region-side-or-auto)

--region-side-set REGION-SIDE-SET
Chooses a set for the region side of subsequent curves. Also sets region-side to auto, so that the set takes effect immediately

Corresponding command: region-side-set(region-side-set)

--reuse-style OBJECT
After using this command, the next curve will have the same style as the curve whose name was given as the first argument (it is the name given to the `/id=` option to plot.

Corresponding command: reuse-style(object)

--skip This command acts as if one (or number) dataset had been drawn with respect to the style of the next dataset to be drawn.

Optional arguments: number
Corresponding command: skip(,option=...)

--[no-]split-on-nan
In general, the NaN (not a number, ie invalid data points in the dataset) in a dataset are silently ignored. When this option is on, the lines of xy-plot-style plots are split upon encountering a NaN.

Corresponding command: split-on-nan(boolean-or-auto)

--zaxis TEXT-OR-AUTO
Sets the name of the zaxis for the subsequent curves. This must be an axis that has been previously created using new-zaxis.

This axis will be used to display the colormaps of the following curve.

Corresponding command: zaxis(text-or-auto)

Legends
Commands to specify legends and tweak their look.

--[no-]auto-legend
When this option is in effect (off by default), all datasets get a legend, their 'dataset name', unless another legend is manually specified.

Corresponding command: auto-legend(boolean)

-l, --legend TEXT
Sets the legend for the next dataset. Overridden by the legend option to the plot command.

Corresponding command: legend(text)

--legend-inside ALIGNED-POINT
Using this command sets the position of the legends for the current (sub)plot inside it, at the precise location given.

As a shortcut, legend-inside also takes all the options that legend-style takes, with the same effect.

Optional arguments: class dy frame_cap frame_color frame_fill_color frame_fill_pattern frame_fill_transparency frame_padding frame_radius frame_shape frame_style frame_width id picto_height picto_to_text picto_width scale symbol_scale text_scale vpadding
Corresponding command: legend-inside(aligned-point,option=...)

--legend-line TEXT
Adds a line of text unrelated to any curve to the legend.

The options controlling the aspect of the legend are documented in the define-text-style command.

Optional arguments: align alignment angle color halign justification position scale shift text_align text_width valign
Corresponding command: legend-line(text,option=...)

--legend-multicol
Following legends will be layed out in multiple columns, until a call to legend-multicol-end.

Optional arguments: columns dx
Corresponding command: legend-multicol(,option=...)

--legend-multicol-end
Stop layout out legends in several columns

Corresponding command: legend-multicol-end()

--legend-style
Sets the various aspects of the style of the legends throught its options:

* dy: the spacing between the baseline of consecutive lines; it is deprecated now in favor of vpadding;

* vpadding: the space left between the bottom of a line and the top of the next one;

* scale: the overall scale of the legends

* text-scale: the scale of the text (and the markers) inside the legends

The frame- options control the drawing of a frame around the legend; they have the same meaning as corresponding ones of define-box-style with the frame- bit dropped.

Optional arguments: class dy frame_cap frame_color frame_fill_color frame_fill_pattern frame_fill_transparency frame_padding frame_radius frame_shape frame_style frame_width id picto_height picto_to_text picto_width scale symbol_scale text_scale vpadding
Corresponding command: legend-style(,option=...)

```
Switch between different kinds of plots
    How to switch between different kinds of plot types

    --contour
            Switch  to  contour  plots for later curves. Contour plots
            need three columns (X,Y,Z).  They  have  major  and  minor
            lines.

            Corresponding command: contour()

    --histogram
            Switch to drawing histograms.

            Optional arguments: compute_dx cumulative gap intra_sep
            Corresponding command: histogram(,option=...)

    --xy-parametric
            Switch  to  XY parametric plots, that is standard XY plots
            whose appearance (such as color, marker color, and, poten-
            tially,  marker  kinds  and  more) are governed by one (or
            more ?) Z values.

            Optional arguments: z1 z2 z3 z4
            Corresponding command: xy-parametric(,option=...)

    --xy-plot
            Switch (back) to standard XY plots (ctioga's default)

            Corresponding command: xy-plot()

    --xyz-map
            Switch to XYZ maps, ie plots where the color at a XY loca-
            tion is given by its Z value.

            Corresponding command: xyz-map()

Plot coordinates
    Plot coordinates

    --margin FLOAT
            Leaves a margin around the data points. Expressed in rela-
            tive size of the whole plot.

            Corresponding command: margin(float)

    --xfact FLOAT
```

Alias for xscale.

Corresponding command: xfact(float)

--[no-]xlog
Uses a logarithmic scale for the X axis.

Corresponding command: xlog(boolean)

--xoffset FLOAT
Adds the given offset to all X coordinates.

Corresponding command: xoffset(float)

--xrange PARTIAL-FLOAT-RANGE
Sets the range of the X coordinates.

Important note: when the axis is in log range (using xlog), the numbers you give are not the or ylog values, but their log10, so that to display X values from 1e-2 to 1e3, use:

```
  xyrange -2:3
```

Corresponding command: xrange(partial-float-range)

--xscale FLOAT
Multiplies the X coordinates by this factor.

Corresponding command: xscale(float)

--yfact FLOAT
Alias for yscale.

Corresponding command: yfact(float)

--[no-]ylog
Uses a logarithmic scale for the Y axis.

Corresponding command: ylog(boolean)

--yoffset FLOAT
Adds the given offset to all Y coordinates.

Corresponding command: yoffset(float)

--yrange PARTIAL-FLOAT-RANGE

Sets the range of the Y coordinates.

Important note: when the axis is in log range (using ylog), the numbers you give are not the or ylog values, but their log10, so that to display Y values from 1e-2 to 1e3, use:

  yyrange -2:3
Corresponding command: yrange(partial-float-range)

--yscale FLOAT
Multiplies the Y coordinates by this factor.

Corresponding command: yscale(float)

Graphics primitives
Tioga graphics primitives

--draw DRAWING-SPEC
Tries to emulate the old --draw behavior of ctioga. Don't use it for new things.

Corresponding command: draw(drawing-spec)

--draw-arrow POINT POINT
Draws arrow on the current plot, using the given style. For more information on the available options, see the define-arrow-style command.

Optional arguments: cap class clipped color depth head_angle head_color head_marker head_scale id line_style line_width style tail_angle tail_color tail_marker tail_scale width
Corresponding command: draw-arrow(point,point,option=...)

--draw-box POINT POINT
Draws box on the current plot, using the given style. For more information on the available options, see the define-box-style command.

Optional arguments: cap class clipped color depth fill-color fill-transparency fill_color fill_pattern fill_transparency id radius shape style width
Corresponding command: draw-box(point,point,option=...)

--draw-color-list POINT DIMENSION

Directly draws the list of all named colors on the current plot

Optional arguments: class clipped columns depth id padding scale
Corresponding command: draw-color-list(point,dimension,option=...)

--draw-color-set-list POINT DIMENSION
Directly draws the list of all color sets on the current plot

Optional arguments: class clipped depth exclude id include scale
Corresponding command: draw-color-set-list(point,dimension,option=...)

--draw-contour LEVEL
Directly draws contour on the current plot

Optional arguments: class clipped closed color depth id style width
Corresponding command: draw-contour(level,option=...)

--draw-image FILE TOP-LEFT BOTTOM-RIGHT
Draws image on the current plot, using the given style. For more information on the available options, see the define-image-style command.

Optional arguments: aspect_ratio auto_rotate class clipped depth id transparency
Corresponding command: draw-image(file,top-left,bottom-right,option=...)

--draw-legend-pictogram POINT OBJECT
Draws the legend pictogram for the given curve

Optional arguments: class clipped depth id width
Corresponding command: draw-legend-pictogram(point,object,option=...)

--draw-line POINT POINT
Draws line on the current plot, using the given style. For more information on the available options, see the define-line-style command.

Optional arguments: cap class clipped color depth head_angle head_color head_marker head_scale id line_style line_width style tail_angle tail_color tail_marker tail_scale width
Corresponding command: draw-line(point,point,option=...)

--draw-line-style-list POINT DIMENSION
Directly draws the list of all named line styles on the current plot

Optional arguments: class clipped columns depth id padding scale
Corresponding command: draw-line-style-list(point,dimension,option=...)

--draw-marker POINT MARKER
Draws marker on the current plot, using the given style. For more information on the available options, see the define-marker-style command.

Optional arguments: alignment angle class clipped color depth fill_color horizontal_scale id justification scale stroke_color stroke_width vertical_scale
Corresponding command: draw-marker(point,marker,option=...)

--draw-marker-list POINT DIMENSION
Directly draws the list of all named markers on the current plot

Optional arguments: class clipped columns depth id padding scale
Corresponding command: draw-marker-list(point,dimension,option=...)

--draw-marker-set-list POINT DIMENSION
Directly draws the list of all marker sets on the current plot

Optional arguments: class clipped depth exclude id include scale
Corresponding command: draw-marker-set-list(point,dimension,option=...)

--draw-oriented-line POINT DIMENSION
Draws oriented-line on the current plot, using the given

style. For more information on the available options, see the define-oriented-line-style command.

Optional arguments: angle cap class clipped color depth head_angle head_color head_marker head_scale id origin style tail_angle tail_color tail_marker tail_scale width
Corresponding command: draw-oriented-line(point,dimension,option=...)

--draw-string-marker POINT TEXT
Draws marker on the current plot, using the given style. For more information on the available options, see the define-marker-style command.

Optional arguments: alignment angle class clipped color depth fill_color font horizontal_scale id justification scale stroke_color stroke_width vertical_scale
Corresponding command: draw-string-marker(point,text,option=...)

--draw-tangent DATA-POINT
Draws tangent on the current plot, using the given style. For more information on the available options, see the define-arrow-style command.

Optional arguments: cap class clipped color depth head_angle head_color head_marker head_scale id line_style line_width nbavg style tail_angle tail_color tail_marker tail_scale width xextent xfrom xto yextent yfrom yto
Corresponding command: draw-tangent(data-point,option=...)

--draw-text POINT TEXT
Draws text on the current plot, using the given style. For more information on the available options, see the define-text-style command.

Optional arguments: alignment angle class clipped color depth font halign id justification position scale shift text_align text_width valign
Corresponding command: draw-text(point,text,option=...)

The 'direct' backend: Direct format
The commands in this group drive the behaviour of the direct backend; see its documentation for more information

--direct

```
        Selects the 'direct' backend

        Corresponding command: direct()

The 'gnuplot' backend: Gnuplot files
    The commands in this group drive the behaviour of the gnuplot
    backend; see its documentation for more information

    --gnuplot
        Selects the 'gnuplot' backend

        Optional arguments: range samples vars
        Corresponding command: gnuplot(,option=...)

    --gnuplot-range RANGE
        The plotting X range, such as 0:2

        Corresponding command: gnuplot-range(range)

    --gnuplot-samples SAMPLES
        The number of samples

        Corresponding command: gnuplot-samples(samples)

    --gnuplot-vars VARS
        A colon-separated override of local variables, such as
        a=1;b=3;c=5

        Corresponding command: gnuplot-vars(vars)

The 'math' backend: Mathematical functions
    The commands in this group drive the behaviour of the math back-
    end; see its documentation for more information

    --math  Selects the 'math' backend

        Optional arguments: log samples trange xrange
        Corresponding command: math(,option=...)

    --[no-]math-log
        Space samples logarithmically

        Corresponding command: math-log(log)

    --math-samples SAMPLES
        The number of points
```

```
        Corresponding command: math-samples(samples)

    --math-trange TRANGE
        T range (a:b) (parametric plot)

        Corresponding command: math-trange(trange)

    --math-xrange XRANGE
        X range (a:b)

        Corresponding command: math-xrange(xrange)

The 'smath' backend: Mathematical functions (multi-D)
    The commands in this group drive the behaviour of the smath  back-
    end; see its documentation for more information

    --smath Selects the 'smath' backend

        Optional  arguments:  samples urange usamples vrange vsam-
        ples
        Corresponding command: smath(,option=...)

    --smath-samples SAMPLES
        Number of samples (default, overriden by variable-specific
        specs)

        Corresponding command: smath-samples(samples)

    --smath-urange URANGE
        U range (a:b)

        Corresponding command: smath-urange(urange)

    --smath-usamples USAMPLES
        Number of U samples

        Corresponding command: smath-usamples(usamples)

    --smath-vrange VRANGE
        V range (a:b)

        Corresponding command: smath-vrange(vrange)

    --smath-vsamples VSAMPLES
        Number of V samples
```

```
            Corresponding command: smath-vsamples(vsamples)

The 'text' backend: Text format
    The  commands  in this group drive the behaviour of the text back-
    end; see its documentation for more information

    --csv   Now parse the following data files as CSV. Equivalent to

              text /separator=/[,;]/
            Corresponding command: csv()

    --text  Selects the 'text' backend

            Optional arguments: col header-line  parameters  separator
            skip split
            Corresponding command: text(,option=...)

    --text-col COL
            Which columns to use when the @1:2 syntax is not used

            Corresponding command: text-col(col)

    --text-header-line HEADER-LINE
            Regular  expression indicating the header line (containing
            column names) (default /^##/

            Corresponding command: text-header-line(header-line)

    --text-parameters PARAMETERS
            Regular expression for extracting parameters from a  file.
            Defaults to nil (ie nothing)

            Corresponding command: text-parameters(parameters)

    --text-separator SEPARATOR
            The columns separator. Defaults to / +/

            Corresponding command: text-separator(separator)

    --text-skip SKIP
            Number of lines to be skipped at the beginning of the file

            Corresponding command: text-skip(skip)

    --[no-]text-split
```

If true, splits files into subsets on blank/non number lines

Corresponding command: text-split(split)

LaTeX

Commands providing control over the LaTeX output (preamble, packages...)

--preamble TEXT

Adds the given string to the LaTeX preamble of the output.

Corresponding command: preamble(text)

--set-global-font

Set global font. Sets the size of everything, including that of text that has already been used.

Optional arguments: size
Corresponding command: set-global-font(,option=...)

--use TEXT

Adds a command to include the LaTeX package into the preamble. The arguments, if given, are given within [square backets].

Optional arguments: arguments
Corresponding command: use(text,option=...)

--utf8 Makes ctioga2 use UTF-8 for all text. It is exactly equivalent to the command preamble with the argument:

```
  sepackage[utf8]{inputenc}sepackage[T1]{fontenc}
```

Corresponding command: utf8()

Subplots and assimilated

Subplots and assimilated

--end Leaves the current subobject.

Corresponding command: end()

--frame-margins FRAME-MARGINS

Sets the margins for the current plot. Margins are the same things as the position (such as specified for and inset). Using this within an inset or more complex plots

might produce unexpected results. The main use of this function is to control the padding around simple plots.

The options override the contents of the margin, which makes it easy to set all the dimensions to a given value and just override the ones you need to:

frame-margins 2mm /left=1cm This sets all the margins around the side to 2mm excepted the left one, which means in particular the bottom axis tick labels will be cut.

Optional arguments: bottom left right top
Corresponding command: frame-margins(frame-margins,option=...)

--gradient COLOR COLOR
All the curves between this command and the corresponding end will have their color set to a weighted average of the colors given as argument. This gives a neat gradient effect.

Optional arguments: class id
Corresponding command: gradient(color,color,option=...)

--hide OBJECTS
Hides all the named objects in the list. Useful for creating animations.

Optional arguments: show
Corresponding command: hide(objects,option=...)

--inset BOX
Starts a new inset within the given box.

If no graph has been started yet, it just creates a new graph using the given box. In short, it does what it seems it should.

Optional arguments: class id
Corresponding command: inset(box,option=...)

--next-inset BOX
Has the same effet as end followed by inset.

Particularly useful for chaining subgraphs. In that case, you might be interested in the grid box specification and

setup-grid.

Optional arguments: class id
Corresponding command: next-inset(box,option=...)

--padding DIMENSION
When the frame-margins is set to automatic, ctioga2 leaves that much space around the plot on the sides where there are no labels.

Corresponding command: padding(dimension)

--plot-scale FLOAT
Applies a scaling factor to the whole current subplot. Depending on the 'what' option (default text), the scale applies to:

* text ('text' or 'both')

* marker size ('text' or 'both')

* line widths ('lines' or 'both') Scaling also applies to all elements of the plot that were added before the call to plot-scale.

Optional arguments: what
Corresponding command: plot-scale(float,option=...)

--region
The curves up to the corresponding end will be considered for delimiting a colored region between them. The actual position of the curves with respect to the region can be fine-tuned using the region-side command (or the corresponding option to plot).

Optional arguments: class color id pattern reversed_color reversed_pattern reversed_transparency transparency
Corresponding command: region(,option=...)

--reopen OBJECT
Reopens a previously finished container, such as a subplot, a region or a gradient. Provide the unique name you gave as the /id= option to the first command

Corresponding command: reopen(object)

--root-plot
Begins the root plot. This command is only necessary if you want to give styling information to the root plot.

Optional arguments: class id
Corresponding command: root-plot(,option=...)

--setup-grid TEXT
Sets up a grid of the given layout (such as 2x1). After this command, arguments such as grid:0,1 can be used as the box argument of inset and next-inset commands.

Alternatively, the layout can be specified as 1,2,1x1,4, in which case there are three columns and two rows; the second column is 2 times larger than the other ones, while the second row is four times larger than the first.

Optional arguments: bottom dx dy left right top
Corresponding command: setup-grid(text,option=...)

--text-adjust-mode TEXT-ADJUST-MODE
When this is on (the default), ctioga2 tries to be smart about the size of the text bits around the plot. However, this can be bothersome at times, so you can disable that with this command.

Corresponding command: text-adjust-mode(text-adjust-mode)

Axes and labels
Axes and labels

--axis-style AXIS
This command can be used to set various aspects of the style of the given axis, through its various options, which are documented in more details in the define-axis-style command -- excepted for the ticks bit which are documented in the ticks command.

If the option also-axes is specified, the style is also applied to the comma-separated list of axes it contains.

Optional arguments: also-axes axis_label_alignment axis_label_angle axis_label_color axis_label_halign axis_label_justification axis_label_loc axis_label_position axis_label_scale axis_label_shift axis_label_text axis_label_text_align axis_label_text_width

axis_label_valign background_lines_cap background_lines_color background_lines_style background_lines_width decoration line_width location log major_tick_length major_tick_width minor_tick_length minor_tick_width offset stroke_color tick_label_alignment tick_label_angle tick_label_color tick_label_halign tick_label_justification tick_label_position tick_label_scale tick_label_shift tick_label_text_align tick_label_text_width tick_label_valign ticks_format ticks_format_last ticks_labels ticks_major ticks_major_delta ticks_major_number ticks_major_sep ticks_minor ticks_minor_delta ticks_minor_number ticks_minor_sep_min ticks_side transform
Corresponding command: axis-style(axis,option=...)

--background-grid COLOR-OR-FALSE
Shortcut to set the color for the left and bottom axes

Optional arguments: cap style width
Corresponding command: background-grid(color-or-false,option=...)

--background-lines AXIS COLOR-OR-FALSE
Sets the color of the background lines for the given axis.

Optional arguments: cap style width
Corresponding command: background-lines(axis,color-or-false,option=...)

--bottom AXIS-DECORATION
Sets the type of the bottom axis.

The options have the same meaning as for define-axis-style, see that command for more information.

Optional arguments: axis_label_alignment axis_label_angle axis_label_color axis_label_halign axis_label_justification axis_label_loc axis_label_position axis_label_scale axis_label_shift axis_label_text axis_label_text_align axis_label_text_width axis_label_valign background_lines_cap background_lines_color background_lines_style background_lines_width line_width location log major_tick_length major_tick_width minor_tick_length minor_tick_width offset stroke_color tick_label_alignment tick_label_angle tick_label_color tick_label_halign tick_label_justification

tick_label_position tick_label_scale tick_label_shift
tick_label_text_align tick_label_text_width
tick_label_valign ticks_format ticks_format_last
ticks_labels ticks_major ticks_major_delta
ticks_major_number ticks_major_sep ticks_minor
ticks_minor_delta ticks_minor_number ticks_minor_sep_min
ticks_side transform
Corresponding command: bottom(axis-decoration,option=...)

--clear-axes
Removes all the axes and their associated labels

Corresponding command: clear-axes()

--drawing-frame
Setup a drawing frame, ie a frame in which the top-left point is at 0,0, with X and Y values positive over the whole frame, and counted in centimeters (or with the unit given using the /units option, ie /units=mm expressed in millimeters or /units=12pt expressed in multiple of 12 TeX points).

Optional arguments: units
Corresponding command: drawing-frame(,option=...)

--label-style LABEL
Sets the style of the given label (see the type label for more information). See define-text-style for detailed information about the meaning of the options.

The option text permits to also set the text of the label (does not work for ticks).

For tick labels, setting the color option also sets the color for the lines of the corresponding axis. If you don't want that, you can override the color using the stroke-color option of axis-style. This will only work with Tioga version 1.11 or greater.

Optional arguments: align alignment angle color halign justification loc position scale shift text text_align text_width valign
Corresponding command: label-style(label,option=...)

--left AXIS-DECORATION
Sets the type of the left axis.

The options have the same meaning as for define-axis-style, see that command for more information.

Optional arguments: axis_label_alignment axis_label_angle axis_label_color axis_label_halign axis_label_justification axis_label_loc axis_label_position axis_label_scale axis_label_shift axis_label_text axis_label_text_align axis_label_text_width axis_label_valign background_lines_cap background_lines_color background_lines_style background_lines_width line_width location log major_tick_length major_tick_width minor_tick_length minor_tick_width offset stroke_color tick_label_alignment tick_label_angle tick_label_color tick_label_halign tick_label_justification tick_label_position tick_label_scale tick_label_shift tick_label_text_align tick_label_text_width tick_label_valign ticks_format ticks_format_last ticks_labels ticks_major ticks_major_delta ticks_major_number ticks_major_sep ticks_minor ticks_minor_delta ticks_minor_number ticks_minor_sep_min ticks_side transform
Corresponding command: left(axis-decoration,option=...)

--new-zaxis TEXT
Creates a named Z axis that can display information from Z color maps

Optional arguments: axis_label_alignment axis_label_angle axis_label_color axis_label_halign axis_label_justification axis_label_loc axis_label_position axis_label_scale axis_label_shift axis_label_text axis_label_text_align axis_label_text_width axis_label_valign background_lines_cap background_lines_color background_lines_style background_lines_width bar_shift bar_size bounds class decoration id line_width location log major_tick_length major_tick_width minor_tick_length minor_tick_width offset padding stroke_color tick_label_alignment tick_label_angle tick_label_color tick_label_halign tick_label_justification tick_label_position tick_label_scale tick_label_shift tick_label_text_align tick_label_text_width tick_label_valign ticks_format ticks_format_last ticks_labels ticks_major ticks_major_delta ticks_major_number ticks_major_sep ticks_minor ticks_minor_delta ticks_minor_number ticks_minor_sep_min

ticks_side transform
Corresponding command: new-zaxis(text,option=...)

--no-title
Removes the title of the current plot.

Corresponding command: no-title()

--no-xlabel
Removes the X label for the current plot.

Corresponding command: no-xlabel()

--no-ylabel
Removes the Y label for the current plot.

Corresponding command: no-ylabel()

--right AXIS-DECORATION
Sets the type of the right axis.

The options have the same meaning as for define-axis-style, see that command for more information.

Optional arguments: axis_label_alignment axis_label_angle axis_label_color axis_label_halign axis_label_justification axis_label_loc axis_label_position axis_label_scale axis_label_shift axis_label_text axis_label_text_align axis_label_text_width axis_label_valign background_lines_cap background_lines_color background_lines_style background_lines_width line_width location log major_tick_length major_tick_width minor_tick_length minor_tick_width offset stroke_color tick_label_alignment tick_label_angle tick_label_color tick_label_halign tick_label_justification tick_label_position tick_label_scale tick_label_shift tick_label_text_align tick_label_text_width tick_label_valign ticks_format ticks_format_last ticks_labels ticks_major ticks_major_delta ticks_major_number ticks_major_sep ticks_minor ticks_minor_delta ticks_minor_number ticks_minor_sep_min ticks_side transform
Corresponding command: right(axis-decoration,option=...)

--ticks AXIS
This command can be used to control the location of major

```
        and minor ticks and the text of their labels for the given
        axis. Options available:

          * format the format of the tick labels, using a sprintf-
            like    syntax (see below)

          * format-last the format of the last of the tick  labels
            (useful to    include an overall "power-of-ten" factor

          * major a space or comma-separated list of the positions
            of the    major (labeled) ticks

          * minor same for the minor ticks

          * label a comma-separated list of the tick labels  (must
            be the same    number of elements as that of the major
            list). If you must    include a comma inside, then use
            || as a separator.

        Format  is  a  normal  sprintf  format, with the following
        additional special codes:

          * %p the "common power of 10": if you  divide  the  tick
            values by 10    to the power %p, the smallest absolute
            value will be between 1     and  10  (excluding  0  of
            course)

          * %b...  is  the tick value divided by this common power
            of 10. You    *must* follow  this  spec  by  a  usual
            sprintf format: %b.3g would    get you a number with 3
            significant digits

        Optional  arguments:  format  format_last   labels   major
        major_delta   major_number   major_sep  minor  minor_delta
        minor_number minor_sep_min
        Corresponding command: ticks(axis,option=...)

-t, --title TEXT
        Sets the title of the current plot.

        Optional arguments: align  alignment  angle  color  halign
        justification   loc   position   scale   shift  text_align
        text_width valign
        Corresponding command: title(text,option=...)

--top AXIS-DECORATION
```

Sets the type of the top axis.

The options have the same meaning as for define-axis-style, see that command for more information.

Optional arguments: axis_label_alignment axis_label_angle axis_label_color axis_label_halign axis_label_justification axis_label_loc axis_label_position axis_label_scale axis_label_shift axis_label_text axis_label_text_align axis_label_text_width axis_label_valign background_lines_cap background_lines_color background_lines_style background_lines_width line_width location log major_tick_length major_tick_width minor_tick_length minor_tick_width offset stroke_color tick_label_alignment tick_label_angle tick_label_color tick_label_halign tick_label_justification tick_label_position tick_label_scale tick_label_shift tick_label_text_align tick_label_text_width tick_label_valign ticks_format ticks_format_last ticks_labels ticks_major ticks_major_delta ticks_major_number ticks_major_sep ticks_minor ticks_minor_delta ticks_minor_number ticks_minor_sep_min ticks_side transform
Corresponding command: top(axis-decoration,option=...)

--x2 Switches to using the top axis for X axis for the subsequent curves, and turns on full decoration for the right axis. Shortcut for:

```
xaxis top
axis-style top /decoration=full
```

Corresponding command: x2()

--xaxis AXIS
Sets the default axis for the X axis for all subsequent commands take rely on default axes (such as plot, xrange, yrange...).

Corresponding command: xaxis(axis)

-x, --xlabel TEXT
Sets the X label of the current plot.

Optional arguments: align alignment angle color halign justification loc position scale shift text_align text_width valign

Corresponding command: xlabel(text,option=...)

--y2 Switches to using the right axis for Y axis for the subsequent curves, and turns on full decoration for the right axis. Shortcut for:

```
yaxis right
axis-style right /decoration=full
```

Corresponding command: y2()

--yaxis AXIS
Sets the default axis for the Y axis for all subsequent commands take rely on default axes (such as plot, xrange, yrange...).

Corresponding command: yaxis(axis)

-y, --ylabel TEXT
Sets the Y label of the current plot.

Optional arguments: align alignment angle color halign justification loc position scale shift text_align text_width valign
Corresponding command: ylabel(text,option=...)

Background
Commands dealing with the aspect of the background of a plot (excluding background lines, which are linked to axes).

--background COLOR-OR-FALSE
Sets the background color for the current (and subsequent?) plot.

Corresponding command: background(color-or-false)

--watermark TEXT
Sets a watermark for the background of the current plot.

Optional arguments: alignment angle color fill_color font horizontal_scale justification scale stroke_color stroke_width vertical_scale
Corresponding command: watermark(text,option=...)

Default styles
Commands for defining default styles.

All commands take the selector of the style to be defined. It is a CSS-like selector, relying on #id and .class, and using #parentality. Therefore, defining a style for .insets #stuff will define it for an object named stuff, but only if it is contained within another one that has a .insets class.

ctioga2 does not support changing a style after its use. It may affect only the following objects or all the ones that were created from the beginning, depending on the context. For safety, only define style before issueing any graphics command.

--define-arrow-style TEXT
: Sets the default style for arrows. All arrow styles descend from the base style. Use a style different than base by passing its name as the /base-style option to the draw-arrow command.

  Meaning of the style parameters:

  * color, style and width: same as in define-line-style
  * head-marker, tail-marker: a marker to be used for the head or for the tail
  * head-scale, tail-scale: scale of the head or tail markers
  * head-angle, tail-angle: rotate the head or the tail by that many degrees
  * head-color, tail-color: the color of the head or tail

  Optional arguments: cap color head_angle head_color head_marker head_scale style tail_angle tail_color tail_marker tail_scale width
  Corresponding command: define-arrow-style(text,option=...)

--define-axis-style TEXT
: Sets the style for a whole axis. All axis styles descend from the base style. Horizontal and vertical axis styles descend from the x and y styles, and plot sides are styled with the left, right, top and bottom styles.

  Axis styles have lots of parameters:

  * axis-label- and tick-label- parameters are title style

parameters whose meaning is given in define-title-style, that affect ticks and axis labels

* decoration: a axis-decoration that specify which ticks and tick labels to draw

* background-lines- parameters define the style of background lines, as in define-line-style

Optional arguments: axis_label_alignment axis_label_angle axis_label_color axis_label_halign axis_label_justification axis_label_loc axis_label_position axis_label_scale axis_label_shift axis_label_text axis_label_text_align axis_label_text_width axis_label_valign background_lines_cap background_lines_color background_lines_style background_lines_width decoration line_width location log major_tick_length major_tick_width minor_tick_length minor_tick_width offset stroke_color tick_label_alignment tick_label_angle tick_label_color tick_label_halign tick_label_justification tick_label_position tick_label_scale tick_label_shift tick_label_text_align tick_label_text_width tick_label_valign ticks_format ticks_format_last ticks_labels ticks_major ticks_major_delta ticks_major_number ticks_major_sep ticks_minor ticks_minor_delta ticks_minor_number ticks_minor_sep_min ticks_side transform
Corresponding command: define-axis-style(text,option=...)

--define-background-style TEXT

Sets the style for plot background. All background styles descend from the base style. In addition, the background of a plot is change by the style name background.

Meaning of the style parameters:

* watermark: the text of the watermark

* all watermark_ styles have the same meaning as in define-text-style, as the watermark is a string marker

* background_color: the color of the background

Optional arguments: background_color watermark watermark_alignment watermark_angle watermark_color watermark_fill_color watermark_font watermark_horizontal_scale

watermark_justification watermark_scale watermark_stroke_color watermark_stroke_width watermark_vertical_scale
Corresponding command: define-background-style(text,option=...)

--define-box-style TEXT
Sets the default style for boxes. All box styles descend from the base style. Use a style different than base by passing its name as the /base-style option to the draw-box command.

Meaning of the style parameters:

* color, style and width: same as in define-line-style

* fill-color: fill color for the box

* fill-transparency: the transparency for the fill, from 0 to 1

Optional arguments: cap color fill_color fill_pattern fill_transparency radius shape style width
Corresponding command: define-box-style(text,option=...)

--define-curve-style TEXT
Sets the default style for the named plot background.

Optional arguments: clipped color color_map contour_conrec contour_minor_number contour_minor_scale contour_minor_style contour_minor_width contour_number contour_use_naturals depth error_bar_color error_bar_line_cap error_bar_line_color error_bar_line_style error_bar_line_width fill fill_close_type fill_color fill_pattern fill_transparency legend line_cap line_color line_style line_width location_xaxis location_yaxis marker marker_angle marker_color marker_color_map marker_fill_color marker_fill_color_map marker_line_color marker_line_color_map marker_line_width marker_marker marker_min_scale marker_scale path_style region_position split_on_nan zaxis
Corresponding command: define-curve-style(text,option=...)

--define-image-style TEXT
Sets the default style for the named image.

Optional arguments: aspect_ratio auto_rotate transparency
Corresponding command: define-image-style(text,option=...)

--define-legend-style TEXT
Sets the style for legends.

Optional arguments: dy frame_cap frame_color frame_fill_color frame_fill_pattern frame_fill_transparency frame_padding frame_radius frame_shape frame_style frame_width picto_height picto_to_text picto_width scale symbol_scale text_scale vpadding
Corresponding command: define-legend-style(text,option=...)

--define-line-style TEXT
Sets the default style for lines. All line styles descend from the base style. Use a style different than base by passing its name as the /base-style option to the draw-line command.

Meaning of the style parameters:

* color: the color of the line, see color

* style: the line style, see line-style

* width: the line width (in points)

--define-line-style * /color=Pink makes all lines pink (unless overriden by the /color option to draw-line), while

--define-line-style .pink /color=Pink only affect those to which the /class=pink style option was given.

Optional arguments: cap color style width
Corresponding command: define-line-style(text,option=...)

--define-marker-style TEXT
Sets the style for marker and marker strings. All marker and marker string styles descend from the base style. Use a style different than base by passing its name as the /base-style option to the draw-marker or draw-string-marker commands.

Meaning of the style parameters:

* alignment, justification, angle, color and scale: as in define-text-style

* fill-color and stroke_color: markers are both stroked and filled, you can control all colors in one go using color or specifying each with fill-color and stroke_color

* font: is a PDF font number (from 1 to 14), only used for marker strings

* horizontal-scale, vertical-scale: scales the marker only horizontally or vertically

Optional arguments: alignment angle color fill_color font horizontal_scale justification scale stroke_color stroke_width vertical_scale
Corresponding command: define-marker-style(text,option=...)

--define-oriented-line-style TEXT
Sets the default style for the named oriented lines.

Optional arguments: angle cap color head_angle head_color head_marker head_scale origin style tail_angle tail_color tail_marker tail_scale width
Corresponding command: define-oriented-line-style(text,option=...)

--define-style TEXT

Optional arguments: alignment angle aspect_ratio auto_rotate axis_label_alignment axis_label_angle axis_label_color axis_label_halign axis_label_justification axis_label_loc axis_label_position axis_label_scale axis_label_shift axis_label_text axis_label_text_align axis_label_text_width axis_label_valign background_color background_lines_cap background_lines_color background_lines_style background_lines_width cap clipped color color_map contour_conrec contour_minor_number contour_minor_scale contour_minor_style contour_minor_width contour_number contour_use_naturals decoration depth dy error_bar_color error_bar_line_cap error_bar_line_color error_bar_line_style error_bar_line_width fill fill_close_type fill_color fill_pattern fill_transparency

font frame_cap frame_color frame_fill_color frame_fill_pattern frame_fill_transparency frame_padding frame_radius frame_shape frame_style frame_width halign head_angle head_color head_marker head_scale horizontal_scale justification legend line_cap line_color line_style line_width loc location location_xaxis location_yaxis log major_tick_length major_tick_width marker marker_angle marker_color marker_color_map marker_fill_color marker_fill_color_map marker_line_color marker_line_color_map marker_line_width marker_marker marker_min_scale marker_scale minor_tick_length minor_tick_width offset origin path_style picto_height picto_to_text picto_width position radius region_position scale shape shift split_on_nan stroke_color stroke_width style symbol_scale tail_angle tail_color tail_marker tail_scale text text_align text_scale text_width tick_label_alignment tick_label_angle tick_label_color tick_label_halign tick_label_justification tick_label_position tick_label_scale tick_label_shift tick_label_text_align tick_label_text_width tick_label_valign ticks_format ticks_format_last ticks_labels ticks_major ticks_major_delta ticks_major_number ticks_major_sep ticks_minor ticks_minor_delta ticks_minor_number ticks_minor_sep_min ticks_side transform transparency valign vertical_scale vpadding watermark watermark_alignment watermark_angle watermark_color watermark_fill_color watermark_font watermark_horizontal_scale watermark_justification watermark_scale watermark_stroke_color watermark_stroke_width watermark_vertical_scale width zaxis
Corresponding command: define-style(text,option=...)

--define-text-style TEXT

Sets the default style for texts. All text styles descend from the base style. Use a style different than base by passing its name as the /base-style option to the drawtext command.

Meaning of the style parameters:

* alignment: vertical alignment

* justification: horizontal alignment

* angle: angle in degrees to the horizontal (or default orientation in some cases)

* color: text color

* scale: text scale

Optional arguments: alignment angle color halign justification position scale shift text_align text_width valign
Corresponding command: define-text-style(text,option=...)

--define-title-style TEXT

Sets the style for title. All title styles descend from the base style. In addition, the title of a plot is addressed by the style name title.

Meaning of the style parameters:

* alignment, justification, angle, color and scale: as in define-text-style

* text: sets the title text

* loc: the side on which to display the title, a location

* shift: the distance away from the plot in text size units (maybe a dimension should be better later)

* position: shift from the center (parallel to the plot side)

Optional arguments: alignment angle color halign justification loc position scale shift text text_align text_width valign
Corresponding command: define-title-style(text,option=...)

--load-style FILE

Corresponding command: load-style(file)

Output setup

Commands in this group deal with various aspects of the production of output files:

* output file location

* post-processing (including automatic display)

```
  * cleanup...

--[no-]clean
        When this is on (the default), ctioga2 automatically
        cleans up intermediate files produced by Tioga. When LaTeX
        fails, it can be useful to have a closer look at them, so
        disable it to be able to look into them.

        Corresponding command: clean(boolean)

--[no-]cleanup-pdf
        If this is on, then ctioga2 uses ghostscript to cleanup
        the PDF file produced. It is on by default is ctioga2 is
        able to find the gs executable.

        Corresponding command: cleanup-pdf(boolean)

--dependencies FILE
        Saves the dependencies as a Makefike into the given file
        name.

        Corresponding command: dependencies(file)

--[no-]eps
        When this feature is on, all produced PDF files are con-
        verted to EPS using the pdftops program (from the xpdf
        tools suite).

        Corresponding command: eps(boolean)

--[no-]mark
        When this feature is on (which is the default, as it comes
        in very useful), the 'title' field of the PDF informations
        is set to the command-line that resulted in the PDF file.
        Disable it if you don't want any information to leak.

        Please note that this will not log the values of the
        CTIOGA2_PRE and CTIOGA2_POST variables, so you might still
        get a different output if you make heavy use of those.

        Corresponding command: mark(boolean)

-n, --name FIGURE_NAME
        Sets the name of the figure, which is also the base name
        for the output file. This has nothing to do with the title
```

of the plot, which can be set using the command title.

If the name contains a %, it is interpreted by ctioga2 as a printf-like format. It will attempt to find the first file that does not exist, feeding it with increasing numbers.

The default value is now Plot-%03d, which means you'll get increasing numbers automatically.

Corresponding command: name(figure name)

--open Uses open (available on MacOS) to view the PDF files produced by ctioga2.

Corresponding command: open()

-o, --output FIGURE_NAME
Writes a figure with the given name (see name) and keeps the current state. This can be used to create an animation.

Corresponding command: output-now(figure name)

--output-and-reset
Writes the current figure and starts a fresh one. All non-graphical information are kept (curves loaded, figure names, preamble, and so on).

Corresponding command: output-and-reset()

-O, --output-directory TEXT
Sets the directory to which files will be plot. It defaults to the current directory.

Corresponding command: output-directory(text)

-r, --page-size TEXT
Sets the size of the output PDF file, in real units. Takes arguments in the form of 12cm x 3in (spaces can be omitted).

Optional arguments: count-legend
Corresponding command: page-size(text,option=...)

--png RESOLUTION

Turns all produced PDF files into PNG images of the given resolution using convert. This also has for effect to set the page-size to the resolution divided by the 'scale' option in Postscript points. By default, 2 pixels are rendered for 1 final to produce a nicely antialiased image. Use the 'oversampling' option to change that, in case the output looks too pixelized. This option only affects conversion time.

Optional arguments: oversampling pdftoppm scale
Corresponding command: png(resolution,option=...)

--resolution FLOAT
By default, ctioga2 has a resolution of 1/100th of a postscript point. This is clearly enough for most tasks, but you can increase it should you need, or decrease it to generate possibly a little more jaggy but less large PDF files.

The number given is the number of output points per postscript point.

Better change that at the beginning of the plot.

Corresponding command: resolution(float)

--[no-]svg
When this feature is on, all produced PDF files are converted to SVG using the neat pdf2svg program.

Corresponding command: svg(boolean)

--viewer TEXT
Sets the command for viewing the PDF file after ctioga2 has been run.

Corresponding command: viewer(text)

-X, --xpdf
Uses xpdf to view the PDF files produced by ctioga2.

If xpdf is not found, then it tries to guess which viewers are available:

* on windows, it uses the system file associations to open the PDF file

```
            * on mac, it uses the open command

            * on linux, it tries, mime-open, and if that is missing,
              falls back to    commonly available PDF viewers.

          Corresponding command: xpdf()

Data stack manipulation
    Commands for manipulation of the data stack

    --append DATASET
          Use  the  current backend to load the given dataset(s) and
          append to the last dataset on the stack (without  creating
          a  new  dataset).  Roughly the equivalent of first running
          load and then join-datasets.

          Optional arguments: as ignore_hooks where
          Corresponding command: append(dataset,option=...)

    --apply-formula TEXT
          Applies a formula to the last dataset (or the named one)

          Optional arguments: name which
          Corresponding command: apply-formula(text,option=...)

    --bin   This command bins the contents of the Y column of the last
          dataset  on  the  stack,  and  pushes the results as a new
          dataset.

          Optional arguments: column delta max  min  name  normalize
          number which
          Corresponding command: bin(,option=...)

    --compute-contour FLOAT
          Computes  the  contour  at  the  given level for the given
          dataset (or the last on the stack if  none  is  specified)
          and pushes it onto the data stack.

          You can further manipulate it as usual.

          Optional arguments: which
          Corresponding command: compute-contour(float,option=...)

    --dataset-hook COMMANDS
          The  dataset hook is a series of commands such as those in
```

the command files that are run every time after a dataset is added onto the data stack. Its main use is to provide automatic filtering of data, but any arbitrary command can be used, so enjoy !

Corresponding command: dataset-hook(commands)

--dataset-hook-add COMMANDS
Adds the given commands to the dataset hook. See dataset-hook for more information about the dataset hook.

Corresponding command: dataset-hook-add(commands)

--dataset-hook-clear
Clears the dataset hook. See dataset-hook for more information.

Corresponding command: dataset-hook-clear()

--drop STORED-DATASET
Removes the given dataset from the stack.

Can become useful when dealing with large datasets, some of which are only used as intermediates for apply-formula or compute-contour, for instance.

Corresponding command: drop(stored-dataset)

-j, --join-datasets
Pops the last two (or number, if it is specified) datasets from the stack, concatenates them (older last) and push them back onto the stack. The name option can be used to give a name to the new dataset.

Optional arguments: name number which
Corresponding command: join-datasets(,option=...)

-L, --load DATASET
Use the current backend to load the given dataset(s) onto the data stack.

If the name option is given, the last dataset loaded this way (if dataset expansion occurs) gets named, or, if it contains a %d (or similar construct), each dataset gets named with %d replace with the number of the dataset within the expansion (starting at 0). This name can be

used to further use the dataset without remembering its number. See the type stored-dataset for more information.

Optional arguments: as ignore_hooks name where
Corresponding command: load(dataset,option=...)

--make-contour FLOAT

Optional arguments: as ignore_hooks name where which
Corresponding command: make-contour(float,option=...)

--merge-datasets
This commands merges data with matching X values from a dataset (by default the one before the last) into the last one. Data points that have no corresponding X value in the current dataset are simply ignored. If the columns option is provided, the numbered columns are use instead of the X columns (X is 1). More than one column can be provided this way, in which case *all* values must match.

This can be used to build 3D datasets for xyz-map or xy-parametric.

Optional arguments: columns number precision which
Corresponding command: merge-datasets(,option=...)

-P, --print-dataset
Prints to standard output data contained in the last dataset pushed onto the stack, or the given stored dataset if the which option is given.

Optional arguments: save which
Corresponding command: print-dataset(,option=...)

--show-stack
Displays the current contents of the dataset stack.

Mostly used for debugging when operations like merge-datasets or join-datasets don't work as expected.

Corresponding command: show-stack()

--xy-reglin

This command will get documented some day.

```
            Optional arguments: linear which
            Corresponding command: xy-reglin(,option=...)

Introspection
    Commands displaying information about the internals of ctioga2,
    such as known types/commands/backends...

    --edit-command TEXT
            Edit the given command in an editor. It will only work
            from the top directory of a ctioga2 source tree.

            Optional arguments: doc
            Corresponding command: edit-command(text,option=...)

    --edit-group TEXT
            Edit the given group in an editor. It will only work from
            the top directory of a ctioga2 source tree.

            Corresponding command: edit-group(text)

    --edit-type TEXT
            Edit the given type in an editor. It will only work from
            the top directory of a ctioga2 source tree.

            Corresponding command: edit-type(text)

    --list-commands
            List all commands known to ctioga2

            Optional arguments: format raw
            Corresponding command: list-commands(,option=...)

    --list-groups
            List all command groups known to ctioga2

            Optional arguments: raw
            Corresponding command: list-groups(,option=...)

    --list-styles
            Lists all available color sets, marker sets and the like.

            Optional arguments: raw
            Corresponding command: list-styles(,option=...)

    --list-types
            List all types known to ctioga2
```

Optional arguments: raw
Corresponding command: list-types(,option=...)

--version-raw
Prints the raw version number, without any other decoration and newline.

Corresponding command: version-raw()

Filters
The commands in this group act upon the last dataset pushed unto the data stack: they can be viewed as filters.

--avg-dup
Install the avg-dup-last command as a dataset hook (see dataset-hook): all datasets acquired after this is on will be averaged if they have identical successive values of X.

Corresponding command: avg-dup()

--avg-dup-last
Averages successive points with identical X values. This algorithm is naive with respect to the min/max values and averages them just as well, whereas one might expect something more clever.

To average over all X values when they are not successive in the dataset, you should use sort-last first.

Optional arguments: mode
Corresponding command: avg-dup-last(,option=...)

--cherry-pick TEXT
Install the cherry-pick-last command as a dataset hook (see dataset-hook): all points for which the formula returns false for subsequent datasets will be removed.

Corresponding command: cherry-pick(text)

--cherry-pick-last TEXT
Removes the data from the last dataset in the data stack for which the formula returns false.

See also the cherry-pick command to apply the selection to all datasets.

You might find it much easier to use the /where option of the plot or load commands.

Corresponding command: cherry-pick-last(text)

--smooth INTEGER
Install the smooth-last command as a dataset hook (see dataset-hook): from now on, the datasets are all smoothed

Corresponding command: smooth(integer)

--smooth-last INTEGER
Smooth the data using a simple (naive even) gaussian filter. Good for producing 'lines to guide the eye'

Corresponding command: smooth-last(integer)

--sort Install the sort-last command as a dataset hook (see dataset-hook): all subsequent datasets will be sorted according to their X values.

Corresponding command: sort()

--sort-last
Sorts the last dataset pushed unto the stack according to X values. Can be used as a filter.

This command sorts in-place.

See also sort.

Corresponding command: sort-last()

--trim INTEGER
Install the trim-last command as a dataset hook (see dataset-hook): all subsequent datasets will be trimmed to keep only every n point.

Corresponding command: trim(integer)

--trim-last INTEGER
Only keeps one every ? data point on the last dataset pushed unto the data stack. Useful when data have too many points to avoid creating heavy PDF files that take ages to display with no additional benefits.

This operation is very crude and does not average data.

See also trim.

Corresponding command: trim-last(integer)

General commands

General scope commands

--debug With this on, ctioga2 writes a whole lot of debugging information. You probably will not need that unless you intend to file a bug report or to tackle a problem yourself.

Be warned that it *will* slow down very significantly the processing of ctioga2 (up to hundreds of times slower), especially if you are not redirecting the output to a file.

Corresponding command: debug()

--echo Writes the whole command-line used to standard error, quoted in such a way that it should be usable directly for copy/paste.

Corresponding command: echo()

-e, --eval COMMANDS

Runs the given strings as commands, as if given from a command file.

Corresponding command: eval(commands)

-f, --file FILE

Reads the file and runs commands found in them, using the ctioga language.

ctioga2 -f my_file.ct2 If the /log is on, then all messages are written to a -log.txt file instead of to the terminal.

Optional arguments: log
Corresponding command: include(file,option=...)

-h, --help

```
        Prints helps about short and long options  available  when
        run from the command-line.

        Optional arguments: pager
        Corresponding command: command-line-help(,option=...)

--help-on TEXT
        Prints help about the given command

        Corresponding command: help-on(text)

--[no-]pause
        When  this  is  on,  the program will ask for confirmation
        before finishing, when errors or warnings have been shown.
        This is especially useful on windows or other environments
        where the terminal shuts down as soon as ctioga2 has  fin-
        ished.

        Corresponding command: pause(boolean)

--print-instructions
        Writes the list of all the instructions run so far.

        This is not very helpful for now, possibly.

        Corresponding command: print-instructions()

--ruby-run FILE
        Reads  the file and runs the Ruby code found inside, a bit
        like Ruby would do with the require command, excepted that
        ctioga2  does  not follow Ruby's file searching rules: you
        have to specify the full path.

        Corresponding command: ruby-run(file)

--set TEXT TEXT
        Sets the value of the variable  (first  argument)  to  the
        given second argument. No parsing is done.

        Corresponding command: set(text,text)

-v, --verbose
        With  this  on,  ctioga2  outputs  quite  a fair amount of
        informative messages.

        Corresponding command: verbose()
```

-V, --version
Prints the version of ctioga in use

Corresponding command: version()

TYPES

Most of the commands accept one or more arguments, which have different types. Here are the meanings of those types.

aligned-point
A point together with alignment specifications, used to place some elements such as legends for instance, that require alignment information.

The first two letters represent the alignment:

* t for top

* b for bottom

* c for center

* l for left and

* r for right

These letters can optionally be followed by the exact location of the point in frame coordinates. If not provided, a reasonable default value is chosen.

Examples:

* tl is a point at the top left of the frame aligned to the top and left;

* cl:0.1,0.6 is vertically centered and aligned to the left, and positioned 10% from the left and 60% from the bottom.

alignment
Vertical aligment for text. Can be one of:

* t or top

* c, center, m or midheight (vertically centered)

* B, Baseline or baseline to align at the baseline

* b or bottom

aspect-ratio
How the draw-image command respects the original image aspect ratio:

* ignore (the default) ignores the original aspect ratio

* expand expand the original box to respect aspect ratio

* contract contract the original box to respect aspect ratio

average-mode
How the avg-dup-last command :

* naive or average (the default) treats all columns (values and error bars) the same way, and average everythin

* stddev ignores the original errors, and sets the new errors to the standard deviation of the values

axis The name of the axis of a plot. It can be:

* left, top, bottom or right;

* x, xaxis, y, yaxis, which return one of the above depending on the preferences of the current plot (see xaxis and yaxis to change them);

* one of the named axes, such as the ones created by new-zaxis.

axis-decoration
Kinds of decoration on a axis line, such as nothing, lines, ticks, tick labels. Possible values:

* hidden, off, no, none: no axis at all

* line: only a line

* ticks: only ticks

* major: only major ticks

* major-num: major ticks along with their labels

* full: major ticks and labels + minor ticks

axis-or-auto
: Same thing as axis, or auto to let the style factory handle automatically.

bijection
: A pair of functions of x specifying a bidirectional coordinate transformation separated by a double colon (::), in the order from::to.

  Each of the functions must be valid Ruby code - it is not exactly mathematical functions, in particular Ruby does not like floats which are missing digits on either side of the dot : for instance, .3 and 1. are not valid. Sorry.

  In most of the usual cases, the coordinate transform is an involution, that is from and to is the same function (this is the case for a/x). In this case, you can omit the second function.

boolean Yes or no.

boolean-or-auto
: Same thing as boolean, or auto to let the style factory handle automatically.

box
: The specification for a box, such as an inset. It can be a grid specification, such as grid:0,1. For this to work, a grid must have been setup beforehand using setup-grid.

  It can also be an aligned-point together with a width and optionally a height in frame coordinates, such as:

  * cc:0.3: a box in the center of size 30% width and 30% height;

  * bl:0.1,0.2:0.7,0.2 a box starting from the point at 10% from the left and 20% from the bottom, with a width of 70% and a height of 20%.

box-shape
: The shape of a box. It can be:

  * square for a plain square box

  * round for a rounded box

color
: A color. It can take three forms:

  * a named color, see http://tioga.rubyforge.org/doc/classes/Tioga/ColorConstants.html for the list of color names.

  * an HTML color: for instance, #f00 or #ff0000 is red;

  * a list of three numbers between 0 and 1: 1,0,0 is red too.

color-or-auto
: Same thing as color, or auto to let the style factory handle automatically.

color-or-false
: A color, or none to say that nothing should be drawn.

color-or-false-or-auto
: Same thing as color-or-false, or auto to let the style factory handle automatically.

color-or-false-set
: Sets of color-or-false

color-set
: Sets of color

colormap
: A Z color map. It takes the form Color1--Color2--Color3.... All colors can optionally be followed by a number. For instance, for Red--Blue--Pink--Green, the colors are evenly spaced. In the case Red--Blue(0.1)--Pink(0.2)--Green, the Blue to Pink strech is located between Z values 0.1 and 0.2.

  If a prefix hls: or wheel: is present, then linear interpolation is done in the HLS colorspace instead of the RGB one (the default).

If a suffix :sym:_value_ is present, then the colormap is symmetric around that value.

It is also possible to directly use a color-set, in which case eveything works as if the colors of the color-set had been given directly, without Z values.

colormap-or-auto
: Same thing as colormap, or auto to let the style factory handle automatically.

commands
: ctioga2 commands, such as the ones that could be found in command files.

compute-dx
: This controls how the histograms treats unevenly spaced X values:

  * none: ignores the problem, and treats the points as if they were all evenly spaced

  * min, mindx: considers that all slots have the size of the smallest variation of X values

cumulative-histograms
: How to specify that histograms should be stacked. Can be:

  * a positive number, in which case the following histograms will be added to the numbered one (0 is the first)

  * no/false, in which case the following histograms are not stacked

  * next, in which case the following histograms get stacked on a new slot

data-point
: A point from an already-loaded Dataset. You have two ways to choose the point:

  * @13 takes the 13th point in the last dataset;

  * 0.2 takes the point the closest to 20% of the dataset.

If you need another dataset than the last one, give its number or named within brackets: {-2}0.2 is the point closest to the 20% of the one-before-last dataset.

dataset One expandable dataset.

dimension
A dimension, in absolute units, or in units of text height, figure, frame or page coordinates. It is in the form value unit where value is a number and unit can be one of pt, bp, in, cm (absolute units, same meaning as in TeX), dy (1.0 dy is the height of a text line), figure or f (for figure coordinates, i.e. the coordinates of the plot), frame or F (1.0 frame is the full size of the current subplot) and page or p (1.0 page is the whole height/width of the output file).

It can also be auto, which is 1.0 in frame units (ie the width or the height of the current plot).

dimension-or-no
A dimension, or no or none.

drawing-spec
A ctioga 1 --draw specification.

file A file name.

fill-pattern
A fill pattern, one of:

* lines:_angle_,_distance_,_width_

* vlines:_distance_,_width_

* hlines:_distance_,_width_

* xlines:_distance_,_width_,_angle_

* solid or plain

The first three are lines, of arbitrary orientation for lines, vertical for vlines and horizontal for hlines. xlines correspond to crossed perpendicular lines (the _angle_ is 45 by default). For these styles, the _dis-

tance_ and _width_ are all optional and correspond respectively to the distance between the lines and the line width.

solid or plain correspond to solid fill (i.e. not patterned).

fill-pattern-or-auto
: Same thing as fill-pattern, or auto to let the style factory handle automatically.

fill-until
: How to close the path of a curve to fill it. Can be:

  * bottom, top, left, right to fill until the named side of the plot

  * axis or xaxis to fill until the X axis (ie y = 0)

  * yaxis to fill until the Y axis (ie x = 0)

  * x:value or x=value to fill until the given X value

  * y:value or y=value to fill until the given Y value

  * close for just closing the path (doesn't look good in general)

  * none for no fill

fill-until-or-auto
: Same thing as fill-until, or auto to let the style factory handle automatically.

fill-until-set
: Sets of fill-until

float
: A floating-point number.

float-list
: A list of space-separated or comma-separated floating point numbers.

float-or-auto
: Same thing as float, or auto to let the style factory handle automatically.

float-or-false
: A floating-point number, or none.

float-or-false-or-auto
: Same thing as float-or-false, or auto to let the style factory handle automatically.

float-range
: A beginning:end range.

float-set
: Sets of float

frame-margins
: Margins around a plot, ie the distance from the side of the plot to the corresponding side of the container (most likely the whole PDF). It can take three forms:

  * dimension (applies to all sides)

  * left_right, top_bottom

  * left, right, top, bottom

  Each of these elements is a valid dimension.

  It can also be auto, in which case the position of the margins is computed automatically to accomodate the various labels/ticks.

integer An integer.

integer-list
: A list of space-separated or comma-separated integers

integer-or-auto
: Same thing as integer, or auto to let the style factory handle automatically.

internal-format
: Output format for internals.

justification
: Horizontal aligment of the (with respect to its location). Can be one of:

* l or left

* c, center

* r, right

label
: The name of an label. It can be:

  * title to mean the current plot's title.

  * axis_tick or axis_ticks or simply axis, where axis is a a valid axis. It designates the ticks of the named axis.

  * axis_label, same as above but targets the label of the named axis.

latex-font
: A LaTeX font.

  @todo document !

level
: A level on a XYZ map (that is, just a Z value).

line-cap
: A line cap style, i.e. how the line extends beyond its last point. Available choices:

  * round (extends as a half circle default)

  * butt (does not extend at all)

  * square (extends as a half square)

line-cap-or-auto
: Same thing as line-cap, or auto to let the style factory handle automatically.

line-style
: A line style, which is one of solid, dots, dashes, small_dots, a series of comma-separated numbers which are the length of the strokes and gaps, or no, none or off to mean no line.

line-style-or-auto

Same thing as line-style, or auto to let the style factory handle automatically.

line-style-set
Sets of line-style

location
A position on the plot, referenced with respect to the sides. Can be:

* left

* right

* top

* bottom

* x0, for the x = 0 position

* y0, for the y = 0 position

In addition, there will one day be the possibility to specify an offset from these locations. But that is still something to do.

marker A Tioga Marker, ie either a name from the list at http://tioga.rubyforge.org/doc/Tioga/MarkerConstants.html, such as Box, Star, Spade or two or three comma-separated numbers, _font_, _number_ and _width_. _font_ defines the font (standard PDF fonts, from 1 to 14), _number_ the number of the character within the font (between 0 and 255), and if _width_ is specified, the marker is stroked and not filled, and the number is the line width for the stroke.

marker-or-auto
Same thing as marker, or auto to let the style factory handle automatically.

marker-set
Sets of marker

object A named object (whose name was given using the /id= option to the appropriate command).

objects A list of comma-separated objects, or a class specifica-

tion starting with a .

partial-float-range
: A beginning:end range, where either of the endpoints can be ommitted.

pdf-font
: A number between 1 and 14 that designates one of the 14 standard PDF fonts. (see for instance http://tioga.rubyforge.org/doc/classes/Tioga/MarkerConstants.html for more information).

point
: A given point on a figure.

regexp
: A plain string or a regular expression (the latter being enclosed within /.../).

region-side
: Within a region, designates the position of the curve with respect to the region:

  * above

  * below

  * ignore if this curve is not to be taken into account

region-side-or-auto
: Same thing as region-side, or auto to let the style factory handle automatically.

region-side-set
: Sets of region-side

stored-dataset
: A dataset that has already been loaded. It is either:

  * A number, in which case it specifies the index inside the stack. 0 is the first on that was pushed onto the stack (the oldest dataset), 1 the second, -1 the last one, -2 the one before the last and so on. (it works just like Ruby's arrays).

  * The name of a named dataset.

  * # followed by the id of a plot element

style-aspect
: This type designs which aspect of the style of a xy-parametric plot is controlled by a certain Z value. It can take the following values:

  * marker_color: the color for the markers

  * marker_size/marker_scale: the size of the markers

text
: Plain text.

text-adjust-mode
: Mode for text size adjustment

  * old for the old style heuristics

  * both for both the old style heuristics and the measures, taking whichever of those is the biggest

  * measure for only measured text size (but watch out for axis ticks !)

text-align
: Horizontal aligment for text within its box. Only of use for texts with a given text width. Can be one of:

  * l or left

  * c, center

  * r, right

  * no or none to not issue aligning commands, in which case you get full LaTeX-justified paragraphs (probably with a lot of hyphens).

text-list
: A list of comma-separated texts. If you must include a comma inside the texts, then use || as a separator.

text-or-auto
: Same thing as text, or auto to let the style factory handle automatically.

text-set

Sets of text

ticks-side
On what side of an axis line are the ticks positioned:

* inside: on the inside

* outside: on the outside

* both: on both the inside and the outside

ENVIRONMENT VARIABLES
If the environment variables CTIOGA2_PRE or CTIOGA2_POST are set, they are split into words according to shell rules (see the Shellwords.shellwords ruby function for more information) and prepended or appended to the command-line arguments. They don't leave any trace in the actual command-line (so, for instance, --echo won't be aware of them).

AUTHOR
ctioga2 was written by Vincent Fourmond. Tioga was written by Bill Paxton.

BUGS
ctioga2 is most certainly not bug-free. You can use the facility at rubyforge.org to report any bug you notice: http://rubyforge.org/tracker/?group_id=8218. You can also use the same facility for feature requests and to provide use with patches.

Alternatively, you can use the forums at http://rubyforge.org/forum/?group_id=8218 or the ctioga2-users@rubyforge.org mailing list to report any kind of problems or suggestions.

SEE ALSO
xpdf(1), pdflatex(1), open(1), gnuplot(1), ctioga(1) (the original ctioga)

The original tarball includes an examples/ with various examples demonstrating different features of ctioga2, and in particular the different ways to use it: command-line or command-file.

It also includes a tests/ directory containing test shell scripts. Runnning these shell scripts should give you a decent idea of ctioga2's possibilities while assuring that it did install properly.

Useful information, documentation and most up-to-date news can be found at ctioga2's website, at http://ctioga2.rubyforge.org/.

More information about Tioga and its rdoc documentation can be found at http://www.kitp.ucsb.edu/~paxton/tioga.html.