

# Package ‘rNGCircos’

December 14, 2020

**Type** Package

**Title** Next Generation Circos in R

**Version** 1.0.0

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**Description**

A R package based on NGCircos: Next-generation Circos for data visualization and interpretation

**License** MIT

**Encoding** UTF-8

**LazyData** true

**Depends** R (>= 3.1.0)

**Imports** RColorBrewer, htmlwidgets, jsonlite, plyr, grDevices

**RoxygenNote** 7.1.0

**Suggests** knitr, rmarkdown

**VignetteBuilder** knitr

## R topics documented:

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|            |                              |
|------------|------------------------------|
| arcExample | <i>Arc plot example data</i> |
|------------|------------------------------|

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**Description**

The data is in matrix with row names

**Usage**

arcExample

**Format**

A data frame with 7 columns:

- chr** chromosome
- start** start position
- end** end position
- color** color
- des** description
- link** hyperlink
- html** The external html language

---

|               |                                 |
|---------------|---------------------------------|
| bubbleExample | <i>Bubble plot example data</i> |
|---------------|---------------------------------|

---

**Description**

The data is in matrix with row names

**Usage**

```
bubbleExample
```

**Format**

A data frame with 8 columns:

**chr** chromosome

**start** start position

**end** end position

**name** name for description

**value** value

**color** specified color for bubble

**layer** layer number

**html** The external html language

---

|              |                                |
|--------------|--------------------------------|
| chordExample | <i>Chord plot example data</i> |
|--------------|--------------------------------|

---

**Description**

The data is in matrix with row names

**Usage**

```
chordExample
```

**Format**

A data frame in which each value represents the relationship from a column to a row:

**column name** the name for each arc

**row** the order and number is same as column, representing the same items

---

`cnvExample`*Cnv module example data*

---

**Description**

The data is in matrix with row names

**Usage**`cnvExample`**Format**

A data frame with 7 columns:

**chr** chromosome

**start** start position

**end** end position

**value** value

**link** hyperlink for cnv

**color** color

**html** The external html language

---

`geneExample`*Gene plot example data*

---

**Description**

The data is in matrix with row names

**Usage**`geneExample`**Format**

A data frame with 8 columns:

**chr** chromosome

**strand** strand, - or +

**start** start position

**end** end position

**type** region type, gene or utr or cds

**name** name for description

**link** hyperlink for this region

**html** The external html language

---

|                |                                  |
|----------------|----------------------------------|
| heatmapExample | <i>Heatmap plot example data</i> |
|----------------|----------------------------------|

---

**Description**

The data is in matrix with row names

**Usage**

```
heatmapExample
```

**Format**

A data frame with 7 columns:

**chr** chromosome

**start** start position

**end** end position

**name** name for description

**value** value

**layer** layer number

**html** The external html language

---

|                  |                                    |
|------------------|------------------------------------|
| histogramExample | <i>Histogram plot example data</i> |
|------------------|------------------------------------|

---

**Description**

The data is in matrix with row names

**Usage**

```
histogramExample
```

**Format**

A data frame with 7 columns:

**chr** chromosome

**start** start position

**end** end position

**name** name for description

**link** hyperlink

**value** value

**html** The external html language

---

|             |                               |
|-------------|-------------------------------|
| lineExample | <i>Line plot example data</i> |
|-------------|-------------------------------|

---

**Description**

The data is in matrix with row names

**Usage**

```
lineExample
```

**Format**

A data frame with 5 columns:

**chr** chromosome

**pos** position

**des** description

**value** value

**html** The external html language

---

|             |                               |
|-------------|-------------------------------|
| linkExample | <i>Link plot example data</i> |
|-------------|-------------------------------|

---

**Description**

The data is in matrix with row names

**Usage**

```
linkExample
```

**Format**

A data frame with 11 columns:

**g1chr** first chromosome

**g1start** first start position

**g1end** first end position

**g2chr** second chromosome

**g2start** second start position

**g2end** second end position

**g1name** first name

**g2name** second name

**fusion** fusion name

**link** hyperlink for link line

**html** The external html language

---

|                 |                                   |
|-----------------|-----------------------------------|
| lollipopExample | <i>Lollipop plot example data</i> |
|-----------------|-----------------------------------|

---

**Description**

The data is in matrix with row names

**Usage**

```
lollipopExample
```

**Format**

A data frame with 12 columns:

**protein** protein name

**chr** chromosome

**pos** position

**strand** strand, - or +

**CancerTypeNumber** Cancer type number

**color** color

**link** hyperlink

**Consequence** consequence

**AA\_pos** AA\_pos

**AA\_change** AA\_change

**type** type for mutation, Hetero or Homo

**html** The external html language

---

|          |                 |
|----------|-----------------|
| NGCircos | <i>NGCircos</i> |
|----------|-----------------|

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**Description**

A R packages based on Next Generation Circos

**Usage**

```
NGCircos(
  moduleList = NGCircosModuleList(),
  genome = "hg19",
  genome2 = "hg19",
  genomeFillColor = "Spectral",
  chrPad = 0.02,
  width = NULL,
  height = NULL,
  innerRadius = 216,
```

```
outerRadius = 240,  
svgClassName = "NGCircos",  
displayGenomeBorder = TRUE,  
genomeBorderColor = "#000",  
genomeBorderSize = 0.5,  
genomeTicksDisplay = FALSE,  
genomeTicksLen = 5,  
genomeTicksColor = "#000",  
genomeTicksTextSize = "0.6em",  
genomeTicksRealLength = TRUE,  
genomeTicksTextColor = "#000",  
genomeTicksScale = 3e+07,  
genomeTicksOffset = 0,  
genomeLabelDisplay = TRUE,  
genomeLabelTextSize = "10pt",  
genomeLabelTextColor = "#000",  
genomeLabelDx = 0,  
genomeLabelDy = 0,  
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compareEventGroupDistance = 0,  
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CNVMouseClickedTextPostionY = 0,  
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CNVMouseEnterArcStrokeColor = "#F26223",  
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CNVMouseLeaveArcOpacity = 1,  
CNVMouseLeaveArcStrokeColor = "#F26223",  
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BUBBLEMouseOverTooltipsBorderStyle = "solid",
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SNPMouseCombinationImageTitleColor = "black",
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SNPMouseCombinationImageWidth = 300,
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LINKMouseEnterOpacity = 1,
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```
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```

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LINEMouseLeaveLineStrokeColor = "none",
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LINEMouseOverTooltipsSetting = "style1",
LINEMouseOverTooltipsHtml = " ",

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LINEMouseOverTooltipsOpacity = 1,
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WIGMouseClickedLineStrokeColor = "none",
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WIGMouseClickedFillColor = "none",
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WIGMouseOverTooltipsHtml = " ",
WIGMouseOverTooltipsPosition = "absolute",
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```
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SCATTERMouseClickedCircleOpacity = 1,
SCATTERMouseClickedCircleStrokeColor = "none",
SCATTERMouseClickedCircleStrokeWidth = "none",
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SCATTERMouseClickedTextPostionX = 1,
SCATTERMouseClickedTextPostionY = 10,
SCATTERMouseClickedTextDrag = TRUE,
SCATTERMouseDownDisplay = FALSE,
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SCATTERMouseDownCircleOpacity = 1,
SCATTERMouseDownCircleStrokeColor = "none",
SCATTERMouseDownCircleStrokeWidth = "none",
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SCATTERMouseOverCircleStrokeWidth = "none",
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ARCMouseClickArcOpacity = 1,
ARCMouseClickArcStrokeColor = "none",
ARCMouseClickArcStrokeWidth = "none",
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ARCMouseClickTextColor = "red",
ARCMouseClickTextSize = 8,
ARCMouseClickTextPostionX = 1,
ARCMouseClickTextPostionY = 10,
ARCMouseClickTextDrag = TRUE,
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ARCMouseDownArcStrokeColor = "none",
ARCMouseDownArcStrokeWidth = "none",
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ARCMouseLeaveArcStrokeColor = "none",
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ARCMouseMoveColor = "red",
```

```
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ARCMouseOverArcOpacity = 1,
ARCMouseOverArcStrokeColor = "none",
ARCMouseOverArcStrokeWidth = "none",
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ARCMouseOverTooltipsPosition = "absolute",
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ARCMouseOverTooltipsBorderStyle = "solid",
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GENMouseEvent = TRUE,
GENMouseClickedDisplay = FALSE,
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GENMouseClickedArcOpacity = 1,
GENMouseClickedArcStrokeColor = "none",
GENMouseClickedArcStrokeWidth = "none",
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GENMouseClickedTextSize = 8,
GENMouseClickedTextPostionX = 1,
GENMouseClickedTextPostionY = 10,
GENMouseClickedTextDrag = TRUE,
GENMouseDownDisplay = FALSE,
GENMouseDownColor = "red",
GENMouseDownArcOpacity = 1,
GENMouseDownArcStrokeColor = "none",
GENMouseDownArcStrokeWidth = "none",
GENMouseEnterDisplay = FALSE,
GENMouseEnterColor = "red",
GENMouseEnterArcOpacity = 1,
GENMouseEnterArcStrokeColor = "none",
GENMouseEnterArcStrokeWidth = "none",
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GENEMouseLeaveArcOpacity = 1,
GENEMouseLeaveArcStrokeColor = "none",
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GENEMouseMoveColor = "red",
GENEMouseMoveArcOpacity = 1,
GENEMouseMoveArcStrokeColor = "none",
GENEMouseMoveArcStrokeWidth = "none",
GENEMouseOutDisplay = FALSE,
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GENEMouseOutColor = "red",
GENEMouseOutArcOpacity = 1,
GENEMouseOutArcStrokeColor = "none",
GENEMouseOutArcStrokeWidth = "none",
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GENEMouseUpColor = "red",
GENEMouseUpArcOpacity = 1,
GENEMouseUpArcStrokeColor = "none",
GENEMouseUpArcStrokeWidth = "none",
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GENEMouseOverColor = "red",
GENEMouseOverArcOpacity = 1,
GENEMouseOverArcStrokeColor = "none",
GENEMouseOverArcStrokeWidth = "none",
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GENEMouseOverTooltipsBackgroundColor = "white",
GENEMouseOverTooltipsBorderStyle = "solid",
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GENEMouseOverTooltipsBorderRadius = "3px",
GENEMouseOverTooltipsOpacity = 1,
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LOLLIPOPMouseEvent = TRUE,
LOLLIPOPMouseClickDisplay = FALSE,
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LOLLIPOPMouseClickCircleSize = 2,
LOLLIPOPMouseClickCircleOpacity = 1,
LOLLIPOPMouseClickCircleStrokeColor = "none",
LOLLIPOPMouseClickCircleStrokeWidth = "none",
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LOLLIPOPMouseClickTextPostionX = 1,
LOLLIPOPMouseClickTextPostionY = 10,
LOLLIPOPMouseClickTextDrag = TRUE,
LOLLIPOPMouseDownDisplay = FALSE,
LOLLIPOPMouseDownColor = "red",
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LOLLIPOPMouseDownCircleSize = 2,
LOLLIPOPMouseDownCircleOpacity = 1,
LOLLIPOPMouseDownCircleStrokeColor = "none",
LOLLIPOPMouseDownCircleStrokeWidth = "none",
LOLLIPOPMouseEnterDisplay = FALSE,
LOLLIPOPMouseEnterColor = "red",
LOLLIPOPMouseEnterCircleSize = 2,
LOLLIPOPMouseEnterCircleOpacity = 1,
LOLLIPOPMouseEnterCircleStrokeColor = "none",
LOLLIPOPMouseEnterCircleStrokeWidth = "none",
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LOLLIPOPMouseLeaveColor = "red",
LOLLIPOPMouseLeaveCircleSize = 2,
LOLLIPOPMouseLeaveCircleOpacity = 1,
LOLLIPOPMouseLeaveCircleStrokeColor = "none",
LOLLIPOPMouseLeaveCircleStrokeWidth = "none",
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LOLLIPOPMouseMoveColor = "red",
LOLLIPOPMouseMoveCircleSize = 2,
LOLLIPOPMouseMoveCircleOpacity = 1,
LOLLIPOPMouseMoveCircleStrokeColor = "none",
LOLLIPOPMouseMoveCircleStrokeWidth = "none",
LOLLIPOPMouseOutDisplay = FALSE,
LOLLIPOPMouseOutAnimationTime = 500,
LOLLIPOPMouseOutColor = "red",
LOLLIPOPMouseOutCircleSize = 2,
LOLLIPOPMouseOutCircleOpacity = 1,
LOLLIPOPMouseOutCircleStrokeColor = "none",
LOLLIPOPMouseOutCircleStrokeWidth = "none",
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LOLLIPOPMouseUpColor = "red",
LOLLIPOPMouseUpCircleSize = 2,
LOLLIPOPMouseUpCircleOpacity = 1,
LOLLIPOPMouseUpCircleStrokeColor = "none",
LOLLIPOPMouseUpCircleStrokeWidth = "none",
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LOLLIPOPMouseOverColor = "red",
LOLLIPOPMouseOverCircleSize = 2,
LOLLIPOPMouseOverCircleOpacity = 1,
LOLLIPOPMouseOverCircleStrokeColor = "none",
LOLLIPOPMouseOverCircleStrokeWidth = "none",
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LOLLIPOPMouseOverTooltipsPosition = "absolute",
LOLLIPOPMouseOverTooltipsBackgroundColor = "white",
LOLLIPOPMouseOverTooltipsBorderStyle = "solid",
LOLLIPOPMouseOverTooltipsBorderWidth = 0,
LOLLIPOPMouseOverTooltipsPadding = "3px",
LOLLIPOPMouseOverTooltipsBorderRadius = "3px",
LOLLIPOPMouseOverTooltipsOpacity = 1,
elementId = NULL,
...

```

)

**Arguments**

|  |  |
|--|--|
| moduleList   | Module list displayed in plot.   |
| genome   | Could be either 'hg19', which is defaultly set to use chromosomes of hg19, or a list of chromosomes with length, for example, list("chr1"=100,"chr2"=200). |
| genome2  | Second genome when compare module is applied, format is same as genome   |
| genomeFillColor  | Could be either a color palette from RColorBrewer, or a list of color name, for example, list("yellow","rgb(1,255,255)")                                   |
| chrPad   | Distance between each chromosome, default is 0.04  |
| width, height  | The width and height for svg element, could be px or percent or auto.  |
| innerRadius  | Default 216, Inner radius of chromosome  |
| outerRadius  | Default 240, Outer radius of chromosome  |
| svgClassName   | The svg class name   |
| displayGenomeBorder, genomeBorderColor, genomeBorderSize   | Should the reference genome have borders?  |
| genomeTicksDisplay, genomeTicksLen, genomeTicksColor, genomeTicksTextSize, genomeTicksTextColor, genomeTicksTextDy | Whether display the ticks for chromosome panel. Other parameters only works when genomeTicksDisplay is TRUE and their details are available on document.   |
| genomeLabelDisplay, genomeLabelTextSize, genomeLabelTextColor, genomeLabelDx, genomeLabelDy                        | Whether display the label for chromosome panel. Other parameters only works when genomeTicksDisplay is TRUE and their details are available on document.   |
| compareEvent   | Default False, open/not COMPARE module   |
| compareEventGroupGapRate   | Default 0.1, control the two-side gap rate on each group of genome   |
| compareEventGroupDistance  | Default 0, distance between two groups of genome   |
| zoom   | Whether or not the plot is zoomable?   |
| TEXTModuleDragEvent  | Are text annotations draggable?  |
| CNVxlink   | Default False, add/not xlink for CNV module  |
| CNVMouseEvent  | Default True, open/not open mouse event of CNV module  |
| CNVMouseClickedDisplay   | Default False, show/not the tooltip when mouse click on a CNV point.   |
| CNVMouseClickedColor   | Color when mouse clicking  |
| CNVMouseClickedArcOpacity  | Arc opacity when mouse clicking the element  |
| CNVMouseClickedArcStrokeColor  | Arc stroke color when mouse clicking the element   |
| CNVMouseClickedArcStrokeWidth  | Arc stroke width when mouse clicking the element   |
| CNVMouseClickedTextFromData  | Text column when mouse clicking the element  |

CNVMouseClickTextOpacity  
     Text opacity when mouse clicking the element  
 CNVMouseClickTextColor  
     Text color when mouse clicking the element  
 CNVMouseClickTextSize  
     Text size when mouse clicking the element  
 CNVMouseClickTextPostionX, CNVMouseClickTextPostionY  
     Text coordinates when mouse clicking the element  
 CNVMouseClickTextDrag  
     Whether text is draggable when mouse clicking the element  
 CNVMouseDownDisplay  
     Default False, show/not the tooltip when mouse click down a CNV point.  
 CNVMouseDownColor  
     Color when mouse moving down the element  
 CNVMouseDownArcOpacity  
     Arc opacity when mouse moving down the element  
 CNVMouseDownArcStrokeColor  
     Arc stroke color when mouse moving down the element  
 CNVMouseDownArcStrokeWidth  
     Arc stroke width when mouse moving down the element  
 CNVMouseEnterDisplay  
     Default False, show/not the tooltip when mouse mover over a CNV point.  
 CNVMouseEnterColor  
     Color when mouse entering the element  
 CNVMouseEnterArcOpacity  
     Arc opacity when mouse entering the element  
 CNVMouseEnterArcStrokeColor  
     Arc stroke color when mouse entering the element  
 CNVMouseEnterArcStrokeWidth  
     Arc stroke width when mouse entering the element  
 CNVMouseLeaveDisplay  
     Default False, show/not the tooltip when mouse mover leave a CNV point.  
 CNVMouseLeaveColor  
     Color when mouse leaving the element  
 CNVMouseLeaveArcOpacity  
     Arc opacity when mouse leaving the element  
 CNVMouseLeaveArcStrokeColor  
     Arc stroke color when mouse leaving the element  
 CNVMouseLeaveArcStrokeWidth  
     Arc stroke width when mouse leaving the element  
 CNVMouseMoveDisplay  
     Default False, show/not the tooltip when mouse move into a CNV point.  
 CNVMouseMoveColor  
     Color when mouse moving in the element  
 CNVMouseMoveArcOpacity  
     Arc opacity when mouse moving in the element  
 CNVMouseMoveArcStrokeColor  
     Arc stroke color when mouse moving in the element



CNVMouseMoveArcStrokeWidth  
Arc stroke width when mouse moving in the element

CNVMouseOutDisplay  
Default False, hide/not tooltip when mouse is not hovering a CNV point anymore.

CNVMouseOutAnimationTime  
Animation time when mouse moving out the element

CNVMouseOutColor  
Color when mouse moving out the element

CNVMouseOutArcOpacity  
Arc opacity when mouse moving out the element

CNVMouseOutArcStrokeColor  
Arc stroke color when mouse moving out the element

CNVMouseOutArcStrokeWidth  
Arc stroke width when mouse moving out the element

CNVMouseUpDisplay  
Default False, show/not the tooltip when mouse click up a CNV point.

CNVMouseUpColor  
Color when mouse moving up the element

CNVMouseUpArcOpacity  
Arc opacity when mouse clicking the element

CNVMouseUpArcStrokeColor  
Arc stroke color when mouse clicking the element

CNVMouseUpArcStrokeWidth  
Arc stroke width when mouse clicking the element

CNVMouseOverDisplay  
Default False, show/not the tooltip when mouse hover on a CNV point.

CNVMouseOverColor  
Color when mouse moving over the element

CNVMouseOverArcOpacity  
Arc opacity when mouse moving over the element

CNVMouseOverArcStrokeColor  
Arc stroke color when mouse moving over the element

CNVMouseOverArcStrokeWidth  
Arc stroke width when mouse moving over the element

CNVMouseOverTooltipsSetting  
Default "style1"

CNVMouseOverTooltipsHtml  
Default " "

CNVMouseOverTooltipsPosition  
Default "absolute"

CNVMouseOverTooltipsBackgroundColor  
Default "white"

CNVMouseOverTooltipsBorderStyle  
Default "solid"

CNVMouseOverTooltipsBorderWidth  
Default 0

CNVMouseOverTooltipsPadding  
Default "3px"

CNVMouseOverTooltipsBorderRadius  
Default "3px"

CNVMouseOverTooltipsOpacity  
Default 0.8

HEATMAPMouseEvent  
Default True, open/not open mouse event of HEATMAP module

HEATMAPMouseClickedDisplay  
Default False, show/not the tooltip when mouse click on a HEATMAP point.

HEATMAPMouseClickedColor  
Color when mouse clicking

HEATMAPMouseClickedOpacity  
Opacity when mouse clicking

HEATMAPMouseClickedStrokeColor  
Stroke color when mouse clicking

HEATMAPMouseClickedStrokeWidth  
Stroke width when mouse clicking

HEATMAPMouseDownDisplay  
Default False, show/not the tooltip when mouse click down a HEATMAP point.

HEATMAPMouseDownColor  
Color when mouse moving down the element

HEATMAPMouseDownOpacity  
Opacity when mouse moving down the element

HEATMAPMouseDownStrokeColor  
Stroke color when mouse moving down the element

HEATMAPMouseDownStrokeWidth  
Stroke width when mouse moving down the element

HEATMAPMouseEnterDisplay  
Default False, show/not the tooltip when mouse mover over a HEATMAP point.

HEATMAPMouseEnterColor  
Color when mouse entering the element

HEATMAPMouseEnterOpacity  
Opacity when mouse entering the element

HEATMAPMouseEnterStrokeColor  
Stroke color when mouse entering the element

HEATMAPMouseEnterStrokeWidth  
Stroke width when mouse entering the element

HEATMAPMouseLeaveDisplay  
Default False, show/not the tooltip when mouse mover leave a HEATMAP point.

HEATMAPMouseLeaveColor  
Color when mouse leaving the element

HEATMAPMouseLeaveOpacity  
Opacity when mouse leaving the element

HEATMAPMouseLeaveStrokeColor  
Stroke color when mouse leaving the element

HEATMAPMouseLeaveStrokeWidth  
Stroke width when mouse leaving the element

HEATMAPMouseMoveDisplay  
Default False, show/not the tooltip when mouse move into a HEATMAP point.

HEATMAPMouseMoveColor  
Color when mouse moving in the element

HEATMAPMouseMoveOpacity  
Opacity when mouse moving in the element

HEATMAPMouseMoveStrokeColor  
Stroke color when mouse moving in the element

HEATMAPMouseMoveStrokeWidth  
Stroke width when mouse moving in the element

HEATMAPMouseOutDisplay  
Default False, hide/not tooltip when mouse is not hovering a HEATMAP point anymore.

HEATMAPMouseOutAnimationTime  
Animation time when mouse moving out the element

HEATMAPMouseOutColor  
Color when mouse moving out the element

HEATMAPMouseOutOpacity  
Opacity when mouse moving out the element

HEATMAPMouseOutStrokeColor  
Stroke color when mouse moving out the element

HEATMAPMouseOutStrokeWidth  
Stroke width when mouse moving out the element

HEATMAPMouseUpDisplay  
Default False, show/not the tooltip when mouse click up a HEATMAP point.

HEATMAPMouseUpColor  
Color when mouse moving up the element

HEATMAPMouseUpOpacity  
Opacity when mouse moving up the element

HEATMAPMouseUpStrokeColor  
Stroke color when mouse moving up the element

HEATMAPMouseUpStrokeWidth  
Stroke width when mouse moving up the element

HEATMAPMouseOverDisplay  
Default False, show/not the tooltip when mouse hover on a HEATMAP point.

HEATMAPMouseOverColor  
Color when mouse moving over the element

HEATMAPMouseOverOpacity  
Opacity when mouse moving over the element

HEATMAPMouseOverStrokeColor  
Stroke color when mouse moving over the element

HEATMAPMouseOverStrokeWidth  
Stroke width when mouse moving over the element

HEATMAPMouseOverTooltipsSetting  
Default "style1"

HEATMAPMouseOverTooltipsHtml  
Default " "

HEATMAPMouseOverTooltipsPosition  
Default "absolute"

HEATMAPMouseOverTooltipsBackgroundColor  
Default "white"

HEATMAPMouseOverTooltipsBorderStyle  
     Default "solid"  
 HEATMAPMouseOverTooltipsBorderWidth  
     Default 0  
 HEATMAPMouseOverTooltipsPadding  
     Default "3px"  
 HEATMAPMouseOverTooltipsBorderRadius  
     Default "3px"  
 HEATMAPMouseOverTooltipsOpacity  
     Default 0.8  
 BUBBLExlink      Default False, add/not xlink for BUBBLE module  
 BUBBLEMouseEvent  
     Default True, open/not open mouse event of BUBBLE module  
 BUBBLEMouseClickedDisplay  
     Default False, show/not the tooltip when mouse click on a BUBBLE point.  
 BUBBLEMouseClickedColor  
     Color when mouse clicking  
 BUBBLEMouseClickedOpacity  
     Opacity when mouse clicking  
 BUBBLEMouseClickedStrokeColor  
     Stroke color when mouse clicking  
 BUBBLEMouseClickedStrokeWidth  
     Stroke width when mouse clicking  
 BUBBLEMouseDownDisplay  
     Default False, show/not the tooltip when mouse click down a BUBBLE point.  
 BUBBLEMouseDownColor  
     Color when mouse moving down the element  
 BUBBLEMouseDownOpacity  
     Opacity when mouse moving down the element  
 BUBBLEMouseDownStrokeColor  
     Stroke color when mouse moving down the element  
 BUBBLEMouseDownStrokeWidth  
     Stroke width when mouse moving down the element  
 BUBBLEMouseEnterDisplay  
     Default False, show/not the tooltip when mouse mover over a BUBBLE point.  
 BUBBLEMouseEnterColor  
     Color when mouse entering the element  
 BUBBLEMouseEnterOpacity  
     Opacity when mouse entering the element  
 BUBBLEMouseEnterStrokeColor  
     Stroke color when mouse entering the element  
 BUBBLEMouseEnterStrokeWidth  
     Stroke width when mouse entering the element  
 BUBBLEMouseLeaveDisplay  
     Default False, show/not the tooltip when mouse mover leave a BUBBLE point.  
 BUBBLEMouseLeaveColor  
     Color when mouse leaving the element  
 BUBBLEMouseLeaveOpacity  
     Opacity when mouse leaving the element

BUBBLEMouseLeaveStrokeColor  
Stroke color when mouse leaving the element

BUBBLEMouseLeaveStrokeWidth  
Stroke width when mouse leaving the element

BUBBLEMouseMoveDisplay  
Default False, show/not the tooltip when mouse move into a BUBBLE point.

BUBBLEMouseMoveColor  
Color when mouse moving in the element

BUBBLEMouseMoveOpacity  
Opacity when mouse moving in the element

BUBBLEMouseMoveStrokeColor  
Stroke color when mouse moving in the element

BUBBLEMouseMoveStrokeWidth  
Stroke width when mouse moving in the element

BUBBLEMouseOutDisplay  
Default False, hide/not tooltip when mouse is not hovering a BUBBLE point anymore.

BUBBLEMouseOutAnimationTime  
Animation time when mouse moving out the element

BUBBLEMouseOutColor  
Color when mouse moving out the element

BUBBLEMouseOutOpacity  
Opacity when mouse moving out the element

BUBBLEMouseOutStrokeColor  
Stroke color when mouse moving out the element

BUBBLEMouseOutStrokeWidth  
Stroke width when mouse moving out the element

BUBBLEMouseUpDisplay  
Default False, show/not the tooltip when mouse click up a BUBBLE point.

BUBBLEMouseUpColor  
Color when mouse moving up the element

BUBBLEMouseUpOpacity  
Opacity when mouse moving up the element

BUBBLEMouseUpStrokeColor  
Stroke color when mouse moving up the element

BUBBLEMouseUpStrokeWidth  
Stroke width when mouse moving up the element

BUBBLEMouseOverDisplay  
Default False, show/not the tooltip when mouse hover on a BUBBLE point.

BUBBLEMouseOverColor  
Color when mouse moving over the element

BUBBLEMouseOverOpacity  
Opacity when mouse moving over the element

BUBBLEMouseOverStrokeColor  
Stroke color when mouse moving over the element

BUBBLEMouseOverStrokeWidth  
Stroke width when mouse moving over the element

BUBBLEMouseOverTooltipsSetting  
     Default "style1"  
 BUBBLEMouseOverTooltipsHtml  
     Default " "  
 BUBBLEMouseOverTooltipsPosition  
     Default "absolute"  
 BUBBLEMouseOverTooltipsBackgroundColor  
     Default "white"  
 BUBBLEMouseOverTooltipsBorderStyle  
     Default "solid"  
 BUBBLEMouseOverTooltipsBorderWidth  
     Default 0  
 BUBBLEMouseOverTooltipsPadding  
     Default "3px"  
 BUBBLEMouseOverTooltipsBorderRadius  
     Default "3px"  
 BUBBLEMouseOverTooltipsOpacity  
     Default 0.8  
 SNPxlink           Default False, add/not xlink for SNP module  
 SNPMouseEvent    Default True, open/not open mouse event of SNP module  
 SNPMouseCombinationEvent  
     Default False, open/not COMBINATION module for SNP module  
 SNPMouseCombinationImageDisplay  
     Default False, open/not image display in COMBINATION module for SNP  
     module  
 SNPMouseCombinationImageTitle  
     Title of the image  
 SNPMouseCombinationImageTitleSize, SNPMouseCombinationImageTitleWeight, SNPMouseCombinationImageTitleColor  
     Size, weight and color of the title  
 SNPMouseCombinationImagePositionX, SNPMouseCombinationImagePositionY  
     Coordinates for image  
 SNPMouseCombinationImageHeight, SNPMouseCombinationImageWidth  
     Height and width of image  
 SNPMouseCombinationGraphDisplay  
     Default False, open/not graph display in COMBINATION module for SNP module  
 SNPMouseCombinationGraphTitle  
     Title of the graph  
 SNPMouseCombinationGraphTitleSize, SNPMouseCombinationGraphTitleWeight, SNPMouseCombinationGraphTitleColor  
     Size, weight and color of the title  
 SNPMouseCombinationGraphType  
     Type of graph  
 SNPMouseCombinationGraphPositionX, SNPMouseCombinationGraphPositionY  
     Coordinates for graph  
 SNPMouseCombinationGraphHeight, SNPMouseCombinationGraphWidth  
     Height and width for graph  
 SNPMouseCombinationGraphHistogramBarColor  
     Bar color of histogram graph

SNPMouseCombinationGraphHistogramPadding  
 Padding between bar of histogram graph

SNPMouseCombinationGraphHistogramPositionCorrectX  
 Correction distance of X axis in histogram

SNPMouseCombinationGraphPieAutoColor  
 Whether use auto color for pie graph or not

SNPMouseCombinationGraphPieColor  
 Color for pie graph if auto color is false

SNPMouseCombinationGraphPieSize  
 Size of pie graph

SNPMouseCombinationGraphPieStroke  
 Whether each pie has a stroke or not

SNPMouseCombinationGraphPieStrokeColor, SNPMouseCombinationGraphPieStrokeWidth  
 The stroke color and width for pie graph

SNPMouseCombinationGraphPieOpacity  
 Opacity for pie graph

SNPMouseCombinationGraphLineType, SNPMouseCombinationGraphLineColor, SNPMouseCombinationGraphLineWidth  
 Line type, color and width for line graph

SNPMouseCombinationGraphLinePoint  
 Whether display the broken point in line graph

SNPMouseCombinationGraphLinePointSize  
 Size of broken point

SNPMouseCombinationGraphLinePointAutoColor  
 Whether display the broken point in auto color

SNPMouseCombinationGraphLinePointColor  
 Color for broken point if auto color is false

SNPMouseCombinationGraphLinePointStroke  
 Whether display the broken point stroke

SNPMouseCombinationGraphLinePointStrokeColor, SNPMouseCombinationGraphLinePointStrokeWidth  
 The stroke color and width for broken point

SNPMouseCombinationGraphLinePointOpacity  
 Opacity for broken line

SNPMouseCombinationGraphLinePositionCorrectX  
 Correction distance of X axis for line

SNPMouseCombinationTextDisplay  
 Default False, open/not text display in COMBINATION module for SNP module

SNPMouseCombinationTextColor, SNPMouseCombinationTextSize, SNPMouseCombinationTextWeight  
 The color, size and weight for text

SNPMouseCombinationTextPositionCorrectX, SNPMouseCombinationTextPositionCorrectY  
 The coordinates for text

SNPMouseClickDisplay  
 Default False, show/not the tooltip when mouse click on a SNP point.

SNPMouseClickColor  
 Color after clicking the element

SNPMouseClickCircleSize  
 Circle size after clicking the element

SNPMouseClickCircleOpacity  
 Opacity after clicking the element

SNPMouseClickCircleStrokeColor  
Stroke color after clicking the element

SNPMouseClickCircleStrokeWidth  
Stroke width after clicking the element

SNPMouseClickTextFromData  
First,second,third,fourth column data click to show

SNPMouseClickTextOpacity  
Text opacity after clicking the element

SNPMouseClickTextColor  
Text color after clicking the element

SNPMouseClickTextSize  
Text size after clicking the element

SNPMouseClickTextPostionX, SNPMouseClickTextPostionY  
Text coordinate after clicking the element

SNPMouseClickTextDrag  
Whether text is draggable for element

SNPMouseDownDisplay  
Default False, show/not the tooltip when mouse click down a SNP point.

SNPMouseDownColor  
Color after mouse moving down the element

SNPMouseDownCircleSize  
Circle size after mouse moving down the element

SNPMouseDownCircleOpacity  
Circle opacity after mouse moving down the element

SNPMouseDownCircleStrokeColor  
Circle stroke color after mouse moving down the element

SNPMouseDownCircleStrokeWidth  
Circle stroke width after mouse moving down the element

SNPMouseEnterDisplay  
Default False, show/not the tooltip when mouse mover over a SNP point.

SNPMouseEnterColor  
Color after mouse entering enter the element

SNPMouseEnterCircleSize  
Circle size after mouse entering the element

SNPMouseEnterCircleOpacity  
Circle opacity after mouse entering the element

SNPMouseEnterCircleStrokeColor  
Circle stroke color after mouse entering the element

SNPMouseEnterCircleStrokeWidth  
Circle stroke width after mouse entering the element

SNPMouseLeaveDisplay  
Default False, show/not the tooltip when mouse mover leave a SNP point.

SNPMouseLeaveColor  
Color after mouse leaving the element

SNPMouseLeaveCircleSize  
Circle size after mouse leaving the element

SNPMouseLeaveCircleOpacity  
Circle opacity after mouse leaving the element



SNPMouseLeaveCircleStrokeColor  
Circle stroke color after mouse leaving the element

SNPMouseLeaveCircleStrokeWidth  
Circle stroke width after mouse leaving the element

SNPMouseMoveDisplay  
Default False, show/not the tooltip when mouse move into a SNP point.

SNPMouseMoveColor  
Color after mouse moving in the element

SNPMouseMoveCircleSize  
Circle size after mouse moving in the element

SNPMouseMoveCircleOpacity  
Circle opacity after mouse moving in the element

SNPMouseMoveCircleStrokeColor  
Circle stroke color after mouse moving in the element

SNPMouseMoveCircleStrokeWidth  
Circle stroke width after mouse moving in the element

SNPMouseOutDisplay  
Default False, hide/not tooltip when mouse is not hovering a SNP point anymore.

SNPMouseOutAnimationTime  
Animation time when mouse moving over the element

SNPMouseOutColor  
Color when mouse moving over the element

SNPMouseOutCircleSize  
Circle size when mouse moving over the element

SNPMouseOutCircleOpacity  
Opacity when mouse moving over the element

SNPMouseOutCircleStrokeColor  
Stroke color when mouse moving over the element

SNPMouseOutCircleStrokeWidth  
Stroke width when mouse moving over the element

SNPMouseUpDisplay  
Default False, show/not the tooltip when mouse click up a SNP point.

SNPMouseUpColor  
Color after mouse moving up the element

SNPMouseUpCircleSize  
Circle size after mouse moving up the element

SNPMouseUpCircleOpacity  
Circle opacity after mouse moving up the element

SNPMouseUpCircleStrokeColor  
Circle stroke color after mouse moving up the element

SNPMouseUpCircleStrokeWidth  
Circle stroke width after mouse moving up the element

SNPMouseOverDisplay  
Default False, show/not the tooltip when mouse hover on a SNP point.

SNPMouseOverColor  
Color after mouse moving over the element

SNPMouseOverCircleSize  
Circle size after mouse moving over the element

SNPMouseOverCircleOpacity  
     Circle opacity after mouse moving over the element  
 SNPMouseOverCircleStrokeColor  
     Circle stroke color after mouse moving over the element  
 SNPMouseOverCircleStrokeWidth  
     Circle stroke width after mouse moving over the element  
 SNPMouseOverTooltipsSetting  
     Default "chr : "  
 SNPMouseOverTooltipsHtml  
     Default " "  
 SNPMouseOverTooltipsPosition  
     Position for tooltips when mouse moving over  
 SNPMouseOverTooltipsBackgroundColor  
     Background color for tooltips when mouse moving over  
 SNPMouseOverTooltipsBorderStyle  
     Border style for tooltips when mouse moving over  
 SNPMouseOverTooltipsBorderWidth  
     Border width for tooltips when mouse moving over  
 SNPMouseOverTooltipsPadding  
     Padding for tooltips when mouse moving over  
 SNPMouseOverTooltipsBorderRadius  
     Border radius for tooltips when mouse moving over  
 SNPMouseOverTooltipsOpacity  
     Opacity for tooltips when mouse moving over  
 LINKxlink      Default False, add/not xlink for LINK module  
 LINKMouseEvent   Default True, open/not open mouse event of LINK module  
 LINKMouseClickedDisplay  
     Default False, show/not the tooltip when mouse click on a LINK point.  
 LINKMouseClickedOpacity  
     Opacity when mouse clicking  
 LINKMouseClickedStrokeColor  
     Stroke color when mouse clicking  
 LINKMouseClickedStrokeWidth  
     Stroke width when mouse clicking  
 LINKMouseDownDisplay  
     Default False, show/not the tooltip when mouse click down a LINK point.  
 LINKMouseDownOpacity  
     Opacity when mouse moving down the element  
 LINKMouseDownStrokeColor  
     Stroke color when mouse moving down the element  
 LINKMouseDownStrokeWidth  
     Stroke width when mouse moving down the element  
 LINKMouseEnterDisplay  
     Default False, show/not the tooltip when mouse mover over a LINK point.  
 LINKMouseEnterOpacity  
     Opacity when mouse entering the element  
 LINKMouseEnterStrokeColor  
     Stroke color when mouse entering the element

LINKMouseEnterStrokeWidth  
Stroke width when mouse entering the element

LINKMouseLeaveDisplay  
Default False, show/not the tooltip when mouse mover leave a LINK point.

LINKMouseLeaveOpacity  
Opacity when mouse leaving the element

LINKMouseLeaveStrokeColor  
Stroke color when mouse leaving the element

LINKMouseLeaveStrokeWidth  
Stroke width when mouse leaving the element

LINKMouseMoveDisplay  
Default False, show/not the tooltip when mouse move into a LINK point.

LINKMouseMoveOpacity  
Opacity when mouse moving in the element

LINKMouseMoveStrokeColor  
Stroke color when mouse moving in the element

LINKMouseMoveStrokeWidth  
Stroke width when mouse moving in the element

LINKMouseOutDisplay  
Defalut False, hide/not tooltip when mouse is not hovering a LINK point any-  
more.

LINKMouseOutAnimationTime  
Animation time when mouse moving out the element

LINKMouseOutOpacity  
Opacity when mouse moving out the element

LINKMouseOutStrokeColor  
Stroke color when mouse moving out the element

LINKMouseOutStrokeWidth  
Stroke width when mouse moving out the element

LINKMouseUpDisplay  
Default False, show/not the tooltip when mouse click up a LINK point.

LINKMouseUpOpacity  
Opacity when mouse moving up the element

LINKMouseUpStrokeColor  
Stroke color when mouse moving up the element

LINKMouseUpStrokeWidth  
Stroke width when mouse moving up the element

LINKMouseOverDisplay  
Default False, show/not the tooltip when mouse hover on a LINK point.

LINKMouseOverOpacity  
Opacity when mouse moving over the element

LINKMouseOverStrokeColor  
Stroke color when mouse moving over the element

LINKMouseOverStrokeWidth  
Stroke width when mouse moving over the element

LINKMouseOverTooltipsSetting  
Default "style1"

LINKMouseOverTooltipsHtml  
Default " "

LINKMouseOverTooltipsPosition  
     Default "absolute"  
 LINKMouseOverTooltipsBackgroundColor  
     Default "white"  
 LINKMouseOverTooltipsBorderStyle  
     Default "solid"  
 LINKMouseOverTooltipsBorderWidth  
     Default 0  
 LINKMouseOverTooltipsPadding  
     Default "3px"  
 LINKMouseOverTooltipsBorderRadius  
     Default "3px"  
 LINKMouseOverTooltipsOpacity  
     Default 0.8  
 LINKLabelDragEvent  
     Default False, draggable for the label of LINK module  
 CHORDMouseEvent  
     Default True, open/not open mouse event of CHORD module  
 CHORDMouseFillColorExcluded  
     A type of color in character, chord in this color will be hided  
 CHORDMouseClickedDisplay  
     Default False, show/not the tooltip when mouse click on a CHORD point.  
 CHORDMouseClickedOpacity  
     Opacity when mouse clicking  
 CHORDMouseClickedStrokeColor  
     Stroke color when mouse clicking  
 CHORDMouseClickedStrokeWidth  
     Stroke width when mouse clicking  
 CHORDMouseDownDisplay  
     Default False, show/not the tooltip when mouse click down a CHORD point.  
 CHORDMouseDownOpacity  
     Opacity when mouse moving down the element  
 CHORDMouseDownStrokeColor  
     Stroke color when mouse moving down the element  
 CHORDMouseDownStrokeWidth  
     Stroke width when mouse moving down the element  
 CHORDMouseEnterDisplay  
     Default False, show/not the tooltip when mouse mover over a CHORD point.  
 CHORDMouseEnterOpacity  
     Opacity when mouse entering the element  
 CHORDMouseEnterStrokeColor  
     Stroke color when mouse entering the element  
 CHORDMouseEnterStrokeWidth  
     Stroke width when mouse entering the element  
 CHORDMouseLeaveDisplay  
     Default False, show/not the tooltip when mouse mover leave a CHORD point.  
 CHORDMouseLeaveOpacity  
     Opacity when mouse leaving the element

CHORDMouseLeaveStrokeColor  
     Stroke color when mouse leaving the element  
 CHORDMouseLeaveStrokeWidth  
     Stroke width when mouse leaving the element  
 CHORDMouseMoveDisplay  
     Default False, show/not the tooltip when mouse move into a CHORD point.  
 CHORDMouseMoveOpacity  
     Opacity when mouse moving in the element  
 CHORDMouseMoveStrokeColor  
     Stroke color when mouse moving in the element  
 CHORDMouseMoveStrokeWidth  
     Stroke width when mouse moving in the element  
 CHORDMouseOutDisplay  
     Default False, hide/not tooltip when mouse is not hovering a CHORD point anymore.  
 CHORDMouseOutAnimationTime  
     Animation time when mouse moving out the element  
 CHORDMouseOutOpacity  
     Opacity when mouse moving out the element  
 CHORDMouseOutStrokeColor  
     Stroke color when mouse moving out the element  
 CHORDMouseOutStrokeWidth  
     Stroke width when mouse moving out the element  
 CHORDMouseUpDisplay  
     Default False, show/not the tooltip when mouse click up a CHORD point.  
 CHORDMouseUpOpacity  
     Opacity when mouse moving up the element  
 CHORDMouseUpStrokeColor  
     Stroke color when mouse moving up the element  
 CHORDMouseUpStrokeWidth  
     Stroke width when mouse moving up the element  
 CHORDMouseOverDisplay  
     Default False, show/not the tooltip when mouse hover on a CHORD point.  
 CHORDMouseOverOpacity  
     Opacity when mouse moving over the element  
 CHORDMouseOverStrokeColor  
     Stroke color when mouse moving over the element  
 CHORDMouseOverStrokeWidth  
     Stroke width when mouse moving over the element  
 HISTOGRAMxlink Default False, add/not xlink for HISTOGRAM module  
 HISTOGRAMMouseEvent  
     Default True, open/not open mouse event of HISTOGRAM module  
 HISTOGRAMMouseClickedDisplay  
     Default False, show/not the tooltip when mouse click on a HISTOGRAM point.  
 HISTOGRAMMouseClickedColor  
     Color when mouse clicking  
 HISTOGRAMMouseClickedOpacity  
     Opacity when mouse clicking

HISTOGRAMMouseClickStrokeColor  
Stroke color when mouse clicking

HISTOGRAMMouseClickStrokeWidth  
Stroke width when mouse clicking

HISTOGRAMMouseDownDisplay  
Default False, show/not the tooltip when mouse click down a HISTOGRAM point.

HISTOGRAMMouseDownColor  
Color when mouse moving down the element

HISTOGRAMMouseDownOpacity  
Opacity when mouse moving up the element

HISTOGRAMMouseDownStrokeColor  
Stroke color when mouse moving up the element

HISTOGRAMMouseDownStrokeWidth  
Stroke width when mouse moving up the element

HISTOGRAMMouseEnterDisplay  
Default False, show/not the tooltip when mouse mover over a HISTOGRAM point.

HISTOGRAMMouseEnterColor  
Color when mouse entering the element

HISTOGRAMMouseEnterOpacity  
Opacity when mouse entering the element

HISTOGRAMMouseEnterStrokeColor  
Stroke color when mouse entering the element

HISTOGRAMMouseEnterStrokeWidth  
Stroke width when mouse entering the element

HISTOGRAMMouseLeaveDisplay  
Default False, show/not the tooltip when mouse mover leave a HISTOGRAM point.

HISTOGRAMMouseLeaveColor  
Color when mouse leaving the element

HISTOGRAMMouseLeaveOpacity  
Opacity when mouse leaving the element

HISTOGRAMMouseLeaveStrokeColor  
Stroke color when mouse leaving the element

HISTOGRAMMouseLeaveStrokeWidth  
Stroke width when mouse leaving the element

HISTOGRAMMouseMoveDisplay  
Default False, show/not the tooltip when mouse move into a HISTOGRAM point.

HISTOGRAMMouseMoveColor  
Color when mouse moving in the element

HISTOGRAMMouseMoveOpacity  
Opacity when mouse moving in the element

HISTOGRAMMouseMoveStrokeColor  
Stroke color when mouse moving in the element

HISTOGRAMMouseMoveStrokeWidth  
Stroke width when mouse moving in the element

HISTOGRAMMouseOutDisplay  
Default False, hide/not tooltip when mouse is not hovering a HISTOGRAM point anymore.

HISTOGRAMMouseOutAnimationTime  
Animation time when mouse moving out the element

HISTOGRAMMouseOutColor  
Color when mouse moving out the element

HISTOGRAMMouseOutOpacity  
Opacity when mouse moving out the element

HISTOGRAMMouseOutStrokeColor  
Stroke color when mouse moving out the element

HISTOGRAMMouseOutStrokeWidth  
Stroke width when mouse moving out the element

HISTOGRAMMouseUpDisplay  
Default False, show/not the tooltip when mouse click up a HISTOGRAM point.

HISTOGRAMMouseUpColor  
Color when mouse moving up the element

HISTOGRAMMouseUpOpacity  
Opacity when mouse moving up the element

HISTOGRAMMouseUpStrokeColor  
Stroke color when mouse moving up the element

HISTOGRAMMouseUpStrokeWidth  
Stroke width when mouse moving up the element

HISTOGRAMMouseOverDisplay  
Default False, show/not the tooltip when mouse hover on a HISTOGRAM point.

HISTOGRAMMouseOverColor  
Color when mouse moving over the element

HISTOGRAMMouseOverOpacity  
Opacity when mouse moving over the element

HISTOGRAMMouseOverStrokeColor  
Stroke color when mouse moving over the element

HISTOGRAMMouseOverStrokeWidth  
Stroke width when mouse moving over the element

HISTOGRAMMouseOverTooltipsSetting  
Default "style1"

HISTOGRAMMouseOverTooltipsHtml  
Default " "

HISTOGRAMMouseOverTooltipsPosition  
Default "absolute"

HISTOGRAMMouseOverTooltipsBackgroundColor  
Default "white"

HISTOGRAMMouseOverTooltipsBorderStyle  
Default "solid"

HISTOGRAMMouseOverTooltipsBorderWidth  
Default 0

HISTOGRAMMouseOverTooltipsPadding  
Default "3px"

HISTOGRAMMouseOverTooltipsBorderRadius  
Default "3px"

HISTOGRAMMouseOverTooltipsOpacity  
 Default 0.8

LINEMouseEvent Default True, open/not open mouse event of LINE module

LINEMouseClickedDisplay  
 Default False, show/not the tooltip when mouse click on a LINE point.

LINEMouseClickedLineOpacity  
 Line opacity when mouse clicking the element

LINEMouseClickedLineStrokeColor  
 Stroke color when mouse clicking the element

LINEMouseClickedLineStrokeWidth  
 Stroke width when mouse clicking the element

LINEMouseDownDisplay  
 Default False, show/not the tooltip when mouse click down a LINE point.

LINEMouseDownLineOpacity  
 Line opacity when mouse moving down the element

LINEMouseDownLineStrokeColor  
 Stroke color when mouse moving down the element

LINEMouseDownLineStrokeWidth  
 Stroke width when mouse moving down the element

LINEMouseEnterDisplay  
 Default False, show/not the tooltip when mouse mover over a LINE point.

LINEMouseEnterLineOpacity  
 Line opacity when mouse entering the element

LINEMouseEnterLineStrokeColor  
 Stroke color when mouse entering the element

LINEMouseEnterLineStrokeWidth  
 Stroke width when mouse entering the element

LINEMouseLeaveDisplay  
 Default False, show/not the tooltip when mouse mover leave a LINE point.

LINEMouseLeaveLineOpacity  
 Line opacity when mouse leaving the element

LINEMouseLeaveLineStrokeColor  
 Stroke color when mouse leaving the element

LINEMouseLeaveLineStrokeWidth  
 Stroke width when mouse leaving the element

LINEMouseMoveDisplay  
 Default False, show/not the tooltip when mouse move into a LINE point.

LINEMouseMoveLineOpacity  
 Line opacity when mouse moving in the element

LINEMouseMoveLineStrokeColor  
 Stroke color when mouse moving in the element

LINEMouseMoveLineStrokeWidth  
 Stroke width when mouse moving in the element

LINEMouseOutDisplay  
 Defalut False, hide/not tooltip when mouse is not hovering a LINE point any-  
 more.

LINEMouseOutAnimationTime  
 Animation time when mouse moving out the element



LINEMouseOutLineOpacity  
     Line opacity when mouse moving out the element  
 LINEMouseOutLineStrokeColor  
     Stroke color when mouse moving out the element  
 LINEMouseOutLineStrokeWidth  
     Stroke width when mouse moving out the element  
 LINEMouseUpDisplay  
     Default False, show/not the tooltip when mouse click up a LINE point.  
 LINEMouseUpLineOpacity  
     Line opacity when mouse moving up the element  
 LINEMouseUpLineStrokeColor  
     Stroke color when mouse moving up the element  
 LINEMouseUpLineStrokeWidth  
     Stroke width when mouse moving up the element  
 LINEMouseOverDisplay  
     Default False, show/not the tooltip when mouse hover on a LINE point.  
 LINEMouseOverLineOpacity  
     Line opacity when mouse moving over the element  
 LINEMouseOverLineStrokeColor  
     Stroke color when mouse moving over the element  
 LINEMouseOverLineStrokeWidth  
     Stroke width when mouse moving over the element  
 LINEMouseOverTooltipsSetting  
     Default "style1"  
 LINEMouseOverTooltipsHtml  
     Default " "  
 LINEMouseOverTooltipsPosition  
     Default "absolute"  
 LINEMouseOverTooltipsBackgroundColor  
     Default "white"  
 LINEMouseOverTooltipsBorderStyle  
     Default "solid"  
 LINEMouseOverTooltipsBorderWidth  
     Default 0  
 LINEMouseOverTooltipsPadding  
     Default "3px"  
 LINEMouseOverTooltipsBorderRadius  
     Default "3px"  
 LINEMouseOverTooltipsOpacity  
     Default 0.8  
 WIGMouseEvent   Default True, open/not open mouse event of WIG module  
 WIGMouseClickDisplay  
     Default False, show/not the tooltip when mouse click on a WIG point.  
 WIGMouseClickLineOpacity  
     Line opacity when mouse clicking the element  
 WIGMouseClickLineStrokeColor  
     Stroke color when mouse clicking the element  
 WIGMouseClickLineStrokeWidth  
     Stroke width when mouse clicking the element

|                              |  |
|------------------------------|--|
| WIGMouseClickedFillColor     | Filling color when mouse clicking the element                                    |
| WIGMouseDownDisplay          | Default False, show/not the tooltip when mouse click down a WIG point.           |
| WIGMouseDownLineOpacity      | Line opacity when mouse moving down the element                                  |
| WIGMouseDownLineStrokeColor  | Stroke color when mouse moving down the element                                  |
| WIGMouseDownLineStrokeWidth  | Stroke width when mouse moving down the element                                  |
| WIGMouseDownFillColor        | Filling color when mouse moving down the element                                 |
| WIGMouseEnterDisplay         | Default False, show/not the tooltip when mouse mover over a WIG point.           |
| WIGMouseEnterLineOpacity     | Line opacity when mouse entering the element                                     |
| WIGMouseEnterLineStrokeColor | Stroke color when mouse entering the element                                     |
| WIGMouseEnterLineStrokeWidth | Stroke width when mouse entering the element                                     |
| WIGMouseEnterFillColor       | Filling color when mouse entering the element                                    |
| WIGMouseLeaveDisplay         | Default False, show/not the tooltip when mouse mover leave a WIG point.          |
| WIGMouseLeavelineOpacity     | Line opacity when mouse leaving the element                                      |
| WIGMouseLeavelineStrokeColor | Stroke color when mouse leaving the element                                      |
| WIGMouseLeavelineStrokeWidth | Stroke width when mouse leaving the element                                      |
| WIGMouseLeaveFillColor       | Filling color when mouse leaving the element                                     |
| WIGMouseMoveDisplay          | Default False, show/not the tooltip when mouse move into a WIG point.            |
| WIGMouseMoveLineOpacity      | Line opacity when mouse moving in the element                                    |
| WIGMouseMoveLineStrokeColor  | Stroke color when mouse moving in the element                                    |
| WIGMouseMoveLineStrokeWidth  | Stroke width when mouse moving in the element                                    |
| WIGMouseMoveFillColor        | Filling color when mouse leaving the element                                     |
| WIGMouseOutDisplay           | Defalut False, hide/not tooltip when mouse is not hovering a WIG point any-more. |
| WIGMouseOutAnimationTime     | Animation time when mouse moving out the element                                 |
| WIGMouseOutLineOpacity       | Line opacity when mouse moving out the element                                   |

WIGMouseOutLineStrokeColor  
     Stroke color when mouse moving out the element  
 WIGMouseOutLineStrokeWidth  
     Stroke width when mouse moving out the element  
 WIGMouseOutFillColor  
     Filling color when mouse moving out the element  
 WIGMouseUpDisplay  
     Default False, show/not the tooltip when mouse click up a WIG point.  
 WIGMouseUpLineOpacity  
     Line opacity when mouse moving up the element  
 WIGMouseUpLineStrokeColor  
     Stroke color when mouse moving up the element  
 WIGMouseUpLineStrokeWidth  
     Stroke width when mouse moving up the element  
 WIGMouseUpFillColor  
     Filling color when mouse moving up the element  
 WIGMouseOverDisplay  
     Default False, show/not the tooltip when mouse hover on a WIG point.  
 WIGMouseOverLineOpacity  
     Line opacity when mouse moving over the element  
 WIGMouseOverLineStrokeColor  
     Stroke color when mouse moving over the element  
 WIGMouseOverLineStrokeWidth  
     Stroke width when mouse moving over the element  
 WIGMouseOverFillColor  
     Filling color when mouse moving over the element  
 WIGMouseOverTooltipsSetting  
     Default "style1"  
 WIGMouseOverTooltipsHtml  
     Default " "  
 WIGMouseOverTooltipsPosition  
     Default "absolute"  
 WIGMouseOverTooltipsBackgroundColor  
     Default "white"  
 WIGMouseOverTooltipsBorderStyle  
     Default "solid"  
 WIGMouseOverTooltipsBorderWidth  
     Default 0  
 WIGMouseOverTooltipsPadding  
     Default "3px"  
 WIGMouseOverTooltipsBorderRadius  
     Default "3px"  
 WIGMouseOverTooltipsOpacity  
     Default 0.8  
 SCATTERxlink     Default False, add/not xlink for SCATTER module  
 SCATTERMouseEvent  
     Default True, open/not open mouse event of SCATTER module  
 SCATTERMouseClickedDisplay  
     Default False, show/not the tooltip when mouse click on a SCATTER point.

SCATTERMouseClickedColor  
     Color when mouse clicking the element

SCATTERMouseClickedCircleSize  
     Circle size when mouse clicking the element

SCATTERMouseClickedCircleOpacity  
     Circle opacity when mouse clicking the element

SCATTERMouseClickedCircleStrokeColor  
     Circle stroke color when mouse clicking the element

SCATTERMouseClickedCircleStrokeWidth  
     Circle stroke width when mouse clicking the element

SCATTERMouseClickedTextFromData  
     Text column when mouse clicking the element

SCATTERMouseClickedTextOpacity  
     Text opacity when mouse clicking the element

SCATTERMouseClickedTextColor  
     Text color when mouse clicking the element

SCATTERMouseClickedTextSize  
     Text size when mouse clicking the element

SCATTERMouseClickedTextPostionX, SCATTERMouseClickedTextPostionY  
     Text coordinates when mouse clicking the element

SCATTERMouseClickedTextDrag  
     Whether text is draggable when clicing element

SCATTERMouseDownDisplay  
     Default False, show/not the tooltip when mouse click down a SCATTER point.

SCATTERMouseDownColor  
     Color when mouse moving down the element

SCATTERMouseDownCircleSize  
     Circle size when mouse moving down the element

SCATTERMouseDownCircleOpacity  
     Circle opacity when mouse moving down the element

SCATTERMouseDownCircleStrokeColor  
     Circle stroke color when mouse moving down the element

SCATTERMouseDownCircleStrokeWidth  
     Circle stroke width when mouse moving down the element

SCATTERMouseEnterDisplay  
     Default False, show/not the tooltip when mouse mover over a SCATTER point.

SCATTERMouseEnterColor  
     Color when mouse entering the element

SCATTERMouseEnterCircleSize  
     Circle size when mouse entering the element

SCATTERMouseEnterCircleOpacity  
     Circle opacity when mouse entering the element

SCATTERMouseEnterCircleStrokeColor  
     Circle stroke color when mouse entering the element

SCATTERMouseEnterCircleStrokeWidth  
     Circle stroke width when mouse entering the element

SCATTERMouseLeaveDisplay  
     Default False, show/not the tooltip when mouse mover leave a SCATTER point.

SCATTERMouseLeaveColor  
Color when mouse leaving the element

SCATTERMouseLeaveCircleSize  
Circle size when mouse leaving the element

SCATTERMouseLeaveCircleOpacity  
Circle opacity when mouse leaving the element

SCATTERMouseLeaveCircleStrokeColor  
Circle stroke color when mouse leaving the element

SCATTERMouseLeaveCircleStrokeWidth  
Circle stroke width when mouse leaving the element

SCATTERMouseMoveDisplay  
Default False, show/not the tooltip when mouse move into a SCATTER point.

SCATTERMouseMoveColor  
Color when mouse moving in the element

SCATTERMouseMoveCircleSize  
Circle size when mouse moving in the element

SCATTERMouseMoveCircleOpacity  
Circle opacity when mouse moving in the element

SCATTERMouseMoveCircleStrokeColor  
Circle stroke color when mouse moving in the element

SCATTERMouseMoveCircleStrokeWidth  
Circle stroke width when mouse moving in the element

SCATTERMouseOutDisplay  
Default False, hide/not tooltip when mouse is not hovering a SCATTER point anymore.

SCATTERMouseOutAnimationTime  
Animation time when mouse moving out the element

SCATTERMouseOutColor  
Color when mouse moving out the element

SCATTERMouseOutCircleSize  
Circle size when mouse moving out the element

SCATTERMouseOutCircleOpacity  
Circle opacity when mouse moving out the element

SCATTERMouseOutCircleStrokeColor  
Circle stroke color when mouse moving out the element

SCATTERMouseOutCircleStrokeWidth  
Circle stroke width when mouse moving out the element

SCATTERMouseUpDisplay  
Default False, show/not the tooltip when mouse click up a SCATTER point.

SCATTERMouseUpColor  
Color when mouse moving up the element

SCATTERMouseUpCircleSize  
Circle size when mouse moving up the element

SCATTERMouseUpCircleOpacity  
Circle opacity when mouse moving up the element

SCATTERMouseUpCircleStrokeColor  
Circle stroke color when mouse moving up the element

|   |  |
|---|--|
| SCATTERMouseUpCircleStrokeWidth         | Circle stroke width when mouse moving up the element                     |
| SCATTERMouseOverDisplay                 | Default False, show/not the tooltip when mouse hover on a SCATTER point. |
| SCATTERMouseOverColor                   | Color when mouse moving over the element                                 |
| SCATTERMouseOverCircleSize              | Circle size when mouse moving over the element                           |
| SCATTERMouseOverCircleOpacity           | Circle opacity when mouse moving over the element                        |
| SCATTERMouseOverCircleStrokeColor       | Circle stroke color when mouse moving over the element                   |
| SCATTERMouseOverCircleStrokeWidth       | Circle stroke width when mouse moving over the element                   |
| SCATTERMouseOverTooltipsSetting         | Default "style1"   |
| SCATTERMouseOverTooltipsHtml            | Default " "  |
| SCATTERMouseOverTooltipsPosition        | Default "absolute"   |
| SCATTERMouseOverTooltipsBackgroundColor | Default "white"  |
| SCATTERMouseOverTooltipsBorderStyle     | Default "solid"  |
| SCATTERMouseOverTooltipsBorderWidth     | Default 0  |
| SCATTERMouseOverTooltipsPadding         | Default "3px"  |
| SCATTERMouseOverTooltipsBorderRadius    | Default "3px"  |
| SCATTERMouseOverTooltipsOpacity         | Default 0.8  |
| ARCxlink                                | Default False, add/not xlink for ARC module                              |
| ARCMouseEvent                           | Default True, open/not open mouse event of ARC module                    |
| ARCMouseClickDisplay                    | Default False, show/not the tooltip when mouse click on a ARC point.     |
| ARCMouseClickColor                      | Color when mouse clicking the element                                    |
| ARCMouseClickArcOpacity                 | Arc opacity when mouse clicking the element                              |
| ARCMouseClickArcStrokeColor             | Arc stroke color when mouse clicking the element                         |
| ARCMouseClickArcStrokeWidth             | Arc stroke width when mouse clicking the element                         |
| ARCMouseClickTextFromData               | Text column when mouse clicking the element                              |
| ARCMouseClickTextOpacity                | Text opacity when mouse clicking the element                             |

ARCMouseClickTextColor  
Text color when mouse clicking the element

ARCMouseClickTextSize  
Text size when mouse clicking the element

ARCMouseClickTextPostionX, ARCMouseClickTextPostionY  
Text coordinates when mouse clicking the element

ARCMouseClickTextDrag  
Whether text is draggable when mouse clicking the element

ARCMouseDownDisplay  
Default False, show/not the tooltip when mouse click down a ARC point.

ARCMouseDownColor  
Color when mouse moving down the element

ARCMouseDownArcOpacity  
Arc opacity when mouse moving down the element

ARCMouseDownArcStrokeColor  
Arc stroke color when mouse moving down the element

ARCMouseDownArcStrokeWidth  
Arc stroke width when mouse moving down the element

ARCMouseEnterDisplay  
Default False, show/not the tooltip when mouse mover over a ARC point.

ARCMouseEnterColor  
Color when mouse entering the element

ARCMouseEnterArcOpacity  
Arc opacity when mouse entering the element

ARCMouseEnterArcStrokeColor  
Arc stroke color when mouse entering the element

ARCMouseEnterArcStrokeWidth  
Arc stroke width when mouse entering the element

ARCMouseLeaveDisplay  
Default False, show/not the tooltip when mouse mover leave a ARC point.

ARCMouseLeaveColor  
Color when mouse leaving the element

ARCMouseLeaveArcOpacity  
Arc opacity when mouse leaving the element

ARCMouseLeaveArcStrokeColor  
Arc stroke color when mouse leaving the element

ARCMouseLeaveArcStrokeWidth  
Arc stroke width when mouse leaving the element

ARCMouseMoveDisplay  
Default False, show/not the tooltip when mouse move into a ARC point.

ARCMouseMoveColor  
Color when mouse moving in the element

ARCMouseMoveArcOpacity  
Arc opacity when mouse moving in the element

ARCMouseMoveArcStrokeColor  
Arc stroke color when mouse moving in the element

ARCMouseMoveArcStrokeWidth  
Arc stroke width when mouse moving in the element

ARCMouseOutDisplay  
 Defalut False, hide/not tooltip when mouse is not hovering a ARC point any-  
 more.

ARCMouseOutAnimationTime  
 Animation time when mouse moving out the element

ARCMouseOutColor  
 Color when mouse moving out the element

ARCMouseOutArcOpacity  
 Arc opacity when mouse moving out the element

ARCMouseOutArcStrokeColor  
 Arc stroke color when mouse moving out the element

ARCMouseOutArcStrokeWidth  
 Arc stroke width when mouse moving out the element

ARCMouseUpDisplay  
 Default False, show/not the tooltip when mouse click up a ARC point.

ARCMouseUpColor  
 Color when mouse moving up the element

ARCMouseUpArcOpacity  
 Arc opacity when mouse moving up the element

ARCMouseUpArcStrokeColor  
 Arc stroke color when mouse moving up the element

ARCMouseUpArcStrokeWidth  
 Arc stroke width when mouse moving up the element

ARCMouseOverDisplay  
 Default False, show/not the tooltip when mouse hover on a ARC point.

ARCMouseOverColor  
 Color when mouse moving over the element

ARCMouseOverArcOpacity  
 Arc opacity when mouse moving over the element

ARCMouseOverArcStrokeColor  
 Arc stroke color when mouse moving over the element

ARCMouseOverArcStrokeWidth  
 Arc stroke width when mouse moving over the element

ARCMouseOverTooltipsSetting  
 Default "style1"

ARCMouseOverTooltipsHtml  
 Default " "

ARCMouseOverTooltipsPosition  
 Default "absolute"

ARCMouseOverTooltipsBackgroundColor  
 Default "white"

ARCMouseOverTooltipsBorderStyle  
 Default "solid"

ARCMouseOverTooltipsBorderWidth  
 Default 0

ARCMouseOverTooltipsPadding  
 Default "3px"

ARCMouseOverTooltipsBorderRadius  
 Default "3px"



ARCMouseOverTooltipsOpacity  
     Default 0.8  
 GENExlink      Default False, add/not xlink for GENE module  
 GENEMouseEvent   Default True, open/not open mouse event of GENE module  
 GENEMouseClickDisplay  
     Default False, show/not the tooltip when mouse click on a GENE point.  
 GENEMouseClickColor  
     Color when mouse clicking the element  
 GENEMouseClickArcOpacity  
     Arc opacity when mouse clicking the element  
 GENEMouseClickArcStrokeColor  
     Arc stroke color when mouse clicking the element  
 GENEMouseClickArcStrokeWidth  
     Arc stroke width when mouse clicking the element  
 GENEMouseClickTextFromData  
     Text column when mouse clicking the element  
 GENEMouseClickTextOpacity  
     Text opacity when mouse clicking the element  
 GENEMouseClickTextColor  
     Text color when mouse clicking the element  
 GENEMouseClickTextSize  
     Text size when mouse clicking the element  
 GENEMouseClickTextPostionX, GENEMouseClickTextPostionY  
     Text coordinates when mouse clicking the element  
 GENEMouseClickTextDrag  
     Whether text is draggable when mouse clicking the element  
 GENEMouseDownDisplay  
     Default False, show/not the tooltip when mouse click down a GENE point.  
 GENEMouseDownColor  
     Color when mouse moving down the element  
 GENEMouseDownArcOpacity  
     Arc opacity when mouse moving down the element  
 GENEMouseDownArcStrokeColor  
     Arc stroke color when mouse moving down the element  
 GENEMouseDownArcStrokeWidth  
     Arc stroke width when mouse moving down the element  
 GENEMouseEnterDisplay  
     Default False, show/not the tooltip when mouse mover over a GENE point.  
 GENEMouseEnterColor  
     Color when mouse entering the element  
 GENEMouseEnterArcOpacity  
     Arc opacity when mouse entering the element  
 GENEMouseEnterArcStrokeColor  
     Arc stroke color when mouse entering the element  
 GENEMouseEnterArcStrokeWidth  
     Arc stroke width when mouse entering the element  
 GENEMouseLeaveDisplay  
     Default False, show/not the tooltip when mouse mover leave a GENE point.

GENEMouseLeaveColor  
Color when mouse leaving the element

GENEMouseLeaveArcOpacity  
Arc opacity when mouse leaving the element

GENEMouseLeaveArcStrokeColor  
Arc stroke color when mouse leaving the element

GENEMouseLeaveArcStrokeWidth  
Arc stroke width when mouse leaving the element

GENEMouseMoveDisplay  
Default False, show/not the tooltip when mouse move into a GENE point.

GENEMouseMoveColor  
Color when mouse moving in the element

GENEMouseMoveArcOpacity  
Arc opacity when mouse moving in the element

GENEMouseMoveArcStrokeColor  
Arc stroke color when mouse moving in the element

GENEMouseMoveArcStrokeWidth  
Arc stroke width when mouse moving in the element

GENEMouseOutDisplay  
Default False, hide/not tooltip when mouse is not hovering a GENE point anymore.

GENEMouseOutAnimationTime  
Animation time when mouse moving out the element

GENEMouseOutColor  
Color when mouse moving out the element

GENEMouseOutArcOpacity  
Arc opacity when mouse moving out the element

GENEMouseOutArcStrokeColor  
Arc stroke color when mouse moving out the element

GENEMouseOutArcStrokeWidth  
Arc stroke width when mouse moving out the element

GENEMouseUpDisplay  
Default False, show/not the tooltip when mouse click up a GENE point.

GENEMouseUpColor  
Color when mouse moving up the element

GENEMouseUpArcOpacity  
Arc opacity when mouse moving up the element

GENEMouseUpArcStrokeColor  
Arc stroke color when mouse moving up the element

GENEMouseUpArcStrokeWidth  
Arc stroke width when mouse moving up the element

GENEMouseOverDisplay  
Default False, show/not the tooltip when mouse hover on a GENE point.

GENEMouseOverColor  
Color when mouse moving over the element

GENEMouseOverArcOpacity  
Arc opacity when mouse moving over the element

GENEMouseOverArcStrokeColor  
Arc stroke color when mouse moving over the element

GENEMouseOverArcStrokeWidth  
     Arc stroke width when mouse moving over the element  
 GENEMouseOverTooltipsSetting  
     Default "style1"  
 GENEMouseOverTooltipsHtml  
     Default " "  
 GENEMouseOverTooltipsPosition  
     Default "absolute"  
 GENEMouseOverTooltipsBackgroundColor  
     Default "white"  
 GENEMouseOverTooltipsBorderStyle  
     Default "solid"  
 GENEMouseOverTooltipsBorderWidth  
     Default 0  
 GENEMouseOverTooltipsPadding  
     Default "3px"  
 GENEMouseOverTooltipsBorderRadius  
     Default "3px"  
 GENEMouseOverTooltipsOpacity  
     Default 0.8  
 LOLLIPOPxlink   Default False, add/not xlink for LOLLIPOP module  
 LOLLIPOPMouseEvent  
     Default True, open/not open mouse event of LOLLIPOP module  
 LOLLIPOPMouseClickedDisplay  
     Default False, show/not the tooltip when mouse click on a LOLLIPOP point.  
 LOLLIPOPMouseClickedColor  
     Color when mouse clicking  
 LOLLIPOPMouseClickedCircleSize  
     Circle size when mouse clicking the element  
 LOLLIPOPMouseClickedCircleOpacity  
     Circle opacity when mouse clicking the element  
 LOLLIPOPMouseClickedCircleStrokeColor  
     Circle stroke color when mouse clicking the element  
 LOLLIPOPMouseClickedCircleStrokeWidth  
     Circle stroke width when mouse clicking the element  
 LOLLIPOPMouseClickedTextFromData  
     Text column when mouse clicking the element  
 LOLLIPOPMouseClickedTextOpacity  
     Text opacity when mouse clicking the element  
 LOLLIPOPMouseClickedTextColor  
     Text color when mouse clicking the element  
 LOLLIPOPMouseClickedTextSize  
     Text size when mouse clicking the element  
 LOLLIPOPMouseClickedTextPostionX, LOLLIPOPMouseClickedTextPostionY  
     Text coordinates when mouse clicking the element  
 LOLLIPOPMouseClickedTextDrag  
     Whether text is draggable when mouse clicking the element  
 LOLLIPOPMouseDownDisplay  
     Default False, show/not the tooltip when mouse click down a LOLLIPOP point.

LOLLIPOPMouseDownColor  
Color when mouse moving down the element

LOLLIPOPMouseDownCircleSize  
Circle size when mouse moving down the element

LOLLIPOPMouseDownCircleOpacity  
Circle opacity when mouse moving down the element

LOLLIPOPMouseDownCircleStrokeColor  
Circle stroke color when mouse moving down the element

LOLLIPOPMouseDownCircleStrokeWidth  
Circle stroke width when mouse moving down the element

LOLLIPOPMouseEnterDisplay  
Default False, show/not the tooltip when mouse mover over a LOLLIPOP point.

LOLLIPOPMouseEnterColor  
Color when mouse entering the element

LOLLIPOPMouseEnterCircleSize  
Circle size when mouse entering the element

LOLLIPOPMouseEnterCircleOpacity  
Circle opacity when mouse entering the element

LOLLIPOPMouseEnterCircleStrokeColor  
Circle stroke color when mouse entering the element

LOLLIPOPMouseEnterCircleStrokeWidth  
Circle stroke width when mouse entering the element

LOLLIPOPMouseLeaveDisplay  
Default False, show/not the tooltip when mouse mover leave a LOLLIPOP point.

LOLLIPOPMouseLeaveColor  
Color when mouse leaving the element

LOLLIPOPMouseLeaveCircleSize  
Circle size when mouse leaving the element

LOLLIPOPMouseLeaveCircleOpacity  
Circle opacity when mouse leaving the element

LOLLIPOPMouseLeaveCircleStrokeColor  
Circle stroke color when mouse leaving the element

LOLLIPOPMouseLeaveCircleStrokeWidth  
Circle stroke width when mouse leaving the element

LOLLIPOPMouseMoveDisplay  
Default False, show/not the tooltip when mouse move into a LOLLIPOP point.

LOLLIPOPMouseMoveColor  
Color when mouse moving in the element

LOLLIPOPMouseMoveCircleSize  
Circle size when mouse moving in the element

LOLLIPOPMouseMoveCircleOpacity  
Circle opacity when mouse moving in the element

LOLLIPOPMouseMoveCircleStrokeColor  
Circle stroke color when mouse moving in the element

LOLLIPOPMouseMoveCircleStrokeWidth  
Circle stroke width when mouse moving in the element

LOLLIPOPMouseOutDisplay  
Defalut False, hide/not tooltip when mouse is not hovering a LOLLIPOP point anymore.

|  |   |
|--|---|
| LOLLIPOPMouseOutAnimationTime            | Animation time when mouse moving out the element                          |
| LOLLIPOPMouseOutColor                    | Color when mouse moving out the element                                   |
| LOLLIPOPMouseOutCircleSize               | Circle size when mouse moving out the element                             |
| LOLLIPOPMouseOutCircleOpacity            | Circle opacity when mouse moving out the element                          |
| LOLLIPOPMouseOutCircleStrokeColor        | Circle stroke color when mouse moving out the element                     |
| LOLLIPOPMouseOutCircleStrokeWidth        | Circle stroke width when mouse moving out the element                     |
| LOLLIPOPMouseUpDisplay                   | Default False, show/not the tooltip when mouse click up a LOLLIPOP point. |
| LOLLIPOPMouseUpColor                     | Color when mouse moving up the element                                    |
| LOLLIPOPMouseUpCircleSize                | Circle size when mouse moving up the element                              |
| LOLLIPOPMouseUpCircleOpacity             | Circle opacity when mouse moving up the element                           |
| LOLLIPOPMouseUpCircleStrokeColor         | Circle stroke color when mouse moving up the element                      |
| LOLLIPOPMouseUpCircleStrokeWidth         | Circle stroke width when mouse moving up the element                      |
| LOLLIPOPMouseOverDisplay                 | Default False, show/not the tooltip when mouse hover on a LOLLIPOP point. |
| LOLLIPOPMouseOverColor                   | Color when mouse moving over the element                                  |
| LOLLIPOPMouseOverCircleSize              | Circle size when mouse moving over the element                            |
| LOLLIPOPMouseOverCircleOpacity           | Circle opacity when mouse moving over the element                         |
| LOLLIPOPMouseOverCircleStrokeColor       | Circle stroke color when mouse moving over the element                    |
| LOLLIPOPMouseOverCircleStrokeWidth       | Circle stroke width when mouse moving over the element                    |
| LOLLIPOPMouseOverTooltipsSetting         | Default "style1"  |
| LOLLIPOPMouseOverTooltipsHtml            | Default " "   |
| LOLLIPOPMouseOverTooltipsPosition        | Default "absolute"  |
| LOLLIPOPMouseOverTooltipsBackgroundColor | Default "white"   |
| LOLLIPOPMouseOverTooltipsBorderStyle     | Default "solid"   |
| LOLLIPOPMouseOverTooltipsBorderWidth     | Default 0   |

|                                       |  |
|---------------------------------------|--|
| LOLLIPOPMouseOverTooltipsPadding      | Default "3px"  |
| LOLLIPOPMouseOverTooltipsBorderRadius | Default "3px"  |
| LOLLIPOPMouseOverTooltipsOpacity      | Default 0.8  |
| elementId                             | the name of the HTML id to be used to contain the visualization. |
| ...                                   | Ignored  |

### Examples

```
NGCircos(genome = "hg19")
```

---

|                |                                    |
|----------------|------------------------------------|
| NGCircos-shiny | <i>Shiny bindings for NGCircos</i> |
|----------------|------------------------------------|

---

### Description

Output and render functions for using NGCircos within Shiny applications and interactive Rmd documents.

### Usage

```
NGCircosOutput(outputId, width = "100%", height = "100%")

renderNGCircos(expr, env = parent.frame(), quoted = FALSE)
```

### Arguments

|               |  |
|---------------|--|
| outputId      | output variable to read from   |
| width, height | Must be a valid CSS unit (like '100%', '400px', 'auto') or a number, which will be coerced to a string and have 'px' appended. |
| expr          | An expression that generates a NGCircos  |
| env           | The environment in which to evaluate expr.   |
| quoted        | Is expr a quoted expression (with quote())? This is useful if you want to save an expression in a variable.                    |

NGCircosArc

*Create a ARC module to a moduleList***Description**

Display the CNV without value, Gene domain, Chromosome band in the visualization

**Usage**

```
NGCircosArc(
  modulename,
  compareGroup = 1,
  outerRadius = 150,
  innerRadius = 130,
  opacity = 1,
  animationDisplay = FALSE,
  animationTime = 2000,
  animationDelay = 20,
  animationType = "bounce",
  data,
  ...
)
```

**Arguments**

|   |  |
|---|--|
| <code>modulename</code>                                   | The name of the new module.  |
| <code>compareGroup</code>                                 | The group number of this module in compare module  |
| <code>innerRadius, outerRadius</code>                     | Where the module should begin and end  |
| <code>opacity</code>                                      | The opacity for arc  |
| <code>animationDisplay</code>                             | Whether display animation  |
| <code>animationTime, animationDelay, animationType</code> | The time, delay and display type for animation   |
| <code>data</code>   | A list of arc with details including chr, start, end, color, des, link and html. Details can be found on document. |
| <code>...</code>  | Ignored  |

**Examples**

```
arcData<-arcExample
NGCircos(NGCircosArc('Arc01', outerRadius = 212, innerRadius = 224, data=arcData),
  genome=list("EGFR"=1211),outerRadius = 220,genomeFillColor = c("grey"))
```

---

NGCircosAuxLine

---

Create a AUXILIAYLINE module to a moduleList

---

## Description

A auxiliary line displayed in the visualization

## Usage

```
NGCircosAuxLine(
  modulename,
  startX = 20,
  startY = 20,
  endX = 120,
  endY = 120,
  color = "red",
  width = 0.5,
  type = "straight",
  controlPointX = 0,
  controlPointY = 0,
  lineType = "solid",
  dashArray = 3,
  marker = TRUE,
  markerType = "circle",
  markerColor = "blue",
  markerHeight = 5,
  markerWidth = 5,
  markerPosition = 2,
  animationDisplay = FALSE,
  animationTime = 50,
  animationDelay = 1000,
  animationType = "linear",
  ...
)
```

## Arguments

|                              |   |
|------------------------------|---|
| modulename                   | The name of the new module.                             |
| startX, startY               | Start coordinates for auxiliary line.                   |
| endX, endY                   | End coordinates for auxiliary line.                     |
| color                        | Color for auxiliary line                                |
| width                        | Width for auxiliary line                                |
| type                         | Type for auxiliary line, could be straight/curve/broken |
| controlPointX, controlPointY | The middle point coordinates for curve and broken       |
| lineType                     | Line type, could be solid/dot                           |
| dashArray                    | The dash gap width                                      |
| marker                       | Whether display a marker on the end of line             |



markerType       Type of marker, could be circle/square/arrow/stub  
 markerColor, markerHeight, markerWidth  
                   Color, Height and Width for marker  
 markerPosition   1 means start, 2 means end, 3 means both  
 animationDisplay  
                   whether display animation  
 animationTime, animationDelay, animationType  
                   The time, delay and display type for animation  
 ...               Ignored

### Examples

```
NGCircos(NGCircosAuxLine('AuxLine01'))
```

---

|                    |   |
|--------------------|---|
| NGCircosBackground | <i>Create a BACKGROUND module to be added to a moduleList</i> |
|--------------------|---|

---

### Description

Simple background to display behind another module

### Usage

```

NGCircosBackground(
  modulename,
  compareGroup = 1,
  fillColors = "#EEEEFF",
  borderColors = "#000000",
  axisShow = FALSE,
  axisColor = "#000",
  axisOpacity = 0.5,
  axisNum = 4,
  axisWidth = 0.3,
  maxRadius = 190,
  minRadius = 105,
  borderSize = 0.3,
  animationDisplay = FALSE,
  animationTime = 2000,
  animationDelay = 20,
  animationType = "bounce",
  ...
)

```

### Arguments

modulename       The name of the new module.  
 compareGroup     The group number of this module in compare module  
 fillColors       The color of the background element, in hexadecimal RGB format.

borderColors     The color of the background borders, in hexadecimal RGB format.

axisShow        Whether show a axis or not

axisWidth, axisColor, axisOpacity, axisNum     The color, opacity value and number of line for axis

minRadius, maxRadius     Where the module should begin and end

borderSize       The thickness of the background borders.

animationDisplay     Whether display a animation or not

animationTime, animationDelay, animationType     The time, delay and display type for animation

...               Ignored

### Examples

```
NGCircos(NGCircosBackground('bg01', fillColors="#FFEEEE", borderSize = 1))
```

---

|                |   |
|----------------|---|
| NGCircosBubble | <i>Create a BUBBLE module to a moduleList</i> |
|----------------|---|

---

### Description

A bubble plot displayed in the visualization

### Usage

```
NGCircosBubble(
  modulename,
  compareGroup = 1,
  maxRadius = 200,
  minRadius = 50,
  blockStroke = TRUE,
  blockStrokeColor = "black",
  blockStrokeWidth = 1,
  blockFill = FALSE,
  blockFillColor = "white",
  bubbleMaxSize = 5,
  bubbleMinSize = 2,
  minColor = "red",
  maxColor = "green",
  ValueAxisManualScale = FALSE,
  ValueAxisMaxScale = 10,
  ValueAxisMinScale = 0,
  totallayer = 1,
  animationDisplay = FALSE,
  animationTime = 2000,
  animationDelay = 20,
  animationType = "bounce",
  data,
  ...
)
```

**Arguments**

|   |  |
|---|--|
| <code>modulename</code>                                   | The name of the new module.  |
| <code>compareGroup</code>                                 | The group number of this module in compare module  |
| <code>maxRadius, minRadius</code>                         | Where the module should begin and end.   |
| <code>blockStroke</code>                                  | Whether display the stroke between each bubble block   |
| <code>blockStrokeColor</code>                             | Stroke color for block   |
| <code>blockStrokeWidth</code>                             | Stroke width for block   |
| <code>blockFill</code>                                    | Whether fill a block or not  |
| <code>blockFillColor</code>                               | The color for filling the block  |
| <code>bubbleMaxSize</code>                                | The max size for bubble  |
| <code>bubbleMinSize</code>                                | The min size for bubble  |
| <code>minColor</code>                                     | The color the bubble with min value  |
| <code>maxColor</code>                                     | The color the bubble with max value  |
| <code>ValueAxisManualScale</code>                         | Whether manually control the scale of value  |
| <code>ValueAxisMaxScale, ValueAxisMinScale</code>         | The max and min scale value for manually control   |
| <code>totalLayer</code>                                   | The color and width for stroke   |
| <code>animationDisplay</code>                             | Whether display animation  |
| <code>animationTime, animationDelay, animationType</code> | The time, delay and display type for animation   |
| <code>data</code>   | A list of value in bubble plot with details including chr, start, end, value, name, layer, color and html. Details can be found on document. |
| <code>...</code>  | Ignored  |

**Examples**

```

bubbleData<-bubbleExample
NGCircos(NGCircosBubble('Bubble01', maxRadius = 230, minRadius = 170, data=bubbleData, blockStroke = TRUE,
bubbleMaxSize =10, bubbleMinSize = 2, maxColor = "red", minColor = "yellow", totalLayer =3, animationDisplay = TRUE,
animationType="linear"),genome = list("2L"=23011544,"2R"=21146708,"3L"=24543557,"3R"= 27905053,"X"=22422827),
BUBBLEMouseOverDisplay =TRUE,innerRadius = 236)

```

---

NGCircosChord

---

Create a *CHORD* module to a *moduleList*


---

**Description**

Display a chord module using a data matrix.

**Usage**

```

NGCircosChord(
  modulename,
  innerRadius = 237,
  outerRadius = 238,
  fillOpacity = 0.67,
  fillStrokeWidth = 1,
  padding = 0.06,
  autoFillColor = TRUE,
  fillColor = c("#B8B8B8"),
  fillStrokeColor = c("black"),
  outerARC = TRUE,
  outerARCAutoColor = TRUE,
  outerARCColor = c("red"),
  outerARCStrokeColor = c("black"),
  outerARCText = TRUE,
  data,
  ...
)

```

**Arguments**

|                                  |   |
|----------------------------------|---|
| <code>modulename</code>          | The name of the new module.                             |
| <code>innerRadius</code>         | The inner radius for chord circle                       |
| <code>outerRadius</code>         | The outer radius for chord circle                       |
| <code>fillOpacity</code>         | The opacity for filling color.                          |
| <code>fillStrokeWidth</code>     | The stroke width for chord.                             |
| <code>padding</code>             | The pad of chord  |
| <code>autoFillColor</code>       | Whether auto assign color for chord                     |
| <code>fillColor</code>           | If not, manually assign color for chord                 |
| <code>fillStrokeColor</code>     | The color for stroke                                    |
| <code>outerARC</code>            | Whether display outer arc                               |
| <code>outerARCAutoColor</code>   | If true, whether auto assign color for arc              |
| <code>outerARCColor</code>       | The manually assigned color for arc                     |
| <code>outerARCStrokeColor</code> | The stroke color for arc                                |
| <code>outerARCText</code>        | Whether display text for arc or not                     |
| <code>data</code>                | A matrix-list of chord value with relationship details. |
| <code>...</code>                 | Ignored   |

**Examples**

```

chordData<-chordExample
NGCircos(NGCircosChord('CHORD', data = chordData,innerRadius= 210,outerRadius= 211,fillOpacity=0.67,

```

```
strokeColor="black",strokeWidth= "1px",outerARCText=FALSE),genome=list("C.CK" = 189.51,"C.NPK"=188,"GC.CK"=
"GC.NPK"=191.51,"Alphaproteobacteria"=70.16,"Betaproteobacteria"=23.51,"Gammaproteobacteria"=25.51,
"Deltaproteobacteria"=23.28,"Acidobacteria"=53.62,"Actinobacteria"=72.33,"Bacteroidetes"=22.41,
"Chloroflexi"=15.08,"Firmicutes"=10.72,"Gemmatimonadetes"=26.37,"Planctomycetes"=19.26,"Thaumarchaeota"=6.1,
"Verrucomicrobia"=8.3,"Ascomycota"=159.41,"Basidiomycota"=79.73,"Zygomycota"=139.29 ),outerRadius = 217,
genomeLabelDisplay = FALSE)
```

---

NGCircosCnv

---

Create a CNV module to a moduleList

---

## Description

A copy number variance module displayed in the visualization

## Usage

```
NGCircosCnv(
  modulename,
  compareGroup = 1,
  maxRadius = 200,
  minRadius = 190,
  width = 10,
  color = "#CAE1FF",
  ValueAxisManualScale = FALSE,
  ValueAxisMaxScale = 10,
  ValueAxisMinScale = 0,
  strokeColor = "black",
  strokeWidth = 1,
  opacity = 1,
  animationDisplay = FALSE,
  animationTime = 2000,
  animationDelay = 50,
  animationType = "bounce",
  data,
  ...
)
```

## Arguments

|                                      |   |
|--------------------------------------|---|
| modulename                           | The name of the new module.                       |
| compareGroup                         | The group number of this module in compare module |
| maxRadius, minRadius                 | Where the module should begin and end.            |
| width                                | Width for CNV module                              |
| color                                | Color for CNV module                              |
| ValueAxisManualScale                 | Whether manually control the scale of value       |
| ValueAxisMaxScale, ValueAxisMinScale | The max and min scale value for manually control  |

|  |  |
|--|--|
| strokeColor, strokeWidth                     | The color and width for stroke   |
| opacity                                      | The opacity for module   |
| animationDisplay                             | Whether display animation  |
| animationTime, animationDelay, animationType | The time, delay and display type for animation   |
| data   | A list of CNV with details including start, end, value, link, color and html.<br>Details can be found on document. |
| ...  | Ignored  |

### Examples

```
cnvData<-cnvExample
NGCircos(NGCircosCnv('Cnv01',maxRadius =175, minRadius =116, data =cnvData,width=2,color = "#4876FF")+
NGCircosBackground("bg01",minRadius = 116,maxRadius = 175,fillColors = "#F2F2F2",axisShow = TRUE),CNVMouseOve
```

---

NGCircosGene

---

Create a GENE module to a moduleList

---

### Description

A number of genes with different functional region displayed in the visualization

### Usage

```
NGCircosGene(
  modulename,
  compareGroup = 1,
  outerRadius = 180,
  innerRadius = 150,
  pathColor = "black",
  pathWidth = 1,
  arrow = TRUE,
  arrowGap = 2,
  arrowColor = "blue",
  arrowSize = 5,
  cdsColor = "#1e77b3",
  cdsStrokeColor = "black",
  cdsStrokeWidth = 1,
  utrWidth = -5,
  utrColor = "blue",
  utrStrokeColor = "blue",
  utrStrokeWidth = 1,
  animationDisplay = FALSE,
  animationTime = 2000,
  animationDelay = 20,
  animationType = "bounce",
  data,
  ...
)
```

**Arguments**

|  |   |
|--|---|
| modulename   | The name of the new module.   |
| compareGroup                                       | The group number of this module in compare module   |
| outerRadius, innerRadius                           | Where the module should begin and end.  |
| pathColor  | The color for path between gene elements  |
| pathWidth  | The width for path between gene elements  |
| arrow  | Whether display arrows on path  |
| arrowGap, arrowColor, arrowSize                    | The gap, color and size for arrow   |
| cdsColor, cdsStrokeColor, cdsStrokeWidth           | The color, stroke color and stroke width for coding   |
| utrWidth, utrColor, utrStrokeColor, utrStrokeWidth | The max size for bubble   |
| animationDisplay                                   | Whether display animation   |
| animationTime, animationDelay, animationType       | The time, delay and display type for animation  |
| data   | A list of gene with details including chr, strand, start, end, type, name, link and html. Details can be found on document. |
| ...  | Ignored   |

**Examples**

```
geneData<-geneExample
NGCircos(NGCircosGene('Gene01', outerRadius = 195, innerRadius = 180, data=geneData,arrowGap = 10,
  arrowColor = "black",arrowSize = "12px",cdsColor = "#1e77b3",cdsStrokeColor = "#1e77b3",cdsStrokeWidth= 5,
  utrWidth= -2,utrColor= "#fe7f0e",utrStrokeColor= "#fe7f0e",animationDisplay = TRUE),genome =list("EGFR"=1000,
  outerRadius = 220)
```

---

|                 |  |
|-----------------|--|
| NGCircosHeatmap | <i>Create a HEATMAP module to a moduleList</i> |
|-----------------|--|

---

**Description**

A heatmap plot displayed in the visualization

**Usage**

```
NGCircosHeatmap(
  modulename,
  compareGroup = 1,
  maxRadius = 180,
  minRadius = 100,
  minColor = "red",
  maxColor = "green",
  ValueAxisManualScale = FALSE,
```

```

ValueAxisMaxScale = 10,
ValueAxisMinScale = 0,
totalLayer = 1,
animationDisplay = FALSE,
animationDirection = "O2I",
animationColorDirection = "L2C",
animationTime = 2000,
animationDelay = 20,
animationType = "bounce",
data,
...
)

```

### Arguments

|   |  |
|---|--|
| <code>modulename</code>                                   | The name of the new module.  |
| <code>compareGroup</code>                                 | The group number of this module in compare module  |
| <code>maxRadius, minRadius</code>                         | Where the module should begin and end.   |
| <code>minColor</code>                                     | The color for heatmap with min value   |
| <code>maxColor</code>                                     | The color for heatmap with max value   |
| <code>ValueAxisManualScale</code>                         | Whether manually control the scale of value  |
| <code>ValueAxisMaxScale, ValueAxisMinScale</code>         | The max and min scale value for manually control   |
| <code>totalLayer</code>                                   | The color and width for stroke   |
| <code>animationDisplay</code>                             | Whether display animation  |
| <code>animationDirection</code>                           | The direction for animation. O2I: from outside to inside, I2O: from inside to outside  |
| <code>animationColorDirection</code>                      | The color changing in animation. L2C: lowest to customized, H2C: highest to customized, the customized color should be defined in data |
| <code>animationTime, animationDelay, animationType</code> | The time, delay and display type for animation   |
| <code>data</code>   | A list of value in heatmap plot with details including chr, start, end, value, name, layer and html. Details can be found on document. |
| <code>...</code>  | Ignored  |

### Examples

```

heatmapData<-heatmapExample
NGCircos(NGCircosHeatmap('Heatmap01', maxRadius= 180, minRadius = 100, data=heatmapData, totalLayer = 3),
genome = list("2L"=23011544, "2R"=21146708, "3L"=24543557, "3R"=27905053, "4"=1351857, "X"=22422827),
HEATMAPMouseEvent = TRUE, HEATMAPMouseOverDisplay = TRUE)

```



---

|                   |   |
|-------------------|---|
| NGCircosHistogram | Create a <i>HISTOGRAM</i> module to a <i>moduleList</i> |
|-------------------|---|

---

## Description

Display a multi-layer histogram in circos

## Usage

```
NGCircosHistogram(
  modulename,
  compareGroup = 1,
  maxRadius = 108,
  minRadius = 95,
  ValueAxisManualScale = FALSE,
  ValueAxisMaxScale = 10,
  ValueAxisMinScale = 0,
  fillColor = "red",
  animationDisplay = FALSE,
  animationTime = 2000,
  animationDelay = 20,
  data,
  ...
)
```

## Arguments

|   |   |
|---|---|
| <code>modulename</code>                           | The name of the new module.   |
| <code>compareGroup</code>                         | The group number of this module in compare module   |
| <code>maxRadius, minRadius</code>                 | Where the module should begin and end   |
| <code>ValueAxisManualScale</code>                 | Whether manually control the scale of value   |
| <code>ValueAxisMaxScale, ValueAxisMinScale</code> | The max and min scale value for manually control  |
| <code>fillColor</code>                            | The color for histogram.  |
| <code>animationDisplay</code>                     | Whether display animation   |
| <code>animationTime, animationDelay</code>        | The time and delay for animation  |
| <code>data</code>                                 | A list of value with details including chr, start, end, name, link, value and html. Details can be found on document. |
| <code>...</code>                                  | Ignored   |

## Examples

```
histogramData<-histogramExample
NGCircos(NGCircosHistogram('HISTOGRAM01', data = histogramData, fillColor= "#ff7f0e", maxRadius = 210,
```

```
minRadius = 175),genome=list("2L"=23011544,"2R"=21146708,"3L"=24543557,"3R"= 27905053,"X"=22422827,"4"=1351
outerRadius = 220)
```

---

|                |   |
|----------------|---|
| NGCircosLegend | Create a <i>LEGEND</i> module to a moduleList |
|----------------|---|

---

**Description**

Simple legend annotation displayed in the visualization.

**Usage**

```
NGCircosLegend(
  modulename,
  x = 20,
  y = 20,
  title = "legend",
  size = 6,
  weight = "normal",
  GapBetweenGraphicText = 5,
  GapBetweenLines = 20,
  data,
  ...
)
```

**Arguments**

|                       |   |
|-----------------------|---|
| modulename            | The name of the new module.   |
| x, y                  | Coordinates of the lower left corner of the annotation  |
| title                 | The title for legend  |
| size                  | Font size for title, with units specified (such as em or px).   |
| weight                | Font weight for title. Can be "normal", "bold", "bolder" or "lighter".  |
| GapBetweenGraphicText | Gap between icon and text in legend.  |
| GapBetweenLines       | Gap between each two lines in legend  |
| data                  | A list of legend with details including type, color, opacity, circleSize, rectSize, lineWidth, lineHeight, text, textSize and textWeight. Details can be found on document. |
| ...                   | Ignored   |

**Examples**

```
legend1 <- list(type= "circle", color="#1E77B4",opacity="1.0",circleSize="8",text= "C.CK", textSize= "14",tex
legend2 <- list(type= "circle", color="#AEC7E8",opacity="1.0",circleSize="8",text= "C.NPK", textSize= "14",te
NGCircos(NGCircosLegend('legend01', title = "legend",data=list(legend1,legend2),size = 20))
```

---

|              |                                      |
|--------------|--------------------------------------|
| NGCircosLine | Create a LINE module to a moduleList |
|--------------|--------------------------------------|

---

## Description

Display a multi-layer line plot in circos

## Usage

```
NGCircosLine(
  modulename,
  compareGroup = 1,
  maxRadius = 108,
  minRadius = 95,
  ValueAxisManualScale = FALSE,
  ValueAxisMaxScale = 10,
  ValueAxisMinScale = 0,
  color = "red",
  width = 2,
  type = "cardinal",
  animationDisplay = FALSE,
  animationDirection = "S2E",
  animationTime = 2000,
  animationDelay = 20,
  animationType = "bounce",
  data,
  ...
)
```

## Arguments

|  |   |
|--|---|
| modulename                                   | The name of the new module.   |
| compareGroup                                 | The group number of this module in compare module                           |
| maxRadius, minRadius                         | Where the module should begin and end                                       |
| ValueAxisManualScale                         | Whether manually control the scale of value                                 |
| ValueAxisMaxScale, ValueAxisMinScale         | The max and min scale value for manually control                            |
| color  | Color for line  |
| width  | Width for line  |
| type   | Type for line, could be linear, cardinal, basis and monotone                |
| animationDisplay                             | Whether display animation   |
| animationDirection                           | The direction of animation, could be S2E(start to end) or E2S(end to start) |
| animationTime, animationDelay, animationType | The time, delay and display type for animation                              |

|      |   |
|------|---|
| data | A list of value with details including chr, pos, des, value and html. Details can be found on document. |
| ...  | Ignored   |

## Examples

```
lineData<-lineExample
NGCircos(NGCircosLine('LINE01', data = lineData,maxRadius=200,minRadius=150,color= "#ff0031")+
NGCircosBackground('BG01',minRadius = 205,maxRadius = 150))
```

---

|              |   |
|--------------|---|
| NGCircosLink | <i>Create a LINK module to a moduleList</i> |
|--------------|---|

---

## Description

Link two specific region in genome.

## Usage

```
NGCircosLink(
  modulename,
  compareGroup = 1,
  radius = 108,
  fillColor = "red",
  width = 3,
  type = "Q",
  displayLinkAxis = TRUE,
  axisColor = "#B8B8B8",
  axisWidth = 0.5,
  axisPad = 3,
  displayLinkLabel = TRUE,
  labelColor = "red",
  labelSize = 13,
  labelPad = 8,
  animationDisplay = FALSE,
  animationDirection = "1to2",
  animationTime = 2000,
  animationDelay = 20,
  animationType = "bounce",
  data,
  ...
)
```

## Arguments

|              |   |
|--------------|---|
| modulename   | The name of the new module.                       |
| compareGroup | The group number of thic module in compare module |
| radius       | Radius of link circle.                            |
| fillColor    | Color for link.                                   |

|  |  |
|--|--|
| width  | Width for link.  |
| type   | Type of link, could be Q/S/T   |
| displayLinkAxis                              | Whether display axis for link or not   |
| axisColor                                    | The color for axis   |
| axisWidth                                    | The width for axis   |
| axisPad                                      | The pad for axis   |
| displayLinkLabel                             | Whether display label for link or not  |
| labelColor                                   | The color for label  |
| labelSize                                    | The size for label   |
| labelPad                                     | The pad for label  |
| animationDisplay                             | Whether display animation  |
| animationDirection                           | The direction of link animation, could be 1to2 or 2to1   |
| animationTime, animationDelay, animationType | The time, delay and display type for animation   |
| data   | A list of link with details including g1chr, g1start, g1end, g2chr, g2start, g2end, g1name, g2name, fusion, link and html. Details can be found on document. |
| ...  | Ignored  |

### Examples

```
linkData<-linkExample
NGCircos(NGCircosLink('LINK', data = linkData,LinkRadius= 140,fillColor= "#9e9ac6",width= 2,
axisPad= 3,labelPad=8,animationDisplay=TRUE,animationDirection="1to2", animationType= "linear" ))
```

---

NGCircosLollipop

---

Create a LOLLIPOP module to a moduleList

---

### Description

Display a lollipop plot in the visualization

### Usage

```
NGCircosLollipop(
  modulename,
  compareGroup = 1,
  fillColor = "#9400D3",
  secondColor = "#FFFFFF",
  pointType = "circle",
  circleSize = 2,
  diamondWidth = 10,
  diamondHeight = 5,
  rectWidth = 2,
```

```

    rectHeight = 2,
    stroke = TRUE,
    strokeColor = "#000000",
    strokeWidth = 0.5,
    lineAutoHeight = TRUE,
    lineAutoMaximumHeightZoomRate = 1,
    lineHeightRate = 0.75,
    lineWidth = 2,
    lineColor = "#000000",
    realStart = 0,
    ValueAxisManualScale = FALSE,
    ValueAxisMaxScale = 10,
    ValueAxisMinScale = 0,
    animationDisplay = FALSE,
    animationTime = 2000,
    animationDelay = 20,
    animationType = "bounce",
    data,
    ...
)

```

### Arguments

|   |   |
|---|---|
| <code>modulename</code>                           | The name of the new module.                                     |
| <code>compareGroup</code>                         | The group number of this module in compare module               |
| <code>fillColor</code>                            | Filling color for lollipop                                      |
| <code>secondColor</code>                          | Second filling color for heterogeneous lollipop                 |
| <code>pointType</code>                            | The type for lollipop, could be circle, rect and diamond        |
| <code>circleSize</code>                           | If circle, the size for lollipop                                |
| <code>diamondWidth, diamondHeight</code>          | If diamond, the width and height for lollipop                   |
| <code>rectWidth, rectHeight</code>                | If rect, the width and height for lollipop                      |
| <code>stroke</code>                               | Whether display the stroke for lollipop                         |
| <code>strokeColor, strokeWidth</code>             | The color and width for stroke                                  |
| <code>lineAutoHeight</code>                       | Whether auto assign the height for each lollipop                |
| <code>lineAutoMaximumHeightZoomRate</code>        | If auto assign, the zoom rate for each lollipop                 |
| <code>lineHeightRate</code>                       | If manually assign, the rate of lollipop compared to real value |
| <code>lineWidth, lineColor</code>                 | The width and color for the line of lollipop                    |
| <code>realStart</code>                            | The real start position for data in genome.                     |
| <code>ValueAxisManualScale</code>                 | Whether manually control the scale of value                     |
| <code>ValueAxisMaxScale, ValueAxisMinScale</code> | The max and min scale value for manually control                |
| <code>animationDisplay</code>                     | Whether display animation                                       |

|  |   |
|--|---|
| animationTime, animationDelay, animationType | The time, delay and display type for animation  |
| data   | A list of lollipop value with details including protein, chr, pos, strand, Cancer-TypeNumber, color, link, Consequence, AA_pos, AA_change, type, link and html. Details can be found on document. |
| ...  | Ignored   |

### Examples

```
lollipopData<-lollipopExample
arcData<-arcExample
NGCircos(NGCircosLollipop('Lollipop01', data=lollipopData, fillColor="#9400D3",
circleSize= 6, strokeColor= "#999999", strokeWidth= "1px", animationDisplay=TRUE, lineWidth= 2,
realStart= 101219350)+NGCircosArc('Arc01', outerRadius = 212, innerRadius = 224, data=arcData),
genome=list("EGFR"=1211),outerRadius = 220,genomeFillColor = c("grey"))
```

---

|                    |                                 |
|--------------------|---------------------------------|
| NGCircosModuleList | <i>Create a list of modules</i> |
|--------------------|---------------------------------|

---

### Description

This allows the use of the '+' and '-' operator on these lists

### Usage

```
NGCircosModuleList()

## S3 method for class 'NGCircosModuleList'
x + ...

## S3 method for class 'NGCircosModuleList'
x - ...
```

### Arguments

|     |   |
|-----|---|
| x   | The moduleList on which other modules should be added or removed.   |
| ... | The modules to add (as moduleLists) or to remove (as module names). |

---

|                 |  |
|-----------------|--|
| NGCircosScatter | <i>Create a SCATTER module to a moduleList</i> |
|-----------------|--|

---

### Description

Display a point plot in circos

**Usage**

```

NGCircosScatter(
  modulename,
  compareGroup = 1,
  radius = 140,
  innerCircleSize = 1,
  outerCircleSize = 5,
  innerCircleColor = "#F26223",
  outerCircleColor = "#F26223",
  innerPointType = "circle",
  outerPointType = "circle",
  innerrectWidth = 2,
  innerrectHeight = 2,
  outerrectWidth = 2,
  outerrectHeight = 2,
  outerCircleOpacity = 1,
  random_data = 0,
  animationDisplay = FALSE,
  animationInitialPositionX = 0,
  animationInitialPositionY = 0,
  animationTime = 2000,
  animationDelay = 20,
  animationType = "bounce",
  data,
  ...
)

```

**Arguments**

|   |   |
|---|---|
| <code>modulename</code>   | The name of the new module.                                 |
| <code>compareGroup</code>   | The group number of this module in compare module           |
| <code>radius</code>   | Radius of scatter circle                                    |
| <code>innerCircleSize, outerCircleSize</code>                     | If circle, inner and outer circle size                      |
| <code>innerCircleColor, outerCircleColor</code>                   | If circle, inner and outer circle color                     |
| <code>innerPointType, outerPointType</code>                       | The type for inner and outer point, could be circle or rect |
| <code>innerrectWidth, innerrectHeight</code>                      | If rect, inner width and height                             |
| <code>outerrectWidth, outerrectHeight</code>                      | If rect, inner width and height                             |
| <code>outerCircleOpacity</code>                                   | If circle, the opacity for outer circle                     |
| <code>random_data</code>  | Scatter position fluctuation                                |
| <code>animationDisplay</code>                                     | Whether display animation                                   |
| <code>animationInitialPositionX, animationInitialPositionY</code> | The initial coordinates for animation                       |



|  |   |
|--|---|
| animationTime, animationDelay, animationType | The time, delay and display type for animation  |
| data   | A list of value with details including chr, start, end, name, des, link and html. Details can be found on document. |
| ...  | Ignored   |

## Examples

```
scatterData<-scatterExample
NGCircos(NGCircosScatter('SCATTER01', data = scatterData, radius=180, innerCircleColor= "#3d6390",
outerCircleColor= "#99cafe", random_data= 40))
```

---

NGCircosSnp

---

*Create a module with SNPs to be added to a moduleList*


---

## Description

SNPs are defined by genomic coordinates and associated with a numerical value

## Usage

```
NGCircosSnp(
  modulename,
  compareGroup = 1,
  minRadius = 153,
  maxRadius = 205,
  fillColorType = "specific",
  fillColor = "#9400D3",
  fillr2Color = c("13#ff0031", "#ff0031", "#ff0031", "#ff0031", "#ff0031"),
  ValueAxisManualScale = FALSE,
  ValueAxisMaxScale = 10,
  ValueAxisMinScale = 0,
  pointType = "circle",
  circleSize = 2,
  rectWidth = 2,
  rectHeight = 2,
  animationDisplay = FALSE,
  animationInitialPositionX = 0,
  animationInitialPositionY = 0,
  animationTime = 2000,
  animationDelay = 20,
  animationType = "bounce",
  data,
  ...
)
```

**Arguments**

|  |   |
|--|---|
| modulename   | The name of the new module.   |
| compareGroup   | The group number of this module in compare module   |
| maxRadius, minRadius                                 | Where the module should begin and end   |
| fillColorType  | The type of filling color, could be either specific or r2(means based on r2)  |
| fillColor  | If specific, the color for SNP filling  |
| fillr2Color  | If r2, the color for SNP filling  |
| ValueAxisManualScale                                 | Whether manually control the scale of value   |
| ValueAxisMaxScale, ValueAxisMinScale                 | The max and min scale value for manually control  |
| pointType  | The type of SNP point, could be circle or rect  |
| circleSize   | If circle, the size for SNP circle  |
| rectWidth  | If rect, the width for SNP rect   |
| rectHeight   | If rect, the height for SNP rect  |
| animationDisplay                                     | Whether display animation   |
| animationInitialPositionX, animationInitialPositionY | The initial position coordinates for animation  |
| animationTime, animationDelay, animationType         | The time, delay and display type for animation  |
| data   | A list of SNP value with details including chr, pos, value, des, color, r2value, link, index, image and html. Details can be found on document. |
| ...  | Ignored   |

**Examples**

```
snpData<-snpExample
NGCircos(NGCircosSnp('SNP01', minRadius =150, maxRadius = 190, data = snpExample,fillColor= "#9ACD32",
  circleSize= 2, SNPAnimationDisplay=TRUE,SNPAnimationTime= 2000,SNPAnimationDelay= 0, SNPAnimationType= "li
  NGCircosBackground('BG01',minRadius = 145, maxRadius = 200))
```

---

NGCircosText

---

*Create Text module to be added to a moduleList*


---

**Description**

Simple text annotation displayed in the visualization

**Usage**

```

NGCircosText(
    modulename,
    text,
    x = 0,
    y = 0,
    size = "1.2em",
    weight = "bold",
    opacity = 1,
    color = "#000000",
    rotateRate = 0,
    animationDisplay = FALSE,
    animationInitialSize = 20,
    animationInitialWeight = "bold",
    animationInitialColor = "black",
    animationInitialOpacity = 1,
    animationInitialPositionX = 0,
    animationInitialPositionY = 0,
    animationInitialRotate = 0,
    animationDelay = 50,
    animationTime = 1000,
    animationType = "linear",
    ...
)

```

**Arguments**

|   |   |
|---|---|
| <code>modulename</code>   | The name of the new module.   |
| <code>text</code>   | The text to be displayed.   |
| <code>x, y</code>   | Coordinates of the lower left corner of the annotation  |
| <code>size</code>   | Font size, with units specified (such as em or px).   |
| <code>weight</code>   | Font weight. Can be "normal", "bold", "bolder" or "lighter".  |
| <code>opacity</code>  | Font opacity.   |
| <code>color</code>  | Font color, in hexadecimal RGB format.  |
| <code>rotateRate</code>   | rotate rate for text  |
| <code>animationDisplay</code>                                     | Whether display a animation or not  |
| <code>animationInitialSize</code>                                 | Initial text size in animation  |
| <code>animationInitialWeight</code>                               | Initial text weight in animation  |
| <code>animationInitialColor</code>                                | Initial text color in animation   |
| <code>animationInitialOpacity</code>                              | Initial text opacity in animation   |
| <code>animationInitialPositionX, animationInitialPositionY</code> | Initial text coordinates in animation(The parameter x,y will become the final position for text if animation displayed) |
| <code>animationInitialRotate</code>                               | Initial rotate rate in animation  |

```

animationTime, animationDelay, animationType
    The time, delay and display type for animation
...
    Ignored

```

### Examples

```
NGCircos(NGCircosText('text01', 'Annotation', color = '#DD2222', x = -40))
```

---

NGCircosWig

---

*Create a WIG module to a moduleList*


---

### Description

Display a multi-layer line plot in circos

### Usage

```

NGCircosWig(
  modulename,
  compareGroup = 1,
  maxRadius = 108,
  minRadius = 95,
  direction = "out",
  ValueAxisManualScale = FALSE,
  ValueAxisMaxScale = 10,
  ValueAxisMinScale = 0,
  color = "red",
  opacity = 1,
  strokeColor = "black",
  strokeWidth = 1,
  strokeType = "cardinal",
  animationDisplay = FALSE,
  animationTime = 2000,
  animationDelay = 20,
  animationType = "bounce",
  data,
  ...
)

```

### Arguments

```

modulename      The name of the new module.
compareGroup    The group number of this module in compare module
maxRadius, minRadius
                Where the module should begin and end
direction       The direction of plot, either inside or outside
ValueAxisManualScale
                Whether manually control the scale of value
ValueAxisMaxScale, ValueAxisMinScale
                The max and min scale value for manually control

```

|  |   |
|--|---|
| color  | Color for plot  |
| opacity                                      | Opacity for plot  |
| strokeColor                                  | The color for stroke  |
| strokeWidth                                  | The width for stroke  |
| strokeType                                   | Line type for stroke, could be linear, cardinal, basis and monotone                                     |
| animationDisplay                             | Whether display animation   |
| animationTime, animationDelay, animationType | The time, delay and display type for animation  |
| data   | A list of value with details including chr, pos, des, value and html. Details can be found on document. |
| ...  | Ignored   |

## Examples

```
wigData<-wigExample
NGCircos(NGCircosWig('WIG01', data = wigData, maxRadius= 200,minRadius= 150,strokeColor= "darkblue",
color= "lightblue",strokeType= "cardinal")+NGCircosBackground('BG01',minRadius = 205,maxRadius = 150)
,genome=list("chr8"=1000),outerRadius = 220)
```

---

|                |                                  |
|----------------|----------------------------------|
| scatterExample | <i>Scatter plot example data</i> |
|----------------|----------------------------------|

---

## Description

The data is in matrix with row names

## Usage

```
scatterExample
```

## Format

A data frame with 7 columns:

**chr** chromosome  
**start** start position  
**end** end position  
**name** name for scatter  
**des** description  
**link** hyperlink  
**html** The external html language

---

|            |                              |
|------------|------------------------------|
| snpExample | <i>Snp plot example data</i> |
|------------|------------------------------|

---

**Description**

The data is in matrix with row names

**Usage**

```
snpExample
```

**Format**

A data frame with 10 columns:

**chr** chromosome

**pos** position

**value** value, such as p-value

**des** description

**color** color

**r2value** r2 value

**link** hyperlink for snp

**index** index for combination

**image** image for combination

**html** The external html language

---

|            |                              |
|------------|------------------------------|
| wigExample | <i>Wig plot example data</i> |
|------------|------------------------------|

---

**Description**

The data is in matrix with row names

**Usage**

```
wigExample
```

**Format**

A data frame with 5 columns:

**chr** chromosome

**pos** position

**des** description

**value** value

**html** The external html language

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