

# Package ‘interacCircos’

December 19, 2024

**Type** Package

**Title** The Generation of Interactive Circos Plot

**Description** Implement an efficient approach to display the genomic data, relationship, information in an interactive circular genome(Circos) plot. 'interacCircos' are inspired by 'circosJS', 'BioCircos.js' and 'NG-Circos' and we integrate the modules of 'circosJS', 'BioCircos.js' and 'NG-Circos' into this R package, based on 'htmlwidgets' framework.

**Version** 1.17.0

**License** GPL-3

**Encoding** UTF-8

**LazyData** true

**Depends** R (>= 4.1)

**Imports** RColorBrewer, htmlwidgets, plyr, methods

**RoxygenNote** 7.1.1

**Suggests** knitr, rmarkdown

**VignetteBuilder** knitr

**biocViews** Visualization

**git\_url** <https://git.bioconductor.org/packages/interacCircos>

**git\_branch** devel

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**Repository** Bioconductor 3.21

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

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**Description**

The data is in matrix with column 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

*Bubble plot example data*

---

**Description**

The data is in matrix with column 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

---

 chord.pExample

*Example data of chord plot of circosJS*


---

### Description

The data is in matrix with column names

### Usage

chord.pExample

### Format

A data frame in which each row represents the relationship from one genome position(source) to another one(target):

**source\_chr** chromosome name of source

**source\_start** start position of source

**source\_end** end position of source

**target\_chr** chromosome name of target

**target\_start** start position of target

**target\_end** end position of target

---

 chordExample

*Example data of chord plot of NG-Circos*


---

### Description

The data is in matrix with column names. The order and number is same as column, representing the same items

### Usage

chordExample

### Format

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

**C.CK** Genome 1, the name for each arc

**C.NPK** Genome 2, the name for each arc

**GC.CK** Genome 2, the name for each arc

**GC.NPK** Genome 2, the name for each arc

**Alphaproteobacteria** Genome 2, the name for each arc  
**Betaproteobacteria** Genome 2, the name for each arc  
**Gammaproteobacteria** Genome 2, the name for each arc  
**Deltaproteobacteria** Genome 8, the name for each arc  
**Acidobacteria** Genome 9, the name for each arc  
**Actinobacteria** Genome 10, the name for each arc  
**Bacteroidetes** Genome 11, the name for each arc  
**Chloroflexi** Genome 12, the name for each arc  
**Firmicutes** Genome 13, the name for each arc  
**Gemmatimonadetes** Genome 14, the name for each arc  
**Planctomycetes** Genome 15, the name for each arc  
**Thaumarchaeota** Genome 16, the name for each arc  
**Verrucomicrobia** Genome 17, the name for each arc  
**Ascomycota** Genome 18, the name for each arc  
**Basidiomycota** Genome 19, the name for each arc  
**Zygomycota** Genome 20, the name for each arc

---

Circos

*interacCircos*

---

## Description

Visualization of Interactive Circos Plot

## Usage

```
Circos(  
  moduleList = CircosModuleList(),  
  genome = "hg19",  
  genome2 = "hg19",  
  genomeFillColor = "Spectral",  
  chrPad = 0.02,  
  width = NULL,  
  height = NULL,  
  innerRadius = 216,  
  outerRadius = 240,  
  svgClassName = "interacCircos",  
  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,
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genomeLabelTextSize = "10pt",
genomeLabelTextColor = "#000",
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genomeLabelDy = 0,
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compareEventGroupDistance = 0,
zoom = TRUE,
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SNPMouseEventCombinationImageTitleColor = "black",
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LINEMouseOverTooltipsOpacity = 1,
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WIGMouseClickLineStrokeColor = "none",
WIGMouseClickLineStrokeWidth = "none",
WIGMouseClickFillColor = "none",
WIGMouseDownDisplay = FALSE,
WIGMouseDownLineOpacity = 1,
WIGMouseDownLineStrokeColor = "none",
WIGMouseDownLineStrokeWidth = "none",
WIGMouseDownFillColor = "none",
WIGMouseEnterDisplay = FALSE,
```

```
WIGMouseEnterLineOpacity = 1,  
WIGMouseEnterLineStrokeColor = "none",  
WIGMouseEnterLineStrokeWidth = "none",  
WIGMouseEnterFillColor = "none",  
WIGMouseLeaveDisplay = FALSE,  
WIGMouseLeaveLineOpacity = 1,  
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WIGMouseLeaveLineStrokeWidth = "none",  
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WIGMouseUpFillColor = "none",  
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WIGMouseOverTooltipsBackgroundColor = "white",  
WIGMouseOverTooltipsBorderStyle = "solid",  
WIGMouseOverTooltipsBorderWidth = 0,  
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WIGMouseOverTooltipsBorderRadius = "3px",  
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SCATTERxlink = FALSE,  
SCATTERMouseEvent = TRUE,  
SCATTERMouseClickDisplay = FALSE,  
SCATTERMouseClickColor = "red",  
SCATTERMouseClickCircleSize = 2,  
SCATTERMouseClickCircleOpacity = 1,  
SCATTERMouseClickCircleStrokeColor = "none",  
SCATTERMouseClickCircleStrokeWidth = "none",  
SCATTERMouseClickTextFromData = "fourth",
```



```
SCATTERMouseClickTextOpacity = 1,  
SCATTERMouseClickTextColor = "red",  
SCATTERMouseClickTextSize = 8,  
SCATTERMouseClickTextPostionX = 1,  
SCATTERMouseClickTextPostionY = 10,  
SCATTERMouseClickTextDrag = TRUE,  
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SCATTERMouseDownCircleOpacity = 1,  
SCATTERMouseDownCircleStrokeColor = "none",  
SCATTERMouseDownCircleStrokeWidth = "none",  
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SCATTERMouseEnterColor = "red",  
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SCATTERMouseEnterCircleOpacity = 1,  
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SCATTERMouseEnterCircleStrokeWidth = "none",  
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SCATTERMouseLeaveColor = "red",  
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SCATTERMouseLeaveCircleOpacity = 1,  
SCATTERMouseLeaveCircleStrokeColor = "none",  
SCATTERMouseLeaveCircleStrokeWidth = "none",  
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SCATTERMouseMoveCircleOpacity = 1,  
SCATTERMouseMoveCircleStrokeColor = "none",  
SCATTERMouseMoveCircleStrokeWidth = "none",  
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SCATTERMouseOutAnimationTime = 500,  
SCATTERMouseOutColor = "red",  
SCATTERMouseOutCircleSize = 2,  
SCATTERMouseOutCircleOpacity = 1,  
SCATTERMouseOutCircleStrokeColor = "none",  
SCATTERMouseOutCircleStrokeWidth = "none",  
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SCATTERMouseUpCircleStrokeWidth = "none",  
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SCATTERMouseOverColor = "red",  
SCATTERMouseOverCircleSize = 2,  
SCATTERMouseOverCircleOpacity = 1,  
SCATTERMouseOverCircleStrokeColor = "none",
```

```
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SCATTERMouseOverTooltipsPosition = "absolute",
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SCATTERMouseOverTooltipsBorderStyle = "solid",
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ARCxlink = FALSE,
ARCMouseEvent = TRUE,
ARCMouseClickedDisplay = FALSE,
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ARCMouseClickedArcStrokeColor = "none",
ARCMouseClickedArcStrokeWidth = "none",
ARCMouseClickedTextFromData = "fourth",
ARCMouseClickedTextOpacity = 1,
ARCMouseClickedTextColor = "red",
ARCMouseClickedTextSize = 8,
ARCMouseClickedTextPostionX = 1,
ARCMouseClickedTextPostionY = 10,
ARCMouseClickedTextDrag = TRUE,
ARCMouseDownDisplay = FALSE,
ARCMouseDownColor = "red",
ARCMouseDownArcOpacity = 1,
ARCMouseDownArcStrokeColor = "none",
ARCMouseDownArcStrokeWidth = "none",
ARCMouseEnterDisplay = FALSE,
ARCMouseEnterColor = "red",
ARCMouseEnterArcOpacity = 1,
ARCMouseEnterArcStrokeColor = "none",
ARCMouseEnterArcStrokeWidth = "none",
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ARCMouseLeaveColor = "red",
ARCMouseLeaveArcOpacity = 1,
ARCMouseLeaveArcStrokeColor = "none",
ARCMouseLeaveArcStrokeWidth = "none",
ARCMouseMoveDisplay = FALSE,
ARCMouseMoveColor = "red",
ARCMouseMoveArcOpacity = 1,
ARCMouseMoveArcStrokeColor = "none",
ARCMouseMoveArcStrokeWidth = "none",
ARCMouseOutDisplay = FALSE,
ARCMouseOutAnimationTime = 500,
ARCMouseOutColor = "red",
ARCMouseOutArcOpacity = 1,
```

```
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ARCMouseUpColor = "red",
ARCMouseUpArcOpacity = 1,
ARCMouseUpArcStrokeColor = "none",
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ARCMouseOverArcOpacity = 1,
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ARCMouseOverArcStrokeWidth = "none",
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ARCMouseOverTooltipsHtml = " ",
ARCMouseOverTooltipsPosition = "absolute",
ARCMouseOverTooltipsBackgroundColor = "white",
ARCMouseOverTooltipsBorderStyle = "solid",
ARCMouseOverTooltipsBorderWidth = 0,
ARCMouseOverTooltipsPadding = "3px",
ARCMouseOverTooltipsBorderRadius = "3px",
ARCMouseOverTooltipsOpacity = 1,
GENExlink = FALSE,
GENEMouseEvent = TRUE,
GENEMouseClickDisplay = FALSE,
GENEMouseClickColor = "red",
GENEMouseClickArcOpacity = 1,
GENEMouseClickArcStrokeColor = "none",
GENEMouseClickArcStrokeWidth = "none",
GENEMouseClickTextFromData = "fourth",
GENEMouseClickTextOpacity = 1,
GENEMouseClickTextColor = "red",
GENEMouseClickTextSize = 8,
GENEMouseClickTextPostionX = 1,
GENEMouseClickTextPostionY = 10,
GENEMouseClickTextDrag = TRUE,
GENEMouseDownDisplay = FALSE,
GENEMouseDownColor = "red",
GENEMouseDownArcOpacity = 1,
GENEMouseDownArcStrokeColor = "none",
GENEMouseDownArcStrokeWidth = "none",
GENEMouseEnterDisplay = FALSE,
GENEMouseEnterColor = "red",
GENEMouseEnterArcOpacity = 1,
GENEMouseEnterArcStrokeColor = "none",
GENEMouseEnterArcStrokeWidth = "none",
GENEMouseLeaveDisplay = FALSE,
GENEMouseLeaveColor = "red",
GENEMouseLeaveArcOpacity = 1,
```

```
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GENEMouseLeaveArcStrokeWidth = "none",
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GENEMouseMoveColor = "red",
GENEMouseMoveArcOpacity = 1,
GENEMouseMoveArcStrokeColor = "none",
GENEMouseMoveArcStrokeWidth = "none",
GENEMouseOutDisplay = FALSE,
GENEMouseOutAnimationTime = 500,
GENEMouseOutColor = "red",
GENEMouseOutArcOpacity = 1,
GENEMouseOutArcStrokeColor = "none",
GENEMouseOutArcStrokeWidth = "none",
GENEMouseUpDisplay = FALSE,
GENEMouseUpColor = "red",
GENEMouseUpArcOpacity = 1,
GENEMouseUpArcStrokeColor = "none",
GENEMouseUpArcStrokeWidth = "none",
GENEMouseOverDisplay = FALSE,
GENEMouseOverColor = "red",
GENEMouseOverArcOpacity = 1,
GENEMouseOverArcStrokeColor = "none",
GENEMouseOverArcStrokeWidth = "none",
GENEMouseOverTooltipsSetting = "style1",
GENEMouseOverTooltipsHtml = " ",
GENEMouseOverTooltipsPosition = "absolute",
GENEMouseOverTooltipsBackgroundColor = "white",
GENEMouseOverTooltipsBorderStyle = "solid",
GENEMouseOverTooltipsBorderWidth = 0,
GENEMouseOverTooltipsPadding = "3px",
GENEMouseOverTooltipsBorderRadius = "3px",
GENEMouseOverTooltipsOpacity = 1,
LOLLIPOPxlink = FALSE,
LOLLIPOPMouseEvent = TRUE,
LOLLIPOPMouseClickedDisplay = FALSE,
LOLLIPOPMouseClickedColor = "red",
LOLLIPOPMouseClickedCircleSize = 2,
LOLLIPOPMouseClickedCircleOpacity = 1,
LOLLIPOPMouseClickedCircleStrokeColor = "none",
LOLLIPOPMouseClickedCircleStrokeWidth = "none",
LOLLIPOPMouseClickedTextFromData = "fourth",
LOLLIPOPMouseClickedTextOpacity = 1,
LOLLIPOPMouseClickedTextColor = "red",
LOLLIPOPMouseClickedTextSize = 8,
LOLLIPOPMouseClickedTextPostionX = 1,
LOLLIPOPMouseClickedTextPostionY = 10,
LOLLIPOPMouseClickedTextDrag = TRUE,
LOLLIPOPMouseDownDisplay = FALSE,
```

```
LOLLIPOPMouseDownColor = "red",
LOLLIPOPMouseDownCircleSize = 2,
LOLLIPOPMouseDownCircleOpacity = 1,
LOLLIPOPMouseDownCircleStrokeColor = "none",
LOLLIPOPMouseDownCircleStrokeWidth = "none",
LOLLIPOPMouseEnterDisplay = FALSE,
LOLLIPOPMouseEnterColor = "red",
LOLLIPOPMouseEnterCircleSize = 2,
LOLLIPOPMouseEnterCircleOpacity = 1,
LOLLIPOPMouseEnterCircleStrokeColor = "none",
LOLLIPOPMouseEnterCircleStrokeWidth = "none",
LOLLIPOPMouseLeaveDisplay = FALSE,
LOLLIPOPMouseLeaveColor = "red",
LOLLIPOPMouseLeaveCircleSize = 2,
LOLLIPOPMouseLeaveCircleOpacity = 1,
LOLLIPOPMouseLeaveCircleStrokeColor = "none",
LOLLIPOPMouseLeaveCircleStrokeWidth = "none",
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LOLLIPOPMouseMoveColor = "red",
LOLLIPOPMouseMoveCircleSize = 2,
LOLLIPOPMouseMoveCircleOpacity = 1,
LOLLIPOPMouseMoveCircleStrokeColor = "none",
LOLLIPOPMouseMoveCircleStrokeWidth = "none",
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LOLLIPOPMouseOutAnimationTime = 500,
LOLLIPOPMouseOutColor = "red",
LOLLIPOPMouseOutCircleSize = 2,
LOLLIPOPMouseOutCircleOpacity = 1,
LOLLIPOPMouseOutCircleStrokeColor = "none",
LOLLIPOPMouseOutCircleStrokeWidth = "none",
LOLLIPOPMouseUpDisplay = FALSE,
LOLLIPOPMouseUpColor = "red",
LOLLIPOPMouseUpCircleSize = 2,
LOLLIPOPMouseUpCircleOpacity = 1,
LOLLIPOPMouseUpCircleStrokeColor = "none",
LOLLIPOPMouseUpCircleStrokeWidth = "none",
LOLLIPOPMouseOverDisplay = FALSE,
LOLLIPOPMouseOverColor = "red",
LOLLIPOPMouseOverCircleSize = 2,
LOLLIPOPMouseOverCircleOpacity = 1,
LOLLIPOPMouseOverCircleStrokeColor = "none",
LOLLIPOPMouseOverCircleStrokeWidth = "none",
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LOLLIPOPMouseOverTooltipsHtml = " ",
LOLLIPOPMouseOverTooltipsPosition = "absolute",
LOLLIPOPMouseOverTooltipsBackgroundColor = "white",
LOLLIPOPMouseOverTooltipsBorderStyle = "solid",
LOLLIPOPMouseOverTooltipsBorderWidth = 0,
```

```

LOLLIPOPMouseOverTooltipsPadding = "3px",
LOLLIPOPMouseOverTooltipsBorderRadius = "3px",
LOLLIPOPMouseOverTooltipsOpacity = 1,
elementId = NULL,
...
)

```

## Arguments

|  |  |
|--|--|
| <code>moduleList</code>  | Module list displayed in plot  |
| <code>genome</code>  | Could be either 'hg19', which is defaultly set to use chromosomes of hg19, or a list of chromosomes with length, for example, <code>list("chr1"=100,"chr2"=200)</code> |
| <code>genome2</code>   | Second genome when compare module is applied, format is same as <code>genome</code>  |
| <code>genomeFillColor</code>   | Could be either a color palette from <code>RColorBrewer</code> , or a list of color name, for example, <code>list("yellow","rgb(1,255,255)")</code>                    |
| <code>chrPad</code>  | Distance between each chromosome, default is 0.04  |
| <code>width, height</code>   | The width and height for svg element, could be px or percent or auto   |
| <code>innerRadius</code>   | Default 216, Inner radius of chromosome  |
| <code>outerRadius</code>   | Default 240, Outer radius of chromosome  |
| <code>svgClassName</code>  | The svg class name   |
| <code>displayGenomeBorder</code>   | Whether display a border for genome track or not   |
| <code>genomeBorderColor, genomeBorderSize</code>   | The color and size for border of genome  |
| <code>genomeTicksDisplay</code>  | Whether display the ticks for genome track   |
| <code>genomeTicksLen, genomeTicksColor, genomeTicksTextSize, genomeTicksTextColor, genomeTicksScale, genomeTicksRealLength, genomeTicksOffset</code> | arameters only works when <code>genomeTicksDisplay</code> is TRUE and their details are available on document  |
| <code>genomeLabelDisplay, genomeLabelTextSize, genomeLabelTextColor, genomeLabelDx, genomeLabelDy</code>   | Whether display the label for chromosome panel. Other parameters only works when <code>genomeTicksDisplay</code> is TRUE and their details are available on document   |
| <code>compareEvent</code>  | Default False, open/not COMPARE module   |
| <code>compareEventGroupGapRate</code>  | Default 0.1, control the two-side gap rate on each group of genome   |
| <code>compareEventGroupDistance</code>   | Default 0, distance between two groups of genome   |
| <code>zoom</code>  | Whether or not the plot is zoomable?   |
| <code>TEXTModuleDragEvent</code>   | 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                           |
| CNVMouseClickedTextOpacity                             | Text opacity when mouse clicking the element                          |
| CNVMouseClickedTextColor                               | Text color when mouse clicking the element                            |
| CNVMouseClickedTextSize                                | Text size when mouse clicking the element                             |
| CNVMouseClickedTextPostionX, CNVMouseClickTextPostionY | Text coordinates when mouse clicking the element                      |
| CNVMouseClickedTextDrag                                | 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  
Defalut False, hide/not tooltip when mouse is not hovering a CNV point any-  
more

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  
Defalut 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

BUBBLEMouseClickOpacity  
Opacity when mouse clicking

BUBBLEMouseClickStrokeColor  
Stroke color when mouse clicking

BUBBLEMouseClickStrokeWidth  
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

SNPMouseClickedCircleOpacity  
Opacity after clicking the element

SNPMouseClickedCircleStrokeColor  
Stroke color after clicking the element

SNPMouseClickedCircleStrokeWidth  
Stroke width after clicking the element

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

SNPMouseClickedTextOpacity  
Text opacity after clicking the element

SNPMouseClickedTextColor  
Text color after clicking the element

SNPMouseClickedTextSize  
Text size after clicking the element

SNPMouseClickedTextPostionX, SNPMouseClickedTextPostionY  
Text coordinate after clicking the element

SNPMouseClickedTextDrag  
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

LINKMouseClickDisplay  
Default False, show/not the tooltip when mouse click on a LINK point

LINKMouseClickOpacity  
Opacity when mouse clicking

LINKMouseClickStrokeColor  
Stroke color when mouse clicking

LINKMouseClickStrokeWidth  
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 from NG-Circos

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  
Defalut 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

HISTOGRAMMouseClickedStrokeColor  
Stroke color when mouse clicking

HISTOGRAMMouseClickedStrokeWidth  
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  
Defalut 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



|                              |  |
|------------------------------|--|
| LINEMouseDownLineStyleColor  | Stroke color when mouse moving down the element                                  |
| LINEMouseDownLineStyleWidth  | 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                                     |
| LINEMouseEnterLineStyleColor | Stroke color when mouse entering the element                                     |
| LINEMouseEnterLineStyleWidth | 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                                      |
| LINEMouseLeaveLineStyleColor | Stroke color when mouse leaving the element                                      |
| LINEMouseLeaveLineStyleWidth | 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                                    |
| LINEMouseMoveLineStyleColor  | Stroke color when mouse moving in the element                                    |
| LINEMouseMoveLineStyleWidth  | 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                                   |
| LINEMouseOutLineStyleColor   | Stroke color when mouse moving out the element                                   |
| LINEMouseOutLineStyleWidth   | 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                                    |
| LINEMouseUpLineStyleColor    | 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

WIGMouseClickedDisplay  
Default False, show/not the tooltip when mouse click on a WIG point

WIGMouseClickedLineOpacity  
Line opacity when mouse clicking the element

WIGMouseClickedLineStrokeColor  
Stroke color when mouse clicking the element

WIGMouseClickedLineStrokeWidth  
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 anymore |
| 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  
Defalut 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                   |
| ARCMouseClickedDisplay                  | Default False, show/not the tooltip when mouse click on a ARC point     |
| ARCMouseClickedColor                    | 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          | Default False, hide/not tooltip when mouse is not hovering a ARC point anymore |
| 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  
Defalut False, hide/not tooltip when mouse is not hovering a GENE point any-  
more

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  |

**Value**

The main figure for interacCircos with all tracks

**Examples**

```
Circos(genome = "hg19")
```

---

CircosArc

*ARC module*

---

**Description**

Create the CNV plot without value, Gene domain, Chromosome band

**Usage**

```
CircosArc(
  modulename,
  compareGroup = 1,
  outerRadius = 150,
  innerRadius = 130,
  opacity = 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   |
| innerRadius, outerRadius                     | Where the module should begin and end   |
| opacity                                      | The opacity for arc   |
| animationDisplay                             | Whether display animation   |
| animationTime, animationDelay, animationType | The time, delay and display type for animation  |
| data   | A list of arc with details including chr, start, end, color, des, link and html. Details can be found on document |
| ...  | Ignored   |



**Value**

The module tracks for arc modules

**Examples**

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

---

CircosAuxLine

*AUXILIARYLINE module*

---

**Description**

A auxiliary line for better explanation of the visualization

**Usage**

```
CircosAuxLine(
  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   |

**Value**

The module tracks for auxiliary line modules

**Examples**

```
Circos(CircosAuxLine('AuxLine01'))
```

---

CircosBackground      *BACKGROUND module*

---

**Description**

Background for better display of other modules

**Usage**

```

CircosBackground(
  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 filling color of the module                      |
| borderColors                                 | The border color of the module                       |
| axisShow                                     | Whether show a axis or not                           |
| axisWidth, axisColor, axisOpacity, axisNum   | The color, opacity value and number of line for axis |
| minRadius, maxRadius                         | The outer and inner ring range of module             |
| borderSize                                   | The thickness of the border                          |
| animationDisplay                             | Whether display animation or not                     |
| animationTime, animationDelay, animationType | The time, delay and display type for animation       |
| ...  | Ignored  |

**Value**

The module tracks for background modules.

**Examples**

```

Circos(CircosBackground('bg01', fillColors="#FFEEEE", borderSize = 1))

```

---

CircosBubble

*BUBBLE module*


---

### Description

Create a bubble plot

### Usage

```
CircosBubble(
  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> | The outer and inner ring range of module             |
| <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                               |

|  |   |
|--|---|
| blockFill                                    | Whether fill a block or not   |
| blockFillColor                               | The color for filling the block   |
| bubbleMaxSize                                | The max size for bubble   |
| bubbleMinSize                                | The min size for bubble   |
| minColor                                     | The color the bubble of min value   |
| maxColor                                     | The color the bubble of max value   |
| ValueAxisManualScale                         | Whether manually control the scale of value   |
| ValueAxisMaxScale, ValueAxisMinScale         | The max and min scale value for manually control  |
| totalLayer                                   | The color and width for stroke  |
| animationDisplay                             | Whether display animation   |
| animationTime, animationDelay, animationType | The time, delay and display type for animation  |
| data   | 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 |
| ...  | Ignored   |

**Value**

The module tracks for bubble modules

**Examples**

```
bubbleData<-bubbleExample
Circos(CircosBubble('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,"4"=1351857),
BUBBLEmouseoverDisplay =TRUE,innerRadius = 236)
```

**Description**

Create a chord module using a data matrix

**Usage**

```

CircosChord(
  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  |

**Value**

The module tracks for chord modules of NG-Circos

**Examples**

```
chordData<-chordExample
CircosChord('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"=186.11, "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"=6.15, "Verrucomicrobia"=8.3,
"Ascomycota"=159.41, "Basidiomycota"=79.73,"Zygomycota"=139.29 ),outerRadius = 217,
genomeLabelDisplay = FALSE)
```

---

CircosChord.p

*CHORD module of circosJS*


---

**Description**

Create a chord module using a data path. chord.p means chord plot based on path

**Usage**

```
CircosChord.p(
  modulename,
  radius = 216,
  opacity = 0.67,
  color = "#B8B8B8",
  data,
  ...
)
```

**Arguments**

|            |   |
|------------|---|
| modulename | The name of the new module  |
| radius     | The radius for chord circle   |
| opacity    | The opacity for chord   |
| color      | The color for chord   |
| data       | A list of chord value with relationship details, details could be found on chord.pExample |
| ...        | Ignored   |

**Value**

The module tracks for chord modules of circosJS

**Examples**

```
chord.pData<-chord.pExample
Circos()
```

---

CircosCnv

*CNV module*


---

**Description**

Create a copy number variance module

**Usage**

```
CircosCnv(
  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 | The outer and inner ring range of module           |
| width                | Width for CNV module                               |
| color                | Color for CNV module                               |
| ValueAxisManualScale | Whether manually control the scale of value or not |



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

**Value**

The module tracks for cnv modules

**Examples**

```
cnvData<-cnvExample
Circos(CircosCnv('Cnv01',maxRadius =175, minRadius =116, data =cnvData,width=2,color = "#4876FF")+
CircosBackground("bg01",minRadius = 116,maxRadius = 175,fillColors = "#F2F2F2",axisShow = TRUE),
CNVMouseOverDisplay = TRUE)
```

---

CircosGene

*GENE module*

---

**Description**

Create a number of genes with different functional region

**Usage**

```
CircosGene(
  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  |

### Value

The module tracks for gene modules

### Examples

```

geneData<-geneExample
Circos(CircosGene('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)

```

---

CircosHeatmap                    *HEATMAP module*

---

### Description

Create a heatmap plot

### Usage

```
CircosHeatmap(
  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

|                                      |   |
|--------------------------------------|---|
| 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             |
| minColor                             | The color for heatmap of min value                |
| maxColor                             | The color for heatmap of max value                |
| ValueAxisManualScale                 | Whether manually control the scale of value       |
| ValueAxisMaxScale, ValueAxisMinScale | The max and min scale value for manually control  |
| totalLayer                           | The color and width for stroke                    |
| animationDisplay                     | Whether display animation                         |

|  |  |
|--|--|
| animationDirection                           | The direction for animation. O2I: from outside to inside, I2O: from inside to outside  |
| animationColorDirection                      | The color changing in animation. L2C: lowest to customized, H2C: highest to customized, the customized color should be defined in data |
| animationTime, animationDelay, animationType | The time, delay and display type for animation   |
| data   | A list of value in heatmap plot with details including chr, start, end, value, name, layer and html. Details can be found on document  |
| ...  | Ignored  |

**Value**

The module tracks for heatmap modules.

**Examples**

```
heatmapData<-heatmapExample
Circos(CircosHeatmap('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)
```

---

CircosHistogram      *HISTOGRAM module*

---

**Description**

Create a multi-layer histogram plot

**Usage**

```
CircosHistogram(
  modulename,
  compareGroup = 1,
  maxRadius = 108,
  minRadius = 95,
  ValueAxisManualScale = FALSE,
  ValueAxisMaxScale = 10,
  ValueAxisMinScale = 0,
  fillColor = "red",
  animationDisplay = FALSE,
  animationTime = 2000,
  animationDelay = 20,
  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   |
| fillColor                            | The color for histogram  |
| animationDisplay                     | Whether display animation  |
| animationTime, animationDelay        | The time and delay for animation   |
| data                                 | A list of value with details including chr, start, end, name, link, value and html. Details can be found on document |
| ...                                  | Ignored  |

**Value**

The module tracks for histogram modules

**Examples**

```

histogramData<-histogramExample
Circos(CircosHistogram('HISTOGRAM01', data = histogramData,fillColor= "#ff7f0e",maxRadius = 210,
minRadius = 175),genome=list("2L"=23011544,"2R"=21146708,"3L"=24543557,"3R"= 27905053,
"X"=22422827,"4"=1351857),
outerRadius = 220)

```

---

CircosLegend

*LEGEND module*

---

**Description**

Simple legend annotation displayed in the visualization

**Usage**

```

CircosLegend(
  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                  | The coordinates if legend  |
| title                 | The title for legend   |
| size                  | Font size for title  |
| weight                | Font weight for title. Should be either "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  |

### Value

The module tracks for legend modules.

### Examples

```

legend1 <- list(type= "circle", color="#1E77B4",opacity="1.0",circleSize="8",text= "C.CK",
textSize= "14",textWeight="normal")
legend2 <- list(type= "circle", color="#AEC7E8",opacity="1.0",circleSize="8",text= "C.NPK",
textSize= "14",textWeight="normal")
Circos(CircosLegend('legend01', title = "legend",data=list(legend1,legend2),size = 20))

```

---

CircosLine

*LINE module*

---

### Description

Create a multi-layer line plot

**Usage**

```

CircosLine(
  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  |

**Value**

The module tracks for line modules

**Examples**

```
lineData<-lineExample
Circos(CircosLine('LINE01', data = lineData,maxRadius=200,minRadius=150,color= "#ff0031")+
CircosBackground('BG01',minRadius = 205,maxRadius = 150))
```

CircosLink

*LINK module***Description**

Create a link of two specific region in genome

**Usage**

```
CircosLink(
  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   |

**Value**

The module tracks for link modules

**Examples**

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

---

CircosLollipop

*LOLLIPOP module*


---

**Description**

Create a lollipop plot

**Usage**

```

CircosLollipop(
  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**

|                             |  |
|-----------------------------|--|
| modulename                  | The name of the new module                               |
| compareGroup                | The group number of this module in compare module        |
| fillColor                   | Filling color for lollipop                               |
| secondColor                 | Second filling color for heterogeneous lollipop          |
| pointType                   | The type for lollipop, could be circle, rect and diamond |
| circleSize                  | If circle, the size for lollipop                         |
| diamondWidth, diamondHeight | If diamond, the width and height for lollipop            |
| rectWidth, rectHeight       | If rect, the width and height for lollipop               |
| stroke                      | Whether display the stroke for lollipop                  |

|  |  |
|--|--|
| strokeColor, strokeWidth                     | The color and width for stroke   |
| lineAutoHeight                               | Whether auto assign the height for each lollipop   |
| lineAutoMaximumHeightZoomRate                | If auto assign, the zoom rate for each lollipop  |
| lineHeightRate                               | If manually assign, the rate of lollipop compared to real value  |
| lineWidth, lineColor                         | The width and color for the line of lollipop   |
| realStart                                    | The real start position for data in genome   |
| ValueAxisManualScale                         | Whether manually control the scale of value  |
| ValueAxisMaxScale, ValueAxisMinScale         | The max and min scale value for manually control   |
| animationDisplay                             | 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  |

**Value**

The module tracks for lollipop modules.

**Examples**

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

---

CircosModuleList      *Create a list of modules*

---

**Description**

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

**Usage**

```

CircosModuleList()

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

## S3 method for class 'CircosModuleList'
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)

```

**Value**

The list of all tracks of modules.

---

|               |                       |
|---------------|-----------------------|
| CircosScatter | <i>SCATTER module</i> |
|---------------|-----------------------|

---

**Description**

Create a point plot

**Usage**

```

CircosScatter(
  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

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

### Value

The module tracks for scatter modules

### Examples

```

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

```

CircosSnp

*SNP module***Description**

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

**Usage**

```
CircosSnp(
  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**

|                                   |  |
|-----------------------------------|--|
| <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>fillColorType</code>        | The type of filling color, could be either specific or r2(means based on r2) |
| <code>fillColor</code>            | If specific, the color for SNP filling                                       |
| <code>fillr2Color</code>          | If r2, the color for SNP filling   |
| <code>ValueAxisManualScale</code> | 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  |

**Value**

The module tracks for snp modules

**Examples**

```
snpData<-snpExample
Circos(CircosSnp('SNP01', minRadius =150, maxRadius = 190, data = snpExample,fillColor= "#9ACD32",
  circleSize= 2, SNPAnimationDisplay=TRUE,SNPAnimationTime= 2000,SNPAnimationDelay= 0,
  SNPAnimationType= "linear") + CircosBackground('BG01',minRadius = 145, maxRadius = 200))
```

---

CircosText

*Text module*

---

**Description**

Text for better explanation of other modules

**Usage**

```
CircosText(
  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

|  |   |
|--|---|
| modulename   | The name of the new module  |
| text   | The details of text   |
| x, y   | The coordinates of the text   |
| size   | Font size   |
| weight   | Font weight. Should be either "normal", "bold", "bolder" or "lighter"   |
| opacity  | Font opacity  |
| color  | Font color  |
| rotateRate   | rotate rate for text  |
| animationDisplay                                     | Whether display animation or not  |
| animationInitialSize                                 | Initial text size in animation  |
| animationInitialWeight                               | Initial text weight in animation  |
| animationInitialColor                                | Initial text color in animation   |
| animationInitialOpacity                              | Initial text opacity in animation   |
| animationInitialPositionX, animationInitialPositionY | Initial text coordinates in animation(The parameter x,y will become the final position for text if animation displayed) |
| animationInitialRotate                               | Initial rotate rate in animation  |
| animationTime, animationDelay, animationType         | The time, delay and display type for animation  |
| ...  | Ignored   |

### Value

The module tracks for text modules.



**Examples**

```
Circos(CircosText('text01', 'Annotation', color = '#DD2222', x = -40))
```

---

CircosWig

*WIG module*


---

**Description**

Create a multi-layer line plot

**Usage**

```
CircosWig(
  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  |

**Value**

The module tracks for wig modules

**Examples**

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

---

cnvExample

*Cnv module example data*

---

**Description**

The data is in matrix with column 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 | <i>Gene plot example data</i> |
|-------------|-------------------------------|

---

**Description**

The data is in matrix with column 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 column 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

---

|               |                          |
|---------------|--------------------------|
| hg19_ideogram | <i>Ideogram for hg19</i> |
|---------------|--------------------------|

---

**Description**

The ideogram for human hg19 reference including the color for each region

**Usage**

hg19\_ideogram

**Format**

A data frame with 4 columns:

**chr** chromosome  
**start** start position  
**end** end position  
**color** color

---

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

---

**Description**

The data is in matrix with column 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 column 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 column 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      *Lollipop plot example data*

---

### Description

The data is in matrix with column 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

---

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

---

**Description**

The data is in matrix with column 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 column 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

*Wig plot example data*

---

### **Description**

The data is in matrix with column 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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