

# Package ‘interacCircos’

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**Type** Package

**Title** The Visualization of Interactive Circos Plot

**Description** Implement in 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** 1.0.0

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**License** GPL-3

**Encoding** UTF-8

**LazyData** true

**Depends** R (>= 3.5.0)

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

**RoxygenNote** 7.1.0

**Suggests** knitr, rmarkdown

**VignetteBuilder** knitr

## R topics documented:

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arcExample	<i>Arc plot example data</i>
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## Description

The data is in matrix with 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

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bubbleExample	<i>Bubble plot example data</i>
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**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

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chord.pExample	<i>Example data of chord plot of circosJS</i>
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**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

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*Example data of chord plot of NG-Circos*


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### 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,
  genomeLabelDisplay = TRUE,
  genomeLabelTextSize = "10pt",
  genomeLabelTextColor = "#000",
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  compareEvent = FALSE,
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  CNVMouseClickedArcOpacity = 1,
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```

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BUBBLEMouseUpStrokeWidth = "none",  
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BUBBLEMouseOverOpacity = 1,  
BUBBLEMouseOverStrokeColor = "none",  
BUBBLEMouseOverStrokeWidth = "none",  
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BUBBLEMouseOverTooltipsPosition = "absolute",  
BUBBLEMouseOverTooltipsBackgroundColor = "white",  
BUBBLEMouseOverTooltipsBorderStyle = "solid",  
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SNPMouseCombinationGraphTitleSize = 5,
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SNPMouseCombinationGraphTitleColor = "black",
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SNPMouseClickCircleStrokeWidth = 0,
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WIGMouseLeaveFillColor = "none",
WIGMouseMoveDisplay = FALSE,
WIGMouseMoveLineOpacity = 1,
WIGMouseMoveLineStrokeColor = "none",
WIGMouseMoveLineStrokeWidth = "none",
WIGMouseMoveFillColor = "none",
```

```
WIGMouseOutDisplay = FALSE,
WIGMouseOutAnimationTime = 500,
WIGMouseOutLineOpacity = 1,
WIGMouseOutLineStrokeColor = "none",
WIGMouseOutLineStrokeWidth = "none",
WIGMouseOutFillColor = "none",
WIGMouseUpDisplay = FALSE,
WIGMouseUpLineOpacity = 1,
WIGMouseUpLineStrokeColor = "none",
WIGMouseUpLineStrokeWidth = "none",
WIGMouseUpFillColor = "none",
WIGMouseOverDisplay = FALSE,
WIGMouseOverLineOpacity = 1,
WIGMouseOverLineStrokeColor = "none",
WIGMouseOverLineStrokeWidth = "none",
WIGMouseOverFillColor = "none",
WIGMouseOverTooltipsSetting = "style1",
WIGMouseOverTooltipsHtml = " ",
WIGMouseOverTooltipsPosition = "absolute",
WIGMouseOverTooltipsBackgroundColor = "white",
WIGMouseOverTooltipsBorderStyle = "solid",
WIGMouseOverTooltipsBorderWidth = 0,
WIGMouseOverTooltipsPadding = "3px",
WIGMouseOverTooltipsBorderRadius = "3px",
WIGMouseOverTooltipsOpacity = 1,
SCATTERxlink = FALSE,
SCATTERMouseEvent = TRUE,
SCATTERMouseClickedDisplay = FALSE,
SCATTERMouseClickedColor = "red",
SCATTERMouseClickedCircleSize = 2,
SCATTERMouseClickedCircleOpacity = 1,
SCATTERMouseClickedCircleStrokeColor = "none",
SCATTERMouseClickedCircleStrokeWidth = "none",
SCATTERMouseClickedTextFromData = "fourth",
SCATTERMouseClickedTextOpacity = 1,
SCATTERMouseClickedTextColor = "red",
SCATTERMouseClickedTextSize = 8,
SCATTERMouseClickedTextPostionX = 1,
SCATTERMouseClickedTextPostionY = 10,
SCATTERMouseClickedTextDrag = TRUE,
SCATTERMouseDownDisplay = FALSE,
SCATTERMouseDownColor = "red",
SCATTERMouseDownCircleSize = 2,
SCATTERMouseDownCircleOpacity = 1,
SCATTERMouseDownCircleStrokeColor = "none",
SCATTERMouseDownCircleStrokeWidth = "none",
SCATTERMouseEnterDisplay = FALSE,
SCATTERMouseEnterColor = "red",
SCATTERMouseEnterCircleSize = 2,
SCATTERMouseEnterCircleOpacity = 1,
SCATTERMouseEnterCircleStrokeColor = "none",
SCATTERMouseEnterCircleStrokeWidth = "none",
```

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SCATTERMouseLeaveDisplay = FALSE,
SCATTERMouseLeaveColor = "red",
SCATTERMouseLeaveCircleSize = 2,
SCATTERMouseLeaveCircleOpacity = 1,
SCATTERMouseLeaveCircleStrokeColor = "none",
SCATTERMouseLeaveCircleStrokeWidth = "none",
SCATTERMouseMoveDisplay = FALSE,
SCATTERMouseMoveColor = "red",
SCATTERMouseMoveCircleSize = 2,
SCATTERMouseMoveCircleOpacity = 1,
SCATTERMouseMoveCircleStrokeColor = "none",
SCATTERMouseMoveCircleStrokeWidth = "none",
SCATTERMouseOutDisplay = FALSE,
SCATTERMouseOutAnimationTime = 500,
SCATTERMouseOutColor = "red",
SCATTERMouseOutCircleSize = 2,
SCATTERMouseOutCircleOpacity = 1,
SCATTERMouseOutCircleStrokeColor = "none",
SCATTERMouseOutCircleStrokeWidth = "none",
SCATTERMouseUpDisplay = FALSE,
SCATTERMouseUpColor = "red",
SCATTERMouseUpCircleSize = 2,
SCATTERMouseUpCircleOpacity = 1,
SCATTERMouseUpCircleStrokeColor = "none",
SCATTERMouseUpCircleStrokeWidth = "none",
SCATTERMouseOverDisplay = FALSE,
SCATTERMouseOverColor = "red",
SCATTERMouseOverCircleSize = 2,
SCATTERMouseOverCircleOpacity = 1,
SCATTERMouseOverCircleStrokeColor = "none",
SCATTERMouseOverCircleStrokeWidth = "none",
SCATTERMouseOverTooltipsSetting = "style1",
SCATTERMouseOverTooltipsHtml = " ",
SCATTERMouseOverTooltipsPosition = "absolute",
SCATTERMouseOverTooltipsBackgroundColor = "white",
SCATTERMouseOverTooltipsBorderStyle = "solid",
SCATTERMouseOverTooltipsBorderWidth = 0,
SCATTERMouseOverTooltipsPadding = "3px",
SCATTERMouseOverTooltipsBorderRadius = "3px",
SCATTERMouseOverTooltipsOpacity = 1,
ARCxlink = FALSE,
ARCMouseEvent = TRUE,
ARCMouseClickDisplay = FALSE,
ARCMouseClickColor = "red",
ARCMouseClickArcOpacity = 1,
ARCMouseClickArcStrokeColor = "none",
ARCMouseClickArcStrokeWidth = "none",
ARCMouseClickTextFromData = "fourth",
ARCMouseClickTextOpacity = 1,
ARCMouseClickTextColor = "red",
ARCMouseClickTextSize = 8,
ARCMouseClickTextPostionX = 1,

```



```
ARCMouseClickTextPostionY = 10,  
ARCMouseClickTextDrag = TRUE,  
ARCMouseDownDisplay = FALSE,  
ARCMouseDownColor = "red",  
ARCMouseDownArcOpacity = 1,  
ARCMouseDownArcStrokeColor = "none",  
ARCMouseDownArcStrokeWidth = "none",  
ARCMouseEnterDisplay = FALSE,  
ARCMouseEnterColor = "red",  
ARCMouseEnterArcOpacity = 1,  
ARCMouseEnterArcStrokeColor = "none",  
ARCMouseEnterArcStrokeWidth = "none",  
ARCMouseLeaveDisplay = FALSE,  
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,  
ARCMouseOutArcStrokeColor = "none",  
ARCMouseOutArcStrokeWidth = "none",  
ARCMouseUpDisplay = FALSE,  
ARCMouseUpColor = "red",  
ARCMouseUpArcOpacity = 1,  
ARCMouseUpArcStrokeColor = "none",  
ARCMouseUpArcStrokeWidth = "none",  
ARCMouseOverDisplay = FALSE,  
ARCMouseOverColor = "red",  
ARCMouseOverArcOpacity = 1,  
ARCMouseOverArcStrokeColor = "none",  
ARCMouseOverArcStrokeWidth = "none",  
ARCMouseOverTooltipsSetting = "style1",  
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,
GENEMouseLeaveArcStrokeColor = "none",
GENEMouseLeaveArcStrokeWidth = "none",
GENEMouseMoveDisplay = FALSE,
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",
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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",
LOLLIPOPMouseMoveDisplay = FALSE,
LOLLIPOPMouseMoveColor = "red",
LOLLIPOPMouseMoveCircleSize = 2,
LOLLIPOPMouseMoveCircleOpacity = 1,
LOLLIPOPMouseMoveCircleStrokeColor = "none",
LOLLIPOPMouseMoveCircleStrokeWidth = "none",
LOLLIPOPMouseOutDisplay = FALSE,
LOLLIPOPMouseOutAnimationTime = 500,
LOLLIPOPMouseOutColor = "red",
LOLLIPOPMouseOutCircleSize = 2,
LOLLIPOPMouseOutCircleOpacity = 1,
LOLLIPOPMouseOutCircleStrokeColor = "none",
LOLLIPOPMouseOutCircleStrokeWidth = "none",
LOLLIPOPMouseUpDisplay = FALSE,
LOLLIPOPMouseUpColor = "red",
LOLLIPOPMouseUpCircleSize = 2,
LOLLIPOPMouseUpCircleOpacity = 1,
```

```

LOLLIPOPMouseDownCircleStrokeColor = "none",
LOLLIPOPMouseDownCircleStrokeWidth = "none",
LOLLIPOPMouseDownCircleDisplay = FALSE,
LOLLIPOPMouseDownCircleColor = "red",
LOLLIPOPMouseDownCircleSize = 2,
LOLLIPOPMouseDownCircleOpacity = 1,
LOLLIPOPMouseDownCircleStrokeColor = "none",
LOLLIPOPMouseDownCircleStrokeWidth = "none",
LOLLIPOPMouseDownCircleStrokeSetting = "style1",
LOLLIPOPMouseDownCircleStrokeHtml = " ",
LOLLIPOPMouseDownCirclePosition = "absolute",
LOLLIPOPMouseDownCircleBackgroundColor = "white",
LOLLIPOPMouseDownCircleBorderStyle = "solid",
LOLLIPOPMouseDownCircleBorderWidth = 0,
LOLLIPOPMouseDownCirclePadding = "3px",
LOLLIPOPMouseDownCircleBorderRadius = "3px",
LOLLIPOPMouseDownCircleOpacity = 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, genomeBorderColor, genomeBorderSize</code>	Should the reference genome have borders?
<code>genomeTicksDisplay, genomeTicksLen, genomeTicksColor, genomeTicksTextSize, genomeTicksTextColor, g</code>	Whether display the ticks for chromosome panel. Other parameters 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?

TEXTModuleDragEvent  
     Are text annotations draggable?

CNVxlink      Default False, add/not xlink for CNV module

CNVMouseEvent   Default True, open/not open mouse event of CNV module

CNVMouseClickedDisplay  
     Default False, show/not the tooltip when mouse click on a CNV point.

CNVMouseClickedColor  
     Color when mouse clicking

CNVMouseClickedArcOpacity  
     Arc opacity when mouse clicking the element

CNVMouseClickedArcStrokeColor  
     Arc stroke color when mouse clicking the element

CNVMouseClickedArcStrokeWidth  
     Arc stroke width when mouse clicking the element

CNVMouseClickedTextFromData  
     Text column when mouse clicking the element

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, CNVMouseClickedTextPostionY  
     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  
     Default 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

BUBBLEMouseClickedOpacity  
Opacity when mouse clicking

BUBBLEMouseClickedStrokeColor  
Stroke color when mouse clicking

BUBBLEMouseClickedStrokeWidth  
Stroke width when mouse clicking

BUBBLEMouseDownDisplay  
Default False, show/not the tooltip when mouse click down a BUBBLE point.

BUBBLEMouseDownColor  
Color when mouse moving down the element

BUBBLEMouseDownOpacity  
Opacity when mouse moving down the element

BUBBLEMouseDownStrokeColor  
Stroke color when mouse moving down the element

BUBBLEMouseDownStrokeWidth	Stroke width when mouse moving down the element
BUBBLEMouseEnterDisplay	Default False, show/not the tooltip when mouse mover over a BUBBLE point.
BUBBLEMouseEnterColor	Color when mouse entering the element
BUBBLEMouseEnterOpacity	Opacity when mouse entering the element
BUBBLEMouseEnterStrokeColor	Stroke color when mouse entering the element
BUBBLEMouseEnterStrokeWidth	Stroke width when mouse entering the element
BUBBLEMouseLeaveDisplay	Default False, show/not the tooltip when mouse mover leave a BUBBLE point.
BUBBLEMouseLeaveColor	Color when mouse leaving the element
BUBBLEMouseLeaveOpacity	Opacity when mouse leaving the element
BUBBLEMouseLeaveStrokeColor	Stroke color when mouse leaving the element
BUBBLEMouseLeaveStrokeWidth	Stroke width when mouse leaving the element
BUBBLEMouseMoveDisplay	Default False, show/not the tooltip when mouse move into a BUBBLE point.
BUBBLEMouseMoveColor	Color when mouse moving in the element
BUBBLEMouseMoveOpacity	Opacity when mouse moving in the element
BUBBLEMouseMoveStrokeColor	Stroke color when mouse moving in the element
BUBBLEMouseMoveStrokeWidth	Stroke width when mouse moving in the element
BUBBLEMouseOutDisplay	Defalut False, hide/not tooltip when mouse is not hovering a BUBBLE point anymore.
BUBBLEMouseOutAnimationTime	Animation time when mouse moving out the element
BUBBLEMouseOutColor	Color when mouse moving out the element
BUBBLEMouseOutOpacity	Opacity when mouse moving out the element
BUBBLEMouseOutStrokeColor	Stroke color when mouse moving out the element
BUBBLEMouseOutStrokeWidth	Stroke width when mouse moving out the element
BUBBLEMouseUpDisplay	Default False, show/not the tooltip when mouse click up a BUBBLE point.

BUBBLEMouseUpColor	Color when mouse moving up the element
BUBBLEMouseUpOpacity	Opacity when mouse moving up the element
BUBBLEMouseUpStrokeColor	Stroke color when mouse moving up the element
BUBBLEMouseUpStrokeWidth	Stroke width when mouse moving up the element
BUBBLEMouseOverDisplay	Default False, show/not the tooltip when mouse hover on a BUBBLE point.
BUBBLEMouseOverColor	Color when mouse moving over the element
BUBBLEMouseOverOpacity	Opacity when mouse moving over the element
BUBBLEMouseOverStrokeColor	Stroke color when mouse moving over the element
BUBBLEMouseOverStrokeWidth	Stroke width when mouse moving over the element
BUBBLEMouseOverTooltipsSetting	Default "style1"
BUBBLEMouseOverTooltipsHtml	Default " "
BUBBLEMouseOverTooltipsPosition	Default "absolute"
BUBBLEMouseOverTooltipsBackgroundColor	Default "white"
BUBBLEMouseOverTooltipsBorderStyle	Default "solid"
BUBBLEMouseOverTooltipsBorderWidth	Default 0
BUBBLEMouseOverTooltipsPadding	Default "3px"
BUBBLEMouseOverTooltipsBorderRadius	Default "3px"
BUBBLEMouseOverTooltipsOpacity	Default 0.8
SNPxlink	Default False, add/not xlink for SNP module
SNPMouseEvent	Default True, open/not open mouse event of SNP module
SNPMouseCombinationEvent	Default False, open/not COMBINATION module for SNP module
SNPMouseCombinationImageDisplay	Default False, open/not image display in COMBINATION module for SNP module
SNPMouseCombinationImageTitle	Title of the image
SNPMouseCombinationImageTitleSize, SNPMouseCombinationImageTitleWeight, SNPMouseCombinationImageTitleColor	Size, weight and color of the title
SNPMouseCombinationImagePositionX, SNPMouseCombinationImagePositionY	Coordinates for image

SNPMouseCombinationImageHeight, SNPMouseCombinationImageWidth  
Height and width of image

SNPMouseCombinationGraphDisplay  
Default False, open/not graph display in COMBINATION module for SNP module

SNPMouseCombinationGraphTitle  
Title of the graph

SNPMouseCombinationGraphTitleSize, SNPMouseCombinationGraphTitleWeight, SNPMouseCombinationGraphTitleColor  
Size, weight and color of the title

SNPMouseCombinationGraphType  
Type of graph

SNPMouseCombinationGraphPositionX, SNPMouseCombinationGraphPositionY  
Coordinates for graph

SNPMouseCombinationGraphHeight, SNPMouseCombinationGraphWidth  
Height and width for graph

SNPMouseCombinationGraphHistogramBarColor  
Bar color of histogram graph

SNPMouseCombinationGraphHistogramPadding  
Padding between bar of histogram graph

SNPMouseCombinationGraphHistogramPositionCorrectX  
Correction distance of X axis in histogram

SNPMouseCombinationGraphPieAutoColor  
Whether use auto color for pie graph or not

SNPMouseCombinationGraphPieColor  
Color for pie graph if auto color is false

SNPMouseCombinationGraphPieSize  
Size of pie graph

SNPMouseCombinationGraphPieStroke  
Whether each pie has a stroke or not

SNPMouseCombinationGraphPieStrokeColor, SNPMouseCombinationGraphPieStrokeWidth  
The stroke color and width for pie graph

SNPMouseCombinationGraphPieOpacity  
Opacity for pie graph

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

SNPMouseCombinationGraphLinePoint  
Whether display the broken point in line graph

SNPMouseCombinationGraphLinePointSize  
Size of broken point

SNPMouseCombinationGraphLinePointAutoColor  
Whether display the broken point in auto color

SNPMouseCombinationGraphLinePointColor  
Color for broken point if auto color is false

SNPMouseCombinationGraphLinePointStroke  
Whether display the broken point stroke

SNPMouseCombinationGraphLinePointStrokeColor, SNPMouseCombinationGraphLinePointStrokeWidth  
The stroke color and width for broken point

SNPMouseCombinationGraphLinePointOpacity  
Opacity for broken line

SNPMouseCombinationGraphLinePositionCorrectX  
Correction distance of X axis for line

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

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

SNPMouseCombinationTextPositionCorrectX, SNPMouseCombinationTextPositionCorrectY  
The coordinates for text

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

SNPMouseClickColor  
Color after clicking the element

SNPMouseClickCircleSize  
Circle size after clicking the element

SNPMouseClickCircleOpacity  
Opacity after clicking the element

SNPMouseClickCircleStrokeColor  
Stroke color after clicking the element

SNPMouseClickCircleStrokeWidth  
Stroke width after clicking the element

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

SNPMouseClickTextOpacity  
Text opacity after clicking the element

SNPMouseClickTextColor  
Text color after clicking the element

SNPMouseClickTextSize  
Text size after clicking the element

SNPMouseClickTextPostionX, SNPMouseClickTextPostionY  
Text coordinate after clicking the element

SNPMouseClickTextDrag  
Whether text is draggable for element

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

SNPMouseDownColor  
Color after mouse moving down the element

SNPMouseDownCircleSize  
Circle size after mouse moving down the element

SNPMouseDownCircleOpacity  
Circle opacity after mouse moving down the element

SNPMouseDownCircleStrokeColor  
Circle stroke color after mouse moving down the element

SNPMouseDownCircleStrokeWidth  
Circle stroke width after mouse moving down the element

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

SNPMouseEnterColor  
Color after mouse entering enter the element

SNPMouseEnterCircleSize  
Circle size after mouse entering the element

SNPMouseEnterCircleOpacity  
Circle opacity after mouse entering the element

SNPMouseEnterCircleStrokeColor  
Circle stroke color after mouse entering the element

SNPMouseEnterCircleStrokeWidth  
Circle stroke width after mouse entering the element

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

SNPMouseLeaveColor  
Color after mouse leaving the element

SNPMouseLeaveCircleSize  
Circle size after mouse leaving the element

SNPMouseLeaveCircleOpacity  
Circle opacity after mouse leaving the element

SNPMouseLeaveCircleStrokeColor  
Circle stroke color after mouse leaving the element

SNPMouseLeaveCircleStrokeWidth  
Circle stroke width after mouse leaving the element

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

SNPMouseMoveColor  
Color after mouse moving in the element

SNPMouseMoveCircleSize  
Circle size after mouse moving in the element

SNPMouseMoveCircleOpacity  
Circle opacity after mouse moving in the element

SNPMouseMoveCircleStrokeColor  
Circle stroke color after mouse moving in the element

SNPMouseMoveCircleStrokeWidth  
Circle stroke width after mouse moving in the element

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

SNPMouseOutAnimationTime  
Animation time when mouse moving over the element

SNPMouseOutColor  
Color when mouse moving over the element

SNPMouseOutCircleSize  
Circle size when mouse moving over the element

SNPMouseOutCircleOpacity  
Opacity when mouse moving over the element

SNPMouseOutCircleStrokeColor  
Stroke color when mouse moving over the element

SNPMouseOutCircleStrokeWidth  
Stroke width when mouse moving over the element

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

SNPMouseUpColor	Color after mouse moving up the element
SNPMouseUpCircleSize	Circle size after mouse moving up the element
SNPMouseUpCircleOpacity	Circle opacity after mouse moving up the element
SNPMouseUpCircleStrokeColor	Circle stroke color after mouse moving up the element
SNPMouseUpCircleStrokeWidth	Circle stroke width after mouse moving up the element
SNPMouseOverDisplay	Default False, show/not the tooltip when mouse hover on a SNP point.
SNPMouseOverColor	Color after mouse moving over the element
SNPMouseOverCircleSize	Circle size after mouse moving over the element
SNPMouseOverCircleOpacity	Circle opacity after mouse moving over the element
SNPMouseOverCircleStrokeColor	Circle stroke color after mouse moving over the element
SNPMouseOverCircleStrokeWidth	Circle stroke width after mouse moving over the element
SNPMouseOverTooltipsSetting	Default "chr : "
SNPMouseOverTooltipsHtml	Default " "
SNPMouseOverTooltipsPosition	Position for tooltips when mouse moving over
SNPMouseOverTooltipsBackgroundColor	Background color for tooltips when mouse moving over
SNPMouseOverTooltipsBorderStyle	Border style for tooltips when mouse moving over
SNPMouseOverTooltipsBorderWidth	Border width for tooltips when mouse moving over
SNPMouseOverTooltipsPadding	Padding for tooltips when mouse moving over
SNPMouseOverTooltipsBorderRadius	Border radius for tooltips when mouse moving over
SNPMouseOverTooltipsOpacity	Opacity for tooltips when mouse moving over
LINKxlink	Default False, add/not xlink for LINK module
LINKMouseEvent	Default True, open/not open mouse event of LINK module
LINKMouseClickedDisplay	Default False, show/not the tooltip when mouse click on a LINK point.
LINKMouseClickedOpacity	Opacity when mouse clicking
LINKMouseClickedStrokeColor	Stroke color when mouse clicking

LINKMouseClickedStrokeWidth  
Stroke width when mouse clicking

LINKMouseDownDisplay  
Default False, show/not the tooltip when mouse click down a LINK point.

LINKMouseDownOpacity  
Opacity when mouse moving down the element

LINKMouseDownStrokeColor  
Stroke color when mouse moving down the element

LINKMouseDownStrokeWidth  
Stroke width when mouse moving down the element

LINKMouseEnterDisplay  
Default False, show/not the tooltip when mouse mover over a LINK point.

LINKMouseEnterOpacity  
Opacity when mouse entering the element

LINKMouseEnterStrokeColor  
Stroke color when mouse entering the element

LINKMouseEnterStrokeWidth  
Stroke width when mouse entering the element

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

LINKMouseLeaveOpacity  
Opacity when mouse leaving the element

LINKMouseLeaveStrokeColor  
Stroke color when mouse leaving the element

LINKMouseLeaveStrokeWidth  
Stroke width when mouse leaving the element

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

LINKMouseMoveOpacity  
Opacity when mouse moving in the element

LINKMouseMoveStrokeColor  
Stroke color when mouse moving in the element

LINKMouseMoveStrokeWidth  
Stroke width when mouse moving in the element

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

LINKMouseOutAnimationTime  
Animation time when mouse moving out the element

LINKMouseOutOpacity  
Opacity when mouse moving out the element

LINKMouseOutStrokeColor  
Stroke color when mouse moving out the element

LINKMouseOutStrokeWidth  
Stroke width when mouse moving out the element

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

LINKMouseUpOpacity  
Opacity when mouse moving up the element



LINKMouseUpStrokeColor	Stroke color when mouse moving up the element
LINKMouseUpStrokeWidth	Stroke width when mouse moving up the element
LINKMouseOverDisplay	Default False, show/not the tooltip when mouse hover on a LINK point.
LINKMouseOverOpacity	Opacity when mouse moving over the element
LINKMouseOverStrokeColor	Stroke color when mouse moving over the element
LINKMouseOverStrokeWidth	Stroke width when mouse moving over the element
LINKMouseOverTooltipsSetting	Default "style1"
LINKMouseOverTooltipsHtml	Default " "
LINKMouseOverTooltipsPosition	Default "absolute"
LINKMouseOverTooltipsBackgroundColor	Default "white"
LINKMouseOverTooltipsBorderStyle	Default "solid"
LINKMouseOverTooltipsBorderWidth	Default 0
LINKMouseOverTooltipsPadding	Default "3px"
LINKMouseOverTooltipsBorderRadius	Default "3px"
LINKMouseOverTooltipsOpacity	Default 0.8
LINKLabelDragEvent	Default False, draggable for the label of LINK module
CHORDMouseEvent	Default True, open/not open mouse event of CHORD module 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  
Default False, hide/not tooltip when mouse is not hovering a HISTOGRAM point anymore.

HISTOGRAMMouseOutAnimationTime  
Animation time when mouse moving out the element

HISTOGRAMMouseOutColor  
Color when mouse moving out the element

HISTOGRAMMouseOutOpacity  
Opacity when mouse moving out the element

HISTOGRAMMouseOutStrokeColor  
Stroke color when mouse moving out the element

HISTOGRAMMouseOutStrokeWidth  
Stroke width when mouse moving out the element

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

HISTOGRAMMouseUpColor  
Color when mouse moving up the element

HISTOGRAMMouseUpOpacity  
Opacity when mouse moving up the element

HISTOGRAMMouseUpStrokeColor  
Stroke color when mouse moving up the element

HISTOGRAMMouseUpStrokeWidth  
Stroke width when mouse moving up the element

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

HISTOGRAMMouseOverColor  
Color when mouse moving over the element

HISTOGRAMMouseOverOpacity  
Opacity when mouse moving over the element

HISTOGRAMMouseOverStrokeColor  
Stroke color when mouse moving over the element

HISTOGRAMMouseOverStrokeWidth  
     Stroke width when mouse moving over the element  
 HISTOGRAMMouseOverTooltipsSetting  
     Default "style1"  
 HISTOGRAMMouseOverTooltipsHtml  
     Default " "  
 HISTOGRAMMouseOverTooltipsPosition  
     Default "absolute"  
 HISTOGRAMMouseOverTooltipsBackgroundColor  
     Default "white"  
 HISTOGRAMMouseOverTooltipsBorderStyle  
     Default "solid"  
 HISTOGRAMMouseOverTooltipsBorderWidth  
     Default 0  
 HISTOGRAMMouseOverTooltipsPadding  
     Default "3px"  
 HISTOGRAMMouseOverTooltipsBorderRadius  
     Default "3px"  
 HISTOGRAMMouseOverTooltipsOpacity  
     Default 0.8  
 LINEMouseEvent Default True, open/not open mouse event of LINE module  
 LINEMouseClickedDisplay  
     Default False, show/not the tooltip when mouse click on a LINE point.  
 LINEMouseClickedLineOpacity  
     Line opacity when mouse clicking the element  
 LINEMouseClickedLineStrokeColor  
     Stroke color when mouse clicking the element  
 LINEMouseClickedLineStrokeWidth  
     Stroke width when mouse clicking the element  
 LINEMouseDownDisplay  
     Default False, show/not the tooltip when mouse click down a LINE point.  
 LINEMouseDownLineOpacity  
     Line opacity when mouse moving down the element  
 LINEMouseDownLineStrokeColor  
     Stroke color when mouse moving down the element  
 LINEMouseDownLineStrokeWidth  
     Stroke width when mouse moving down the element  
 LINEMouseEnterDisplay  
     Default False, show/not the tooltip when mouse mover over a LINE point.  
 LINEMouseEnterLineOpacity  
     Line opacity when mouse entering the element  
 LINEMouseEnterLineStrokeColor  
     Stroke color when mouse entering the element  
 LINEMouseEnterLineStrokeWidth  
     Stroke width when mouse entering the element  
 LINEMouseLeaveDisplay  
     Default False, show/not the tooltip when mouse mover leave a LINE point.  
 LINEMouseLeaveLineOpacity  
     Line opacity when mouse leaving the element

LINEMouseLeaveLineStrokeColor  
     Stroke color when mouse leaving the element  
 LINEMouseLeaveLineStrokeWidth  
     Stroke width when mouse leaving the element  
 LINEMouseMoveDisplay  
     Default False, show/not the tooltip when mouse move into a LINE point.  
 LINEMouseMoveLineOpacity  
     Line opacity when mouse moving in the element  
 LINEMouseMoveLineStrokeColor  
     Stroke color when mouse moving in the element  
 LINEMouseMoveLineStrokeWidth  
     Stroke width when mouse moving in the element  
 LINEMouseOutDisplay  
     Default False, hide/not tooltip when mouse is not hovering a LINE point any-  
     more.  
 LINEMouseOutAnimationTime  
     Animation time when mouse moving out the element  
 LINEMouseOutLineOpacity  
     Line opacity when mouse moving out the element  
 LINEMouseOutLineStrokeColor  
     Stroke color when mouse moving out the element  
 LINEMouseOutLineStrokeWidth  
     Stroke width when mouse moving out the element  
 LINEMouseUpDisplay  
     Default False, show/not the tooltip when mouse click up a LINE point.  
 LINEMouseUpLineOpacity  
     Line opacity when mouse moving up the element  
 LINEMouseUpLineStrokeColor  
     Stroke color when mouse moving up the element  
 LINEMouseUpLineStrokeWidth  
     Stroke width when mouse moving up the element  
 LINEMouseOverDisplay  
     Default False, show/not the tooltip when mouse hover on a LINE point.  
 LINEMouseOverLineOpacity  
     Line opacity when mouse moving over the element  
 LINEMouseOverLineStrokeColor  
     Stroke color when mouse moving over the element  
 LINEMouseOverLineStrokeWidth  
     Stroke width when mouse moving over the element  
 LINEMouseOverTooltipsSetting  
     Default "style1"  
 LINEMouseOverTooltipsHtml  
     Default " "  
 LINEMouseOverTooltipsPosition  
     Default "absolute"  
 LINEMouseOverTooltipsBackgroundColor  
     Default "white"  
 LINEMouseOverTooltipsBorderStyle  
     Default "solid"

LINEMouseOverTooltipsBorderWidth  
Default 0

LINEMouseOverTooltipsPadding  
Default "3px"

LINEMouseOverTooltipsBorderRadius  
Default "3px"

LINEMouseOverTooltipsOpacity  
Default 0.8

WIGMouseEvent Default True, open/not open mouse event of WIG module

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  
     Default False, hide/not tooltip when mouse is not hovering a WIG point any-  
     more.  
 WIGMouseOutAnimationTime  
     Animation time when mouse moving out the element  
 WIGMouseOutLineOpacity  
     Line opacity when mouse moving out the element  
 WIGMouseOutLineStrokeColor  
     Stroke color when mouse moving out the element  
 WIGMouseOutLineStrokeWidth  
     Stroke width when mouse moving out the element  
 WIGMouseOutFillColor  
     Filling color when mouse moving out the element  
 WIGMouseUpDisplay  
     Default False, show/not the tooltip when mouse click up a WIG point.  
 WIGMouseUpLineOpacity  
     Line opacity when mouse moving up the element  
 WIGMouseUpLineStrokeColor  
     Stroke color when mouse moving up the element  
 WIGMouseUpLineStrokeWidth  
     Stroke width when mouse moving up the element  
 WIGMouseUpFillColor  
     Filling color when mouse moving up the element  
 WIGMouseOverDisplay  
     Default False, show/not the tooltip when mouse hover on a WIG point.  
 WIGMouseOverLineOpacity  
     Line opacity when mouse moving over the element  
 WIGMouseOverLineStrokeColor  
     Stroke color when mouse moving over the element  
 WIGMouseOverLineStrokeWidth  
     Stroke width when mouse moving over the element  
 WIGMouseOverFillColor  
     Filling color when mouse moving over the element  
 WIGMouseOverTooltipsSetting  
     Default "style1"  
 WIGMouseOverTooltipsHtml  
     Default " "



WIGMouseOverTooltipsPosition  
     Default "absolute"  
 WIGMouseOverTooltipsBackgroundColor  
     Default "white"  
 WIGMouseOverTooltipsBorderStyle  
     Default "solid"  
 WIGMouseOverTooltipsBorderWidth  
     Default 0  
 WIGMouseOverTooltipsPadding  
     Default "3px"  
 WIGMouseOverTooltipsBorderRadius  
     Default "3px"  
 WIGMouseOverTooltipsOpacity  
     Default 0.8  
 SCATTERxlink     Default False, add/not xlink for SCATTER module  
 SCATTERMouseEvent  
     Default True, open/not open mouse event of SCATTER module  
 SCATTERMouseClickedDisplay  
     Default False, show/not the tooltip when mouse click on a SCATTER point.  
 SCATTERMouseClickedColor  
     Color when mouse clicking the element  
 SCATTERMouseClickedCircleSize  
     Circle size when mouse clicking the element  
 SCATTERMouseClickedCircleOpacity  
     Circle opacity when mouse clicking the element  
 SCATTERMouseClickedCircleStrokeColor  
     Circle stroke color when mouse clicking the element  
 SCATTERMouseClickedCircleStrokeWidth  
     Circle stroke width when mouse clicking the element  
 SCATTERMouseClickedTextFromData  
     Text column when mouse clicking the element  
 SCATTERMouseClickedTextOpacity  
     Text opacity when mouse clicking the element  
 SCATTERMouseClickedTextColor  
     Text color when mouse clicking the element  
 SCATTERMouseClickedTextSize  
     Text size when mouse clicking the element  
 SCATTERMouseClickedTextPostionX, SCATTERMouseClickedTextPostionY  
     Text coordinates when mouse clicking the element  
 SCATTERMouseClickedTextDrag  
     Whether text is draggable when clicing element  
 SCATTERMouseDownDisplay  
     Default False, show/not the tooltip when mouse click down a SCATTER point.  
 SCATTERMouseDownColor  
     Color when mouse moving down the element  
 SCATTERMouseDownCircleSize  
     Circle size when mouse moving down the element  
 SCATTERMouseDownCircleOpacity  
     Circle opacity when mouse moving down the element

SCATTERMouseDownCircleStrokeColor  
Circle stroke color when mouse moving down the element

SCATTERMouseDownCircleStrokeWidth  
Circle stroke width when mouse moving down the element

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

SCATTERMouseEnterColor  
Color when mouse entering the element

SCATTERMouseEnterCircleSize  
Circle size when mouse entering the element

SCATTERMouseEnterCircleOpacity  
Circle opacity when mouse entering the element

SCATTERMouseEnterCircleStrokeColor  
Circle stroke color when mouse entering the element

SCATTERMouseEnterCircleStrokeWidth  
Circle stroke width when mouse entering the element

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

SCATTERMouseLeaveColor  
Color when mouse leaving the element

SCATTERMouseLeaveCircleSize  
Circle size when mouse leaving the element

SCATTERMouseLeaveCircleOpacity  
Circle opacity when mouse leaving the element

SCATTERMouseLeaveCircleStrokeColor  
Circle stroke color when mouse leaving the element

SCATTERMouseLeaveCircleStrokeWidth  
Circle stroke width when mouse leaving the element

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

SCATTERMouseMoveColor  
Color when mouse moving in the element

SCATTERMouseMoveCircleSize  
Circle size when mouse moving in the element

SCATTERMouseMoveCircleOpacity  
Circle opacity when mouse moving in the element

SCATTERMouseMoveCircleStrokeColor  
Circle stroke color when mouse moving in the element

SCATTERMouseMoveCircleStrokeWidth  
Circle stroke width when mouse moving in the element

SCATTERMouseOutDisplay  
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

ARCMouseClickDisplay  
 Default False, show/not the tooltip when mouse click on a ARC point.

ARCMouseClickColor  
 Color when mouse clicking the element

ARCMouseClickArcOpacity  
 Arc opacity when mouse clicking the element

ARCMouseClickArcStrokeColor  
 Arc stroke color when mouse clicking the element

ARCMouseClickArcStrokeWidth  
 Arc stroke width when mouse clicking the element

ARCMouseClickTextFromData  
 Text column when mouse clicking the element

ARCMouseClickTextOpacity  
 Text opacity when mouse clicking the element

ARCMouseClickTextColor  
 Text color when mouse clicking the element

ARCMouseClickTextSize  
 Text size when mouse clicking the element

ARCMouseClickTextPostionX, ARCMouseClickTextPostionY  
 Text coordinates when mouse clicking the element

ARCMouseClickTextDrag  
 Whether text is draggable when mouse clicking the element

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

ARCMouseDownColor  
 Color when mouse moving down the element

ARCMouseDownArcOpacity  
 Arc opacity when mouse moving down the element

ARCMouseDownArcStrokeColor  
 Arc stroke color when mouse moving down the element

ARCMouseDownArcStrokeWidth  
 Arc stroke width when mouse moving down the element

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

ARCMouseEnterColor  
 Color when mouse entering the element

ARCMouseEnterArcOpacity  
 Arc opacity when mouse entering the element

ARCMouseEnterArcStrokeColor  
 Arc stroke color when mouse entering the element

ARCMouseEnterArcStrokeWidth  
 Arc stroke width when mouse entering the element

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

ARCMouseLeaveColor	Color when mouse leaving the element
ARCMouseLeaveArcOpacity	Arc opacity when mouse leaving the element
ARCMouseLeaveArcStrokeColor	Arc stroke color when mouse leaving the element
ARCMouseLeaveArcStrokeWidth	Arc stroke width when mouse leaving the element
ARCMouseMoveDisplay	Default False, show/not the tooltip when mouse move into a ARC point.
ARCMouseMoveColor	Color when mouse moving in the element
ARCMouseMoveArcOpacity	Arc opacity when mouse moving in the element
ARCMouseMoveArcStrokeColor	Arc stroke color when mouse moving in the element
ARCMouseMoveArcStrokeWidth	Arc stroke width when mouse moving in the element
ARCMouseOutDisplay	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  
 GENEMouseClickedDisplay  
     Default False, show/not the tooltip when mouse click on a GENE point.  
 GENEMouseClickedColor  
     Color when mouse clicking the element  
 GENEMouseClickedArcOpacity  
     Arc opacity when mouse clicking the element  
 GENEMouseClickedArcStrokeColor  
     Arc stroke color when mouse clicking the element  
 GENEMouseClickedArcStrokeWidth  
     Arc stroke width when mouse clicking the element  
 GENEMouseClickedTextFromData  
     Text column when mouse clicking the element  
 GENEMouseClickedTextOpacity  
     Text opacity when mouse clicking the element  
 GENEMouseClickedTextColor  
     Text color when mouse clicking the element  
 GENEMouseClickedTextSize  
     Text size when mouse clicking the element  
 GENEMouseClickedTextPostionX, GENEMouseClickedTextPostionY  
     Text coordinates when mouse clicking the element  
 GENEMouseClickedTextDrag  
     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  
Default 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")
```

---

Circos-shiny

*Shiny bindings for interacCircos*


---

**Description**

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

**Usage**

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

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

**Arguments**

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

**Value**

The output and render functions for shiny

---

CircosArc	<i>Create a ARC module to a moduleList</i>
-----------	--

---

**Description**

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

**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

---

*Create a AUXILIAYLINE module to a moduleList*


---

**Description**

A auxiliary line displayed in 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

---

Create a *BACKGROUND* module to be added to a *moduleList*


---

**Description**

Simple background to display behind another module

**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 color of the background element, in hexadecimal RGB format.
borderColors	The color of the background borders, in hexadecimal RGB format.
axisShow	Whether show a axis or not
axisWidth, axisColor, axisOpacity, axisNum	The color, opacity value and number of line for axis
minRadius, maxRadius	Where the module should begin and end
borderSize	The thickness of the background borders.
animationDisplay	Whether display a animation or not
animationTime, animationDelay, animationType	The time, delay and display type for animation
...	Ignored

Value

The module tracks for background modules.

Examples

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

---

CircosBubble	Create a <i>BUBBLE</i> module to a <i>moduleList</i>
--------------	--

---

Description

A bubble plot displayed in the visualization

**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>	Where the module should begin and end.
<code>blockStroke</code>	Whether display the stroke between each bubble block
<code>blockStrokeColor</code>	Stroke color for block
<code>blockStrokeWidth</code>	Stroke width for block
<code>blockFill</code>	Whether fill a block or not
<code>blockFillColor</code>	The color for filling the block
<code>bubbleMaxSize</code>	The max size for bubble
<code>bubbleMinSize</code>	The min size for bubble
<code>minColor</code>	The color the bubble with min value
<code>maxColor</code>	The color the bubble with max value
<code>ValueAxisManualScale</code>	Whether manually control the scale of value
<code>ValueAxisMaxScale, ValueAxisMinScale</code>	The max and min scale value for manually control
<code>totalLayer</code>	The color and width for stroke



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)
```

---

CircosChord

---

Create a *CHORD* module of *NG-Circos* to a *moduleList*


---

### Description

Display 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
Circos(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

*Create a CHORD module of circosJS to a moduleList***Description**

Display 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

*Create a CNV module to a moduleList***Description**

A copy number variance module displayed in the visualization

**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**

<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>width</code>	Width for CNV module
<code>color</code>	Color for CNV module
<code>ValueAxisManualScale</code>	Whether manually control the scale of value
<code>ValueAxisMaxScale, ValueAxisMinScale</code>	The max and min scale value for manually control
<code>strokeColor, strokeWidth</code>	The color and width for stroke
<code>opacity</code>	The opacity for module
<code>animationDisplay</code>	Whether display animation
<code>animationTime, animationDelay, animationType</code>	The time, delay and display type for animation
<code>data</code>	A list of CNV with details including start, end, value, link, color and html. Details can be found on document.
<code>...</code>	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

---

*Create a GENE module to a moduleList*


---

## Description

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

## 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

---

*Create a HEATMAP module to a moduleList*


---

### Description

A heatmap plot displayed in the visualization

### 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

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

## 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

*Create a HISTOGRAM module to a moduleList***Description**

Display a multi-layer histogram in circos

**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

---

Create a *LEGEND* module to a *moduleList*


---

## 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

<code>modulename</code>	The name of the new module.
<code>x, y</code>	Coordinates of the lower left corner of the annotation
<code>title</code>	The title for legend
<code>size</code>	Font size for title, with units specified (such as em or px).
<code>weight</code>	Font weight for title. Can be "normal", "bold", "bolder" or "lighter".
<code>GapBetweenGraphicText</code>	Gap between icon and text in legend.
<code>GapBetweenLines</code>	Gap between each two lines in legend
<code>data</code>	A list of legend with details including type, color, opacity, circleSize, rectSize, lineWidth, lineHeight, text, textSize and textWeight. Details can be found on document.
<code>...</code>	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",fontWeight="normal")
legend2 <- list(type= "circle", color="#AEC7E8",opacity="1.0",circleSize="8",text= "C.NPK",
  textSize= "14",fontWeight="normal")
Circos(CircosLegend('legend01', title = "legend",data=list(legend1,legend2),size = 20))
```

---

CircosLine

---

Create a LINE module to a moduleList

---

## Description

Display a multi-layer line plot in circos

## 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

---

Create a *LINK* module to a *moduleList*


---

### Description

Link 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 this 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

*Create a LOLLIPOP module to a moduleList***Description**

Display a lollipop plot in the visualization

**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**

<code>modulename</code>	The name of the new module.
<code>compareGroup</code>	The group number of this module in compare module
<code>fillColor</code>	Filling color for lollipop
<code>secondColor</code>	Second filling color for heterogeneous lollipop
<code>pointType</code>	The type for lollipop, could be circle, rect and diamond
<code>circleSize</code>	If circle, the size for lollipop
<code>diamondWidth, diamondHeight</code>	If diamond, the width and height for lollipop

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

---

**Description**

Display a point plot in circos

**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**

<code>modulename</code>	The name of the new module.
<code>compareGroup</code>	The group number of this module in compare module
<code>radius</code>	Radius of scatter circle
<code>innerCircleSize, outerCircleSize</code>	If circle, inner and outer circle size
<code>innerCircleColor, outerCircleColor</code>	If circle, inner and outer circle color
<code>innerPointType, outerPointType</code>	The type for inner and outer point, could be circle or rect
<code>innerrectWidth, innerrectHeight</code>	If rect, inner width and height
<code>outerrectWidth, outerrectHeight</code>	If rect, inner width and height
<code>outerCircleOpacity</code>	If circle, the opacity for outer circle
<code>random_data</code>	Scatter position fluctuation
<code>animationDisplay</code>	Whether display animation
<code>animationInitialPositionX, animationInitialPositionY</code>	The initial coordinates for animation
<code>animationTime, animationDelay, animationType</code>	The time, delay and display type for animation
<code>data</code>	A list of value with details including chr, start, end, name, des, link and html. Details can be found on document.
<code>...</code>	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

---

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


---

**Description**

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



**Usage**

```

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**

modulename	The name of the new module.
compareGroup	The group number of this module in compare module
maxRadius, minRadius	Where the module should begin and end
fillColorType	The type of filling color, could be either specific or r2(means based on r2)
fillColor	If specific, the color for SNP filling
fillr2Color	If r2, the color for SNP filling
ValueAxisManualScale	Whether manually control the scale of value
ValueAxisMaxScale, ValueAxisMinScale	The max and min scale value for manually control
pointType	The type of SNP point, could be circle or rect
circleSize	If circle, the size for SNP circle
rectWidth	If rect, the width for SNP rect
rectHeight	If rect, the height for SNP rect
animationDisplay	Whether display animation
animationInitialPositionX, animationInitialPositionY	The initial position coordinates for animation
animationTime, animationDelay, animationType	The time, delay and display type for animation

data	A list of SNP value with details including chr, pos, value, des, color, r2value, link, index, image and html. Details can be found on document.
...	Ignored

### Value

The module tracks for snp modules.

### Examples

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

---

CircosText

---

*Create Text module to be added to a moduleList*


---

### Description

Simple text annotation displayed in the visualization

### 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 text to be displayed.
x, y	Coordinates of the lower left corner of the annotation
size	Font size, with units specified (such as em or px).
weight	Font weight. Can be "normal", "bold", "bolder" or "lighter".
opacity	Font opacity.
color	Font color, in hexadecimal RGB format.
rotateRate	rotate rate for text
animationDisplay	Whether display a 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

---

Create a WIG module to a moduleList

---

**Description**

Display a multi-layer line plot in circos

**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**

<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>direction</code>	The direction of plot, either inside or outside
<code>ValueAxisManualScale</code>	Whether manually control the scale of value
<code>ValueAxisMaxScale, ValueAxisMinScale</code>	The max and min scale value for manually control
<code>color</code>	Color for plot
<code>opacity</code>	Opacity for plot
<code>strokeColor</code>	The color for stroke
<code>strokeWidth</code>	The width for stroke
<code>strokeType</code>	Line type for stroke, could be linear, cardinal, basis and monotone
<code>animationDisplay</code>	Whether display animation
<code>animationTime, animationDelay, animationType</code>	The time, delay and display type for animation
<code>data</code>	A list of value with details including chr, pos, des, value and html. Details can be found on document.
<code>...</code>	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

*Gene plot example data*

---

## 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

*Heatmap plot example data*

---

**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

---

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

---

**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

*Scatter plot example data*

---

**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`*Snp plot example data*

---

**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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