visHexPattern

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visHexPattern	*Function to visualise codebook matrix or input patterns within a supra-hexagonal grid*

Description

visHexPattern is supposed to codebook matrix or input patterns within a supra-hexagonal grid.

Usage

```
visHexPattern(sObj, plotType = c("lines", "bars", "radars"), pattern =
NULL,
height = 7, margin = rep(0.1, 4), colormap = c("customized", "bwr",
"jet", "gbr", "wyr", "br", "yr", "rainbow", "wb"), customized.color =
"red",
alterntive.color = c("transparent", "gray"), zeropattern.color =
"gray",
legend = TRUE, legend.cex = 0.8, legend.label = NULL, newpage = TRUE)
```

Arguments

sObj	an object of class "sMap" or "sTopol" or "sInit"
plotType	the plot type, can be "lines" for line/point graph, "bars" for bar graph, "radars" for radar graph
pattern	By default, it sets to "NULL" for the codebook matrix. It is intended for the user-input patterns, i.e., a matrix with the dimension of nHex x nPattern, where nHex is the number of hexagons and nPattern is the number of elements for each pattern
height	a numeric value specifying the height of device
margin	margins as units of length 4 or 1
colormap	short name for the predifined colormap, and "customized" for custom input (see the next 'customized.color'). The predifined colormap can be one of "jet" (jet colormap), "bwr" (blue-white-red colormap), "gbr" (green-black-red colormap), "wyr" (white-yellow-red colormap), "br" (black-red colormap), "yr" (yellow-red colormap), "wb" (white-black colormap), and "rainbow" (rainbow colormap, that is, red-yellow-green-cyan-blue-magenta). Alternatively, any hyphen-separated HTML color names, e.g. "blue-black-yellow", "royalblue-white-sandybrown", "darkgreen-white-darkviolet". A list of standard color names can be found in http://html-color-codes.info/color-names

`customized.color`
: the customized color for pattern visualisation

`alterntive.color`
: the alterntive color used to indicate the hexagon layout

`zeropattern.color`
: the color for zero horizental line

`legend`
: logical to indicate whether to add the legend

`legend.cex`
: a numerical value giving the amount by which legend text should be magnified relative to the default (i.e., 1)

`legend.label`
: a vector specifying the legend label. By default, it is NULL for using column names of the codebook matrix (or the matrix given by the parameter 'pattern')

`newpage`
: logical to indicate whether to open a new page. By default, it sets to true for opening a new page

Value

invisible

Note

The "plotType" includes:

- "lines": line plot. If multple colors are given, the points are also plotted. When the pattern involves both positive and negative values, zero horizental line is also shown
- "bars": bar plot. When the pattern involves both positive and negative values, the zero horizental line is in the middle of the hexagon; otherwise at the top of the hexagon for all negative values, and at the bottom for all positive values
- "radars": radar plot. Each radar diagram represents one pattern, wherein each element value is proportional to the distance from the center. Note, it starts on the right and wind counterclockwise around the circle

See Also

`sPipeline`, `visColormap`

Examples

```
# 1) generate data with an iid matrix of 1000 x 9
data <- cbind(matrix(rnorm(1000*3,mean=0,sd=1), nrow=1000, ncol=3),
matrix(rnorm(1000*3,mean=0.5,sd=1), nrow=1000, ncol=3),
matrix(rnorm(1000*3,mean=-0.5,sd=1), nrow=1000, ncol=3))
colnames(data) <- c("S1","S1","S1","S2","S2","S2","S3","S3","S3")

# 2) sMap resulted from using by default setup
sMap <- sPipeline(data=data)

# 3) plot codebook patterns using different types
# 3a) line plot
visHexPattern(sMap, plotType="lines")
# 3b) bar plot
visHexPattern(sMap, plotType="bars")
# 3c) radar plot
visHexPattern(sMap, plotType="radars")
```

```
# 4) plot user-input patterns using different types
# 4a) generate pattern data with two different groups "S" and "T"
nHex <- sMap$nHex
pattern <- cbind(matrix(runif(nHex*3,min=0,max=1), nrow=nHex, ncol=3),
matrix(runif(nHex*3,min=1,max=2), nrow=nHex, ncol=3))
colnames(pattern) <- c("S1","S2","S3","T1","T2","T3")
# 4b) for line plot
visHexPattern(sMap, plotType="lines", pattern=pattern,
customized.color="red", zeropattern.color="gray")
# 4c) for bar plot
visHexPattern(sMap, plotType="bars", pattern=pattern,
customized.color=rep(c("red","green"),each=3))
visHexPattern(sMap, plotType="bars", pattern=pattern,
customized.color=rep(c("red","green"),each=3), legend.label=c("S","T"))
# 4d) for radar plot
visHexPattern(sMap, plotType="radars", pattern=pattern,
customized.color=rep(c("red","green"),each=3))
visHexPattern(sMap, plotType="radars", pattern=pattern,
customized.color=rep(c("red","green"),each=3), legend.label=c("S","T"))
```