Package ‘tmap.networks’

July 22, 2025

License GPL-3

Title Extension to 'tmap' for Creating Network Visualizations

Type Package

Description Provides functions for visualizing networks with 'tmap'. It supports 'sfnetworks' objects natively but is not limited to them. Useful for adding network layers such as edges and nodes to 'tmap' maps. More features may be added in future versions.

Version 0.1

Encoding UTF-8

Depends R (>= 4.0),

Imports tmap (>= 4.1), sf, sfnetworks, data.table, igraph

Suggests knitr

Config/Needs/website bookdown, rmarkdown, r-tmap/tmap

URL https://github.com/r-tmap/tmap.networks, https://r-tmap.github.io/tmap.networks/

BugReports https://github.com/r-tmap/tmap.networks/issues

RoxygenNote 7.3.2

NeedsCompilation no

Author Martijn Tennekes [aut, cre], Andrea Gilardi [aut] (ORCID: <https://orcid.org/0000-0002-9424-7439>), Robin Lovelace [ctb]

Maintainer Martijn Tennekes <mtennekes@gmail.com>

Repository CRAN

Date/Publication 2025-05-30 09:30:01 UTC

Contents

`tmap.networks-package` *Extension for tmap: networks*

Description

Networks from sfnetworks are supported and several network specifc layer functions are added

Author(s)

Martijn Tennekes <mtennekes@gmail.com>

See Also

Useful links:

- https://github.com/r-tmap/tmap.networks
- https://r-tmap.github.io/tmap.networks/
- Report bugs at https://github.com/r-tmap/tmap.networks/issues

---

`tm_edges` *Map layer: edges of a (sf)network*

Description

Map layer that draws the edges of a (sf)network.

Usage

```
tm_edges(
  col = tmap::tm_const(),
  col.scale = tmap::tm_scale(),
  col.legend = tmap::tm_legend(),
  col.free = NA,
  lwd = tmap::tm_const(),
  lwd.scale = tmap::tm_scale(),
  lwd.legend = tmap::tm_legend(),
  lwd.free = NA,
  lty = tmap::tm_const(),
  lty.scale = tmap::tm_scale(),
  lty.legend = tmap::tm_legend(),
  lty.free = NA,
  col_alpha = tmap::tm_const(),
  col_alpha.scale = tmap::tm_scale(),
  col_alpha.legend = tmap::tm_legend(),
```

```
  col_alpha.free = NA,
  linejoin = "round",
  lineend = "round",
  plot.order = tmap::tm_plot_order("lwd", reverse = TRUE, na.order = "bottom"),
  zindex = NA,
  group = NA,
  group.control = "check",
  popup.vars = NA,
  popup.format = list(),
  hover = NA,
  id = "",
  options = opt_tm_edges()
)

opt_tm_edges(lines.only = "ifany")
```

Arguments

`col`, `col.scale`, `col.legend`, `col.free`
: Visual variable that determines the col color. See details.

`lwd`, `lwd.scale`, `lwd.legend`, `lwd.free`
: Visual variable that determines the line width. See details.

`lty`, `lty.scale`, `lty.legend`, `lty.free`
: Visual variable that determines the line type. See details.

`col_alpha`, `col_alpha.scale`, `col_alpha.legend`, `col_alpha.free`
: Visual variable that determines the border color alpha transparency. See details.

`linejoin`, `lineend`
: line join and line end. See gpar for details.

`plot.order`
: Specification in which order the spatial features are drawn. See ‘tmap::tm_plot_order‘ for details.

`zindex`
: Map layers are drawn on top of each other. The `zindex` numbers (one for each map layer) determines the stacking order. By default the map layers are drawn in the order they are called.

`group`
: Name of the group to which this layer belongs. This is only relevant in view mode, where layer groups can be switched (see ‘group.control‘)

`group.control`
: In view mode, the group control determines how layer groups can be switched on and off. Options: ‘"radio"‘ for radio buttons (meaning only one group can be shown), ‘"check"‘ for check boxes (so multiple groups can be shown), and ‘"none"‘ for no control (the group cannot be (de)selected).

`popup.vars`
: names of data variables that are shown in the popups in ‘"view"‘ mode. Set popup.vars to ‘TRUE‘ to show all variables in the shape object. Set popup.vars to ‘FALSE‘ to disable popups. Set ‘popup.vars‘ to a character vector of variable names to those those variables in the popups. The default (‘NA‘) depends on whether visual variables (e.g.‘fill‘) are used. If so, only those are shown. If not all variables in the shape object are shown.

`popup.format`
: list of formatting options for the popup values. See the argument ‘legend.format‘ for options. Only applicable for numeric data variables. If one list of formatting

	options is provided, it is applied to all numeric variables of ‘popup.vars‘. Also, a (named) list of lists can be provided. In that case, each list of formatting options is applied to the named variable.
hover	name of the data variable that specifies the hover labels (view mode only). Set to ‘FALSE‘ to disable hover labels. By default ‘FALSE‘, unless ‘id‘ is specified. In that case, it is set to ‘id‘,
id	name of the data variable that specifies the indices of the spatial features. Only used for ‘"view"‘ mode.
options	options passed on to the corresponding ‘opt_<layer_function>‘ function
lines.only	should only line geometries of the shape object (defined in [tmap::tm_shape()]) be plotted, or also other geometry types (like polygons)? By default ‘"ifany"‘, which means ‘TRUE‘ in case a geometry collection is specified.

Value

a [tmap::tmap-element], supposed to be stacked after [tmap::tm_shape()] using the ‘+‘ operator. The ‘opt_<layer_function>‘ function returns a list that should be passed on to the ‘options‘ argument.

Examples

```
library(tmap)
library(sfnetworks)

sfn = as_sfnetwork(roxel)

tm_shape(sfn) +
tm_network()

tm_shape(sfn) +
tm_edges(col = "type", lwd = 4) +
tm_nodes()
```

---

tm_network *Map layer: (sf)network*

Description

Map layer that draws a network. For more (total) flexibility, please use tm_edges and tm_nodes.

Usage

```
tm_network()
```

Value

a [tmap::tmap-element], supposed to be stacked after [tmap::tm_shape()] using the ‘+‘ operator. The ‘opt_<layer_function>‘ function returns a list that should be passed on to the ‘options‘ argument.

Examples

```
library(tmap)
library(sfnetworks)

sfn = as_sfnetwork(roxel)

tm_shape(sfn) +
tm_network()

tm_shape(sfn) +
tm_edges(col = "type", lwd = 4) +
tm_nodes()
```

---

tm_nodes *Map layer: nodes of a (sf)network*

Description

Map layer that draws the nodes of a (sf)network.

Usage

```
tm_nodes(
  size = tm_const(),
  size.scale = tm_scale(),
  size.legend = tm_legend(),
  size.free = NA,
  fill = tm_const(),
  fill.scale = tm_scale(),
  fill.legend = tm_legend(),
  fill.free = NA,
  col = tm_const(),
  col.scale = tm_scale(),
  col.legend = tm_legend(),
  col.free = NA,
  shape = tm_const(),
  shape.scale = tm_scale(),
  shape.legend = tm_legend(),
  shape.free = NA,
  lwd = tm_const(),
  lwd.scale = tm_scale(),
  lwd.legend = tm_legend(),
  lwd.free = NA,
  lty = tm_const(),
  lty.scale = tm_scale(),
  lty.legend = tm_legend(),
  lty.free = NA,
```

```
  fill_alpha = tm_const(),
  fill_alpha.scale = tm_scale(),
  fill_alpha.legend = tm_legend(),
  fill_alpha.free = NA,
  col_alpha = tm_const(),
  col_alpha.scale = tm_scale(),
  col_alpha.legend = tm_legend(),
  col_alpha.free = NA,
  plot.order = tm_plot_order("size"),
  zindex = NA,
  group = NA,
  group.control = "check",
  popup.vars = NA,
  popup.format = list(),
  hover = NA,
  id = "",
  options = opt_tm_nodes()
)

opt_tm_nodes(
  points_only = "ifany",
  point_per = "feature",
  on_surface = FALSE,
  icon.scale = 3,
  just = NA,
  grob.dim = c(width = 48, height = 48, render.width = 256, render.height = 256)
)
```

Arguments

`size`, `size.scale`, `size.legend`, `size.free`	Visual variable that determines the size. See details.
`fill`, `fill.scale`, `fill.legend`, `fill.free`	Visual variable that determines the fill color. See details.
`col`, `col.scale`, `col.legend`, `col.free`	Visual variable that determines the col color. See details.
`shape`, `shape.scale`, `shape.legend`, `shape.free`	Visual variable that determines the shape. See details.
`lwd`, `lwd.scale`, `lwd.legend`, `lwd.free`	Visual variable that determines the line width. See details.
`lty`, `lty.scale`, `lty.legend`, `lty.free`	Visual variable that determines the line type. See details.
`fill_alpha`, `fill_alpha.scale`, `fill_alpha.legend`, `fill_alpha.free`	Visual variable that determines the fill color alpha transparency See details.
`col_alpha`, `col_alpha.scale`, `col_alpha.legend`, `col_alpha.free`	Visual variable that determines the border color alpha transparency. See details.
`plot.order`	Specification in which order the spatial features are drawn. See ‘tmap::tm_plot_order‘ for details.

zindex	Map layers are drawn on top of each other. The zindex numbers (one for each map layer) determines the stacking order. By default the map layers are drawn in the order they are called.
group	Name of the group to which this layer belongs. This is only relevant in view mode, where layer groups can be switched (see 'group.control')
group.control	In view mode, the group control determines how layer groups can be switched on and off. Options: '"radio"' for radio buttons (meaning only one group can be shown), '"check"' for check boxes (so multiple groups can be shown), and '"none"' for no control (the group cannot be (de)selected).
popup.vars	names of data variables that are shown in the popups in '"view"' mode. Set popup.vars to 'TRUE' to show all variables in the shape object. Set popup.vars to 'FALSE' to disable popups. Set 'popup.vars' to a character vector of variable names to those those variables in the popups. The default ('NA') depends on whether visual variables (e.g.'fill') are used. If so, only those are shown. If not all variables in the shape object are shown.
popup.format	list of formatting options for the popup values. See the argument 'legend.format' for options. Only applicable for numeric data variables. If one list of formatting options is provided, it is applied to all numeric variables of 'popup.vars'. Also, a (named) list of lists can be provided. In that case, each list of formatting options is applied to the named variable.
hover	name of the data variable that specifies the hover labels (view mode only). Set to 'FALSE' to disable hover labels. By default 'FALSE', unless 'id' is specified. In that case, it is set to 'id',
id	name of the data variable that specifies the indices of the spatial features. Only used for '"view"' mode.
options	options passed on to the corresponding 'opt_<layer_function>' function
points_only	should only point geometries of the shape object (defined in [tmap::tm_shape()]) be plotted? By default '"ifany"', which means 'TRUE' in case a geometry collection is specified.
point_per	specification of how spatial points are mapped when the geometry is a multi line or a multi polygon. One of "feature", "segment" or "largest". The first generates a spatial point for every feature, the second for every segment (i.e. subfeature), the third only for the largest segment (subfeature). Note that the last two options can be significant slower.
on_surface	In case of polygons, centroids are computed. Should the points be on the surface? If 'TRUE', which is slower than the default 'FALSE', centroids outside the surface are replaced with points computed with [sf::st_point_on_surface()].
icon.scale	scaling number that determines how large the icons (or grobs) are in plot mode in comparison to proportional symbols (such as bubbles). For view mode, use the argument 'grob.dim'
just	not used (yet)
grob.dim	vector of four values that determine how grob objects (see details) are shown in view mode. The first and second value are the width and height of the displayed icon. The third and fourth value are the width and height of the rendered png image that is used for the icon. Generally, the third and fourth value should be

large enough to render a ggplot2 graphic successfully. Only needed for the view mode.

Value

a [tmap::tmap-element], supposed to be stacked after [tmap::tm_shape()] using the ‘+‘ operator. The ‘opt_<layer_function>‘ function returns a list that should be passed on to the ‘options‘ argument.

Examples

```
library(tmap)
library(sfnetworks)

sfn = as_sfnetwork(roxel)

tm_shape(sfn) +
tm_network()

tm_shape(sfn) +
tm_edges(col = "type", lwd = 4) +
tm_nodes()
```

Index