Package 'viridisLite'

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Type Package

Title Colorblind-Friendly Color Maps (Lite Version)

Version 0.4.1

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Description Color maps designed to improve graph readability for readers with common forms of color blindness and/or color vision deficiency. The color maps are also perceptually-uniform, both in regular form and also when converted to black-and-white for printing. This is the 'lite' version of the 'viridis' package that also contains 'ggplot2' bindings for discrete and continuous color and fill scales and can be found at <<u>https://cran.r-project.org/package=viridis></u>.

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Encoding UTF-8

Depends R (>= 2.10)

Suggests hexbin (>= 1.27.0), ggplot2 (>= 1.0.1), testthat, covr

URL https://sjmgarnier.github.io/viridisLite/,

https://github.com/sjmgarnier/viridisLite/

BugReports https://github.com/sjmgarnier/viridisLite/issues/

RoxygenNote 7.2.1

NeedsCompilation no

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R topics documented:

viridis		2
viridis.map	4	1
		5

Index

viridis

Viridis Color Palettes

Description

This function creates a vector of n equally spaced colors along the selected color map.

Usage

Arguments

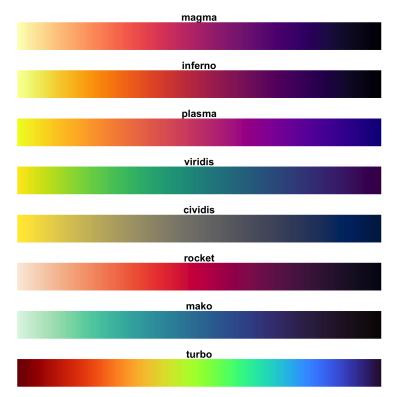
n	The number of colors (≥ 1) to be in the palette.
alpha	The alpha transparency, a number in $[0,1]$, see argument alpha in hsv.
begin	The (corrected) hue in $[0,1]$ at which the color map begins.
end	The (corrected) hue in $[0,1]$ at which the color map ends.
direction	Sets the order of colors in the scale. If 1, the default, colors are ordered from darkest to lightest. If -1, the order of colors is reversed.
option	A character string indicating the color map option to use. Eight options are available:
	 "magma" (or "A") "inferno" (or "B")

viridis

- "viridis" (or "D")
- "cividis" (or "E")
- "rocket" (or "F")
- "mako" (or "G")
- "turbo" (or "H")

Details

Here are the color scales:



magma(), plasma(), inferno(), cividis(), rocket(), mako(), and turbo() are convenience functions for the other color map options, which are useful when the scale must be passed as a function name.

Semi-transparent colors (0 < alpha < 1) are supported only on some devices: see rgb.

Value

viridis returns a character vector, cv, of color hex codes. This can be used either to create a userdefined color palette for subsequent graphics by palette(cv), a col = specification in graphics functions or in par.

viridisMap returns a n lines data frame containing the red (R), green (G), blue (B) and alpha (alpha) channels of n equally spaced colors along the selected color map. n = 256 by default.

Author(s)

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Examples

```
library(ggplot2)
library(hexbin)

dat <- data.frame(x = rnorm(10000), y = rnorm(10000))

ggplot(dat, aes(x = x, y = y)) +
  geom_hex() + coord_fixed() +
  scale_fill_gradientn(colours = viridis(256, option = "D"))

# using code from RColorBrewer to demo the palette
n = 200
image(
    1:n, 1, as.matrix(1:n),
    col = viridis(n, option = "D"),
    xlab = "viridis n", ylab = "", xaxt = "n", yaxt = "n", bty = "n"
)</pre>
```

viridis.map

Color Map Data

Description

A data set containing the RGB values of the color maps included in the package. These are:

- 'magma', 'inferno', 'plasma', and 'viridis' as defined in Matplotlib for Python. These color maps are designed in such a way that they will analytically be perfectly perceptually-uniform, both in regular form and also when converted to black-and-white. They are also designed to be perceived by readers with the most common form of color blindness. They were created by Stéfan van der Walt and Nathaniel Smith;
- 'cividis', a corrected version of 'viridis', 'cividis', developed by Jamie R. Nuñez, Christopher R. Anderton, and Ryan S. Renslow, and originally ported to R by Marco Sciaini. It is designed to be perceived by readers with all forms of color blindness;
- · 'rocket' and 'mako' as defined in Seaborn for Python;
- 'turbo', an improved Jet rainbow color map for reducing false detail, banding and color blindness ambiguity.

Usage

viridis.map

viridis.map

Format

A data frame with 2048 rows and 4 variables:

- R: Red value;
- G: Green value;
- B: Blue value;
- opt: The colormap "option" (A: magma; B: inferno; C: plasma; D: viridis; E: cividis; F: rocket; G: mako; H: turbo).

Author(s)

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References

- 'magma', 'inferno', 'plasma', and 'viridis': https://bids.github.io/colormap/
- 'cividis': https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0199239
- 'rocket' and 'mako': https://seaborn.pydata.org/index.html
- 'turbo': https://ai.googleblog.com/2019/08/turbo-improved-rainbow-colormap-for.html

Index

* datasets
 viridis.map, 4
cividis(viridis), 2
hsv, 2

inferno(viridis), 2

magma(viridis), 2
mako(viridis), 2

plasma (viridis), 2

rgb, 3
rocket (viridis), 2

turbo(viridis), 2

viridis, 2
viridis.map, 4
viridisMap(viridis), 2