Package 'viridisLite'

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Type Package

Title Colorblind-Friendly Color Maps (Lite Version)

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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 <https://cran.r-project.org/package=viridis>.

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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 7.3.3

NeedsCompilation no

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Contents

`viridis` *Viridis Color Palettes*

Description

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

Usage

```
viridis(n, alpha = 1, begin = 0, end = 1, direction = 1, option = "D")

viridisMap(n = 256, alpha = 1, begin = 0, end = 1, direction = 1, option = "D")

magma(n, alpha = 1, begin = 0, end = 1, direction = 1)

inferno(n, alpha = 1, begin = 0, end = 1, direction = 1)

plasma(n, alpha = 1, begin = 0, end = 1, direction = 1)

cividis(n, alpha = 1, begin = 0, end = 1, direction = 1)

rocket(n, alpha = 1, begin = 0, end = 1, direction = 1)

mako(n, alpha = 1, begin = 0, end = 1, direction = 1)

turbo(n, alpha = 1, begin = 0, end = 1, direction = 1)
```

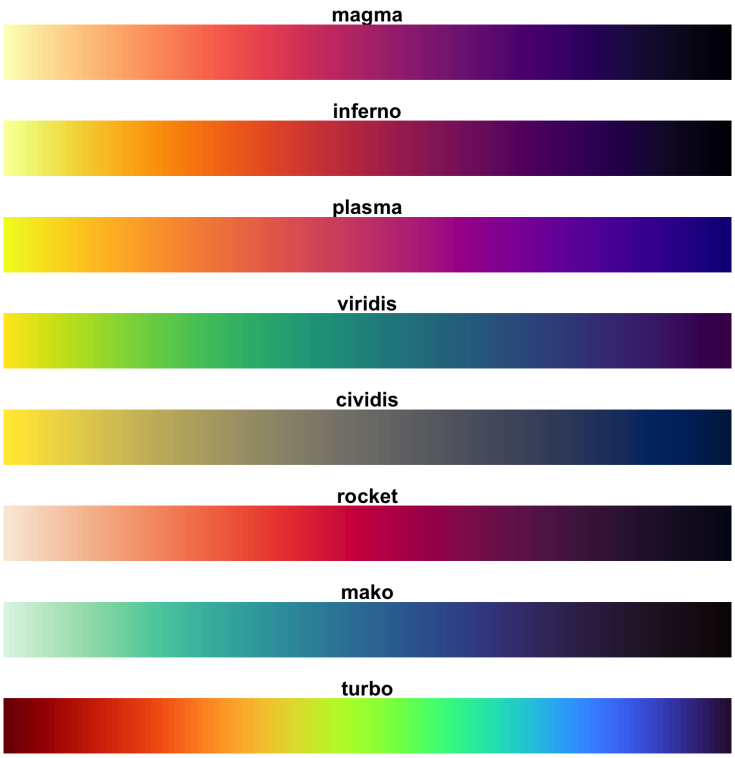
Arguments

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")

- "plasma" (or "C")
- "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 user-defined 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"
)
```

---

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
```

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, viridis https://bids.github.io/colormap/

cividis https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0199239

rocket, mako https://seaborn.pydata.org/index.html

turbo https://ai.googleblog.com/2019/08/turbo-improved-rainbow-colormap-for.html

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