

Package ‘viridisLite’

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Type Package

Title Default Color Maps from 'matplotlib' (Lite Version)

Version 0.3.0

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Description Implementation of the 'viridis' - the default -, 'magma', 'plasma', 'inferno', and 'cividis' color maps for 'R'. 'viridis', 'magma', 'plasma', and 'inferno' are ported from 'matplotlib' <<http://matplotlib.org/>>, a popular plotting library for 'python'. 'cividis', was developed by Jamie R. Nuñez and Sean M. Colby. 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 (all color maps in this package) and color vision deficiency ('cividis' only). This is the 'lite' version of the more complete 'viridis' package that can be found at <<https://cran.r-project.org/package=viridis>>.

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LazyData TRUE

Encoding UTF-8

Depends R (>= 2.10)

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

URL <https://github.com/sjmgarnier/viridisLite>

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

RoxygenNote 6.0.1

NeedsCompilation no

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viridis	<i>Matplotlib 'viridis' and 'cividis' color map</i>
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Description

This function creates a vector of n equally spaced colors along the Matplotlib 'viridis' color map created by [Stéfan van der Walt](#) and [Nathaniel Smith](#). This color map is designed in such a way that it will analytically be perfectly perceptually-uniform, both in regular form and also when converted to black-and-white. It is also designed to be perceived by readers with the most common form of color blindness.

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)
```

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 viridis colormap begins.
end	The (corrected) hue in $[0,1]$ at which the viridis colormap 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 colormap option to use. Four options are available: "magma" (or "A"), "inferno" (or "B"), "plasma" (or "C"), "viridis" (or "D", the default option) and "cividis" (or "E").

Details

A corrected version of 'viridis', 'cividis', was developed by [Jamie R. Nuñez](#) and [Sean M. Colby](#). It is optimal for viewing by those with color vision deficiency. 'cividis' is designed to be perfectly perceptually-uniform, both in regular form and also when converted to black-and-white, and can be perceived by readers with all forms of color blindness.

Here are the color scales:



`magma()`, `plasma()`, `inferno()` and `cividis()` are convenience functions for the other colormap options, which are useful 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 'viridis' color map. `n = 256` by default, which corresponds to the data from the original 'viridis' color map in Matplotlib.

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

Original 'viridis' and 'cividis' color map

Description

A dataset containing the original RGB values of the default Matplotlib color map ('viridis') and the color vision deficiencies optimized color map 'cividis'. Sources: https://github.com/BIDS/colormap/blob/master/option_d.py and <https://github.com/pnml/cmaputil/blob/master/colormaps/cividis.txt>.

Usage

```
viridis.map
```

Format

A data frame with 1280 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)

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