Package ‘viridis’
February 2, 2018

Type Package
Title Default Color Maps from 'matplotlib'
Version 0.5.0
Maintainer Simon Garnier <garnier@njit.edu>
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).

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LazyData TRUE
Encoding UTF-8
Depends R (>= 2.10), viridisLite (>= 0.2.0)
Imports stats, ggplot2 (>= 1.0.1), gridExtra
Suggests hexbin (>= 1.27.0), scales, MASS, knitr, dichromat, colorspace, rasterVis, httr, mapproj, vdiffr, svglite (>= 1.2.0), testthat, covr, rmarkdown, rgdal
VignetteBuilder knitr
URL https://github.com/sjmgarnier/viridis
BugReports https://github.com/sjmgarnier/viridis/issues
RoxygenNote 6.0.1
NeedsCompilation no
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scale_color_viridis

<table>
<thead>
<tr>
<th>Description</th>
<th>Uses the viridis color scale.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Usage</strong></td>
<td><code>scale_color_viridis(..., alpha = 1, begin = 0, end = 1, direction = 1, discrete = FALSE, option = &quot;D&quot;)</code></td>
</tr>
<tr>
<td></td>
<td><code>scale_colour_viridis(..., alpha = 1, begin = 0, end = 1, direction = 1, discrete = FALSE, option = &quot;D&quot;)</code></td>
</tr>
<tr>
<td></td>
<td><code>scale_fill_viridis(..., alpha = 1, begin = 0, end = 1, direction = 1, discrete = FALSE, option = &quot;D&quot;)</code></td>
</tr>
<tr>
<td><strong>Arguments</strong></td>
<td>... parameters to <code>discrete_scale</code> or <code>scale_fill_gradientn</code></td>
</tr>
<tr>
<td></td>
<td>alpha pass through parameter to <code>viridis</code></td>
</tr>
<tr>
<td></td>
<td>begin The (corrected) hue in [0,1] at which the viridis colormap begins.</td>
</tr>
<tr>
<td></td>
<td>end The (corrected) hue in [0,1] at which the viridis colormap ends.</td>
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<tr>
<td></td>
<td>direction Sets the order of colors in the scale. If 1, the default, colors are as output by <code>viridis_pal</code>. If -1, the order of colors is reversed.</td>
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<tr>
<td></td>
<td>discrete generate a discrete palette? (default: FALSE - generate continuous palette)</td>
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<tr>
<td></td>
<td>option A character string indicating the colormap option to use. Four options are available: &quot;magma&quot; (or &quot;A&quot;), &quot;inferno&quot; (or &quot;B&quot;), &quot;plasma&quot; (or &quot;C&quot;), &quot;viridis&quot; (or &quot;D&quot;, the default option) and &quot;cividis&quot; (or &quot;E&quot;).</td>
</tr>
<tr>
<td><strong>Details</strong></td>
<td>For <code>discrete</code> == FALSE (the default) all other arguments are as to <code>scale_fill_gradientn</code> or <code>scale_color_gradientn</code>. Otherwise the function will return a <code>discrete_scale</code> with the plot-computed number of colors.</td>
</tr>
<tr>
<td></td>
<td>See <code>viridis</code> for more information on the color scale.</td>
</tr>
</tbody>
</table>
scale_color_viridis

Author(s)

Noam Ross <noam.ross@gmail.com> / @noamross (continuous version), Bob Rudis <bob@rud.is> / @hrbrmstr (combined version)

Examples

library(ggplot2)

# ripped from the pages of ggplot2
p <- ggplot(mtcars, aes(wt, mpg))
p + geom_point(size=4, aes(colour = factor(cyl))) +
    scale_color_viridis(discrete=TRUE) +
    theme_bw()

# ripped from the pages of ggplot2
dsub <- subset(diamonds, x > 5 & x < 6 & y > 5 & y < 6)
dsub$diff <- with(dsub, sqrt(abs(x-y))*sign(x-y))
d <- ggplot(dsub, aes(x, y, colour=diff)) + geom_point()
d + scale_color_viridis() + theme_bw()

# from the main viridis example
dat <- data.frame(x = rnorm(10000), y = rnorm(10000))
ggplot(dat, aes(x = x, y = y)) +
    geom_hex() + coord_fixed() +
    scale_fill_viridis() + theme_bw()

library(ggplot2)
library(MASS)
library(gridExtra)
data("geyser", package="MASS")
ggplot(geyser, aes(x = duration, y = waiting)) +
    xlim(0.5, 6) + ylim(40, 110) +
    stat_density2d(aes(fill = ..level..), geom="polygon") +
    theme_bw() +
    theme(panel.grid=element_blank()) -> gg

grid.arrange(
gg + scale_fill_viridis(option="A") + labs(x="Virdis A", y=NULL),
gg + scale_fill_viridis(option="B") + labs(x="Virdis B", y=NULL),
gg + scale_fill_viridis(option="C") + labs(x="Virdis C", y=NULL),
gg + scale_fill_viridis(option="D") + labs(x="Virdis D", y=NULL),
gg + scale_fill_viridis(option="E") + labs(x="Virdis E", y=NULL),
ncol=3, nrow=2
)
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/cmap/blob/master/option_d.py and https://github.com/pnnl/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)

Description

Viridis palette (discrete)

Usage

viridis_pal(alpha = 1L, begin = 0L, end = 1L, direction = 1L, option = "D")

Arguments

- alpha: pass through parameter to viridis
- 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").
viridis_pal

Details

Here is an example of a 20-element palette:

See viridis for more information on the color scale.

Author(s)

Bob Rudis <bob@rud.is>

Examples

library(scales)
show_col(viridis_pal()$(10))
Index

*Topic datasets
   viridis.map, 4

scale_color_gradientn, 2
scale_color_viridis, 2
scale_colour_viridis
   (scale_color_viridis), 2
scale_fill_gradientn, 2
scale_fill_viridis
   (scale_color_viridis), 2

viridis, 2, 5
viridis.map, 4
viridis_pal, 2, 4