

# Package ‘scico’

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**Title** Colour Palettes Based on the Scientific Colour-Maps

**Version** 1.5.0

**Maintainer** Thomas Lin Pedersen <thomasp85@gmail.com>

**Description** Colour choice in information visualisation is important in order to avoid being misled by inherent bias in the used colour palette. The 'scico' package provides access to the perceptually uniform and colour-blindness friendly palettes developed by Fabio Crameri and released under the "Scientific Colour-Maps" moniker. The package contains 24 different palettes and includes both diverging and sequential types.

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**Depends** R (>= 2.10)

**Imports** scales, grDevices

**Suggests** ggplot2, testthat, dplyr, covr

**URL** <https://github.com/thomasp85/scico>

**BugReports** <https://github.com/thomasp85/scico/issues>

**RoxygenNote** 7.2.3

**NeedsCompilation** no

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**Repository** CRAN

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scico-package

*scico: Colour Palettes Based on the Scientific Colour-Maps*

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### Description

Colour choice in information visualisation is important in order to avoid being misled by inherent bias in the used colour palette. The 'scico' package provides access to the perceptually uniform and colour-blindness friendly palettes developed by Fabio Crameri and released under the "Scientific Colour-Maps" moniker. The package contains 24 different palettes and includes both diverging and sequential types.

### Author(s)

**Maintainer:** Thomas Lin Pedersen <thomasp85@gmail.com> ([ORCID](#))

Authors:

- Fabio Crameri

### See Also

Useful links:

- <https://github.com/thomasp85/scico>
- Report bugs at <https://github.com/thomasp85/scico/issues>

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ggplot2-scales

*Scales to use for ggplot2*

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### Description

These functions provide the option to use the scico palettes along with the ggplot2 package. It goes without saying that it requires ggplot2 to work.

### Usage

```
scale_colour_scico(  
  ...,  
  alpha = NULL,  
  begin = 0,  
  end = 1,  
  direction = 1,  
  palette = "bilbao",  
  midpoint = NA  
)
```

```
scale_color_scico(  
  ...,  
  alpha = NULL,  
  begin = 0,  
  end = 1,  
  direction = 1,  
  palette = "bilbao",  
  midpoint = NA  
)  
  
scale_fill_scico(  
  ...,  
  alpha = NULL,  
  begin = 0,  
  end = 1,  
  direction = 1,  
  palette = "bilbao",  
  midpoint = NA  
)  
  
scale_colour_scico_d(  
  ...,  
  alpha = 1,  
  begin = 0,  
  end = 1,  
  direction = 1,  
  palette = "batlow",  
  aesthetics = "colour"  
)  
  
scale_color_scico_d(  
  ...,  
  alpha = 1,  
  begin = 0,  
  end = 1,  
  direction = 1,  
  palette = "batlow",  
  aesthetics = "colour"  
)  
  
scale_fill_scico_d(  
  ...,  
  alpha = 1,  
  begin = 0,  
  end = 1,  
  direction = 1,  
  palette = "batlow",  
  aesthetics = "fill"
```

)

**Arguments**

...	Arguments to pass on to <code>ggplot2::scale_colour_gradientn()</code> , <code>ggplot2::scale_fill_gradientn()</code> , <code>ggplot2::ggplot2::discrete_scale()</code>
alpha	The opacity of the generated colours. If specified rgba values will be generated. The default (NULL) will generate rgb values which corresponds to alpha = 1
begin, end	The interval within the palette to sample colours from. Defaults to 0 and 1 respectively
direction	Either 1 or -1. If -1 the palette will be reversed
palette	The name of the palette to sample from. See <code>scico_palette_names()</code> for a list of possible names
midpoint	A midpoint to center the scale on, used primarily for diverging and multisequential scales
aesthetics	Character string or vector of character strings listing the name(s) of the aesthetic(s) that this scale works with. This can be useful, for example, to apply colour settings to the colour and fill aesthetics at the same time, via <code>aesthetics = c("colour", "fill")</code> .

**Value**

A `ScaleContinuous` or `ScaleDiscrete` object that can be added to a `ggplot` object

**Examples**

```
if (require('ggplot2')) {
  volcano <- data.frame(
    x = rep(seq_len(ncol(volcano)), each = nrow(volcano)),
    y = rep(seq_len(nrow(volcano)), ncol(volcano)),
    height = as.vector(volcano)
  )

  ggplot(volcano, aes(x = x, y = y, fill = height)) +
    geom_raster() +
    scale_fill_scico(palette = 'tokyo')

  ggplot(iris, aes(x=Petal.Width, y=Petal.Length)) +
    geom_point(aes(color=Species), size=10) +
    scale_colour_scico_d()
}
```

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`scico`*Scientific colour map palettes*

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## Description

This function constructs palettes of the specified size based on the colour maps developed by Fabio Crameri. It follows the same API style as `viridis()` from the `viridisLite` package so anyone familiar with this package can easily adapt to that.

## Usage

```
scico(  
  n,  
  alpha = NULL,  
  begin = 0,  
  end = 1,  
  direction = 1,  
  palette = "bilbao",  
  categorical = FALSE  
)
```

## Arguments

<code>n</code>	The number of colours to generate for the palette
<code>alpha</code>	The opacity of the generated colours. If specified rgba values will be generated. The default (NULL) will generate rgb values which corresponds to alpha = 1
<code>begin, end</code>	The interval within the palette to sample colours from. Defaults to 0 and 1 respectively
<code>direction</code>	Either 1 or -1. If -1 the palette will be reversed
<code>palette</code>	The name of the palette to sample from. See <code>scico_palette_names()</code> for a list of possible names
<code>categorical</code>	Boolean. Should the categorical palettes be returned

## Value

A character vector of length `n` with hexencoded rgb(a) colour values

## References

<http://www.fabiocrameri.ch/colourmaps.php>

Crameri, Fabio. (2021, September 12). *Scientific colour maps (Version 7.0.1)*. Zenodo. doi:10.5281/zenodo.5501399  
Crameri, Fabio. (2018). *Geodynamic diagnostics, scientific visualisation and StagLab 3.0*. Geosci. Model Dev. Discuss. doi:10.5194/gmd2017328

## Examples

```
# Use the default palette
scico(15)

# Flip the direction
scico(15, direction = -1)

# Take a subset of a palette
scico(15, begin = 0.3, end = 0.6, palette = 'berlin')
```

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scico\_palette\_show     *Show the different scico palettes*

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## Description

This is a simple function to show a gradient of the different palettes available in the scico package

## Usage

```
scico_palette_show(
  palettes = scico_palette_names(categorical),
  categorical = FALSE,
  n = if (categorical) 6 else 100
)
```

## Arguments

palettes	One or more palette names to show
categorical	Boolean. Should the categorical palettes be returned
n	How many colours should be shown

## Examples

```
scico_palette_show()
scico_palette_show(categorical = TRUE)
```

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