Package 'katex'

September 29, 2024

Type Package

Title Rendering Math to HTML, 'MathML', or R-Documentation Format

Version 1.5.0

Description Convert latex math expressions to HTML and 'MathML' for use in
markdown documents or package manual pages. The rendering is done in
R using the V8 engine (i.e. server-side), which eliminates the need
for embedding the 'MathJax' library into your web pages. In addition
a 'math-to-rd' wrapper is provided to automatically render beautiful
math in R documentation files.

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URL https://docs.ropensci.org/katex/,
https://github.com/ropensci/katex
https://katex.org/docs/options.html (upstream)

BugReports https://github.com/ropensci/katex/issues

Encoding UTF-8

RoxygenNote 7.3.2.9000

Imports V8

VignetteBuilder knitr

Suggests knitr, rmarkdown

NeedsCompilation no

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katex   *Tex math rendering in R*

Description

Converts tex-style math expressions to html and mathml for use in manual pages or markdown
documents. The conversion is done in R using V8 ("server-side"), hence the resulting fragment can
be inserted into an HTML document without the need for a JavaScript library like MathJax. Only
the katex.css style file is required in the final html document. Use math_to_rd for embedding math
into R documentation (.rd) pages.

Usage

```
katex_html(
  tex,
  displayMode = TRUE,
  ...,
  include_css = FALSE,
  preview = interactive()
)

katex_mathml(tex, displayMode = TRUE, ...)

example_math()
```

Arguments

tex	input string with tex math expression.
displayMode	render math in centered 2D layout, similar to $$ in tex. Set to FALSE to render (non-centered) inline layout for use in text. For pdf output, this corresponds to the \deqn{} and \eqn{} macros, see WRE 2.6: Mathematics
...	additional html rendering options passed to katex.render
include_css	adds the katex css file to the output. This is only required once per html webpage. Set to FALSE if you include css files into the your html head some other way.
preview	open an HTML preview page showing the snipped in the browser

Details

Refer to the upstream katex support table for the full list of supported tex functions that can be
rendered to html using katex.

By default, katex_html returns a mix of HTML for visual rendering and includes MathML for
accessibility. To only get html, pass output="html" in the extra options, see also the katex documentation.

Value

a string with a html/mathml fragment

See Also

Other katex: `math_to_rd()`, `pandoc`

Examples

```
# Basic examples
html <- katex_html(example_math())
mathml <- katex_mathml(example_math())

# Example from katex.org homepage:
macros <- list("\\f" = "#1f(#2)")
math <- "\\f\\relax{x} = \\int_{-\\infty}^\\infty \\f\\hat\\xi\\,e^{2 \\pi i \\xi x} \\,d\\xi"
html <- katex_html(math, macros = macros)
mathml <- katex_mathml(math, macros = macros)
```

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math_to_rd *Display math in R documentation*

Description

Helper function to insert tex math expressions into R documentation (`.rd`) files. Uses Katex rendering for documentation in html format, and the appropriate latex macros for documentation rendered in pdf or plain-text.

Usage

```
math_to_rd(tex, ascii = tex, displayMode = TRUE, ..., include_css = TRUE)
```

Arguments

tex	input string with tex math expression.
ascii	alternate text-only representation of the input math to show in documentation rendered to plain text format.
displayMode	render math in centered 2D layout, similar to `$$` in tex. Set to `FALSE` to render (non-centered) inline layout for use in text. For pdf output, this corresponds to the \deqn{} and \eqn{} macros, see WRE 2.6: Mathematics
...	additional html rendering options passed to katex.render
include_css	adds the katex css file to the output. This is only required once per html webpage. Set to `FALSE` if you include css files into the your html head some other way.

Details

Use `math_to_rd()` inside `\Sexpr` to embed math in your R package documentation pages. For example the code below can be inserted in your `rd` (or roxygen) source code:

```
\Sexpr[results=rd, stage=build]{
  katex::math_to_rd(katex::example_math())
}
```

Which results in the following output:

$$f(x) = \frac{1}{\sigma\sqrt{2\pi}} e^{-\frac{1}{2}(\frac{x-\mu}{\sigma})^2}$$

Optionally you can specify an alternate ascii representation that will be shown in the plain-text format rendering of the documentation:

```
\Sexpr[results=rd, stage=build]{
  katex::math_to_rd('E=MC^2', 'E=mc²')
}
```

$$E = MC^2$$

If no ascii representation is given, the input tex in displayed verbatim into the plain-text documentation.

Value

a string with an rd fragment to be included in R documentation

Note for Windows

On Windows, R versions before 4.1.2 had a bug which could lead to incorrect HTML encoding for `\Sexpr{}` output. As a workaround, we automatically escape non-ascii html characters on these versions of R. Linux and MacOS are unaffected.

See Also

Other katex: katex, pandoc

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pandoc   *Renders math in HTML document*

Description

Reads an html file and substitutes elements of class `"math display"` and `"math inline"` with rendered html math. This is mainly intended as a post-processing step for pandoc, which generates such html for equations. As a result the math can be displayed without the need for including the mathjax library in the html document.

Usage

```
render_math_in_html(
  input,
  output = NULL,
  ...,
  throwOnError = FALSE,
  include_css = TRUE
)
```

Arguments

input	path to the html input file
output	path to the output html file, or NULL to return as string
...	additional html rendering options passed to katex.render
throwOnError	should invalid math raise an error in R? See katex options
include_css	automatically inject the required katex css in the html head

See Also

Other katex: katex, math_to_rd()

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