

# Package: lusweave (via r-universe)

September 22, 2024

**Type** Package

**Title** Sweave/Knitr Utilities

**Version** 1.46.3

**Date** 2022-04-04

**Description** Set of tools which simplify the usage of SWeave/Knitr in R  
and allow to easily create PDF files from within R.

**License** BSD\_2\_clause + file LICENSE

**URL** <https://github.com/pik-piam/lusweave>,  
<https://doi.org/10.5281/zenodo.1158594>

**BugReports** <https://github.com/pik-piam/lusweave/issues>

**Depends** methods, R (>= 2.10.0)

**Imports** knitr (>= 1.38), xtable

**Suggests** covr, testthat (>= 3.0.0), withr

**Encoding** UTF-8

**LazyData** no

**RoxygenNote** 7.1.2

**Config/testthat/edition** 3

**Repository** <https://pik-piam.r-universe.dev>

**RemoteUrl** <https://github.com/pik-piam/lusweave>

**RemoteRef** HEAD

**RemoteSha** 5341ac98d084e5efcf2fb88bebe2b7ac7cd51087

## Contents

lusweavedata . . . . .	2
swclose . . . . .	2
swfigure . . . . .	4
swlatex . . . . .	5
swopen . . . . .	6

swR . . . . .	7
swStream-class . . . . .	8
swtable . . . . .	9

<b>Index</b>	<b>12</b>
--------------	-----------

---

lusweavedata	<i>lusweavedata</i>
--------------	---------------------

---

### Description

General lusweave-dataset

### Details

Please do not directly access that data. It should be only used by library functions.

### Author(s)

Jan Philipp Dietrich

---

swclose	<i>Close a swStream</i>
---------	-------------------------

---

### Description

Function to create a pdf from a "[swStream](#)" object

### Usage

```
swclose(
  stream,
  outfile = "",
  latexpath = "",
  clean_output = TRUE,
  engine = "knitr",
  save_stream = TRUE,
  knitquiet = TRUE
)
```

**Arguments**

stream	The swStream object to be processed.
outfile	Name of the pdf to be produced. Overwrites the name given in swopen
latexpath	Path of the LaTeX distribution (only necessary if not part of the PATH variable).
clean_output	If true, all auxiliary files will be deleted. If False, they remain, including each plot in its own pdf.
engine	Engine to use for conversion. Currently available: Sweave and knitr.
save_stream	If true (default) stream is saved to .rda file.
knitquiet	If false (default) progressbar and messages are printed otherwise suppressed.

**Details**

Creates a pdf with of the name specified in `stream@name`, with the content specified in `stream@content`, using `stream@Sweave.sty` as the style file.

**Value**

No return value.

**Author(s)**

Markus Bonsch, David Klein

**See Also**

["swStream"](#), [swopen](#), [swlatex](#), [swR](#), [swtable](#), [swfigure](#)

**Examples**

```
## Not run:
test<-swopen(outfile="test.pdf")
swlatex(test,"tttteeessssttt")
swclose(test)
#Change the name
swclose(test,outfile="test_2.pdf")

## End(Not run)
```

---

swfigure

*swfigure*


---

### Description

Function to add R plots to a "`swStream`" object.

### Usage

```
swfigure(
  stream,
  plot_func,
  ...,
  tex_caption = "",
  tex_label = "",
  fig.placement = "H",
  fig.width = "",
  fig.orientation = "portrait",
  sw_option = "",
  sw_label = "AUTO"
)
```

### Arguments

<code>stream</code>	The <code>swStream</code> object to be modified.
<code>plot_func</code>	The R command, that produces the plot.
<code>...</code>	The arguments of the plotting command.
<code>tex_caption</code>	caption of the plot.
<code>tex_label</code>	label for the plot in <code>.tex</code> file for referencing.
<code>fig.placement</code>	Where to put the figure in the pdf. Typical LaTeX allocation like "h","ht","b" allowed.
<code>fig.width</code>	Width of the figure in the pdf as fraction of <code>textwidth</code> .
<code>fig.orientation</code>	landscape or portrait. If wrongly specified, parts of the figure will be cut (e.g. necessary for maps).
<code>sw_option</code>	Sweave options. See <a href="http://www.stat.uni-muenchen.de/~leisch/Sweave/Sweave-manual.pdf">http://www.stat.uni-muenchen.de/~leisch/Sweave/Sweave-manual.pdf</a> for details
<code>sw_label</code>	label for the plot in the Sweave file. (Not very likely necessary to be changed)

### Details

Method designed to add an R plot to a `swStream` object, taking care that it is correctly embedded.

### Value

No return value.

**Author(s)**

Markus Bonsch

**See Also**

["swStream"](#), [swopen](#), [swclose](#), [swlatex](#), [swR](#), [swtable](#)

**Examples**

```
## Not run:  
test<-swopen(outfile="test.pdf")  
swfigure(test,"plot",0,0,tex_caption="test figure",fig.width=0.5)  
swclose(test)  
  
## End(Not run)
```

---

swlatex

*swlatex*

---

**Description**

Function to write LaTeX code to a ["swStream"](#) object.

**Usage**

```
swlatex(stream, ...)
```

**Arguments**

<code>stream</code>	The <a href="#">swStream</a> object to be modified.
<code>...</code>	The content, that is to be added.

**Details**

Writes plain text to the [swStream](#) object. Be careful to escape R special characters like `"\"`.

**Value**

No return value.

**Author(s)**

Markus Bonsch

**See Also**

["swStream"](#), [swopen](#), [swclose](#), [swR](#), [swtable](#), [swfigure](#)

**Examples**

```
## Not run:
test<-swopen(outfile="test.pdf")
swlatex(test,"This is a test text")
swclose(test)

## End(Not run)
```

---

swopen

*Open an swStream*


---

**Description**

Function to create a swStream object, that can be used to create a pdf including R output

**Usage**

```
swopen(
  outfile = "out.pdf",
  folder = "",
  template = "default",
  style = "default",
  orientation = NULL,
  envir = new.env()
)
```

**Arguments**

outfile	name for the output pdf. Can be specified with or w/o the .pdf extension. Can also contain a path to a differetn directory.
folder	Path where the output shall be produced.
template	A template which should be used for the PDF. Either a path to a .tex-file or a vector containing the tex template code or a name of a template which already comes with the library. Currently the following templates are part of the library: "default","default_landscape" and "david".
style	Style information which should be used for the PDF. Either a path to a .sty-file or a vector containing the tex style code or a name of a style which already comes with the library. Currently the following styles are part of the library: "default"
orientation	[DEPRECATED] Please do not use this argument. It is just left in the function for compatibility reasons.
envir	The environment in which the object should be saved. A new environment by default.

**Value**

An environment containing a `"swStream"` object named "stream" with a header for the Rnw file and the content of a stylefile.

**Author(s)**

Markus Bonsch, Jan Philipp Dietrich

**See Also**

`"swStream"`, `swclose`, `swlatex`, `swR`, `swtable`, `swfigure`

**Examples**

```
## Not run:
test<-swopen()
str(test)

testtwo<-swopen(outfile="test.pdf")
str(testtwo)

## End(Not run)
```

---

swR

*swR*


---

**Description**

Function to write R code to a `"swStream"` object.

**Usage**

```
swR(stream, func, ..., option = "echo=FALSE")
```

**Arguments**

<code>stream</code>	The <code>swStream</code> object to be modified.
<code>func</code>	The R command, that shall be executed. Can be specified as a string for back compatibility
<code>...</code>	Additional parameters passed to the function.
<code>option</code>	Formatting options.

**Details**

Method designed to write the output of R commands to a `swStream` object, taking care that it is correctly embedded. As `func` argument, you can pass either the function itself or its name as a string. User defined functions will only work with option one, two is only for back compatibility.

**Value**

No return value.

**Author(s)**

Markus Bonsch

**See Also**

["swStream"](#), [swopen](#), [swclose](#), [swlatex](#), [swtable](#), [swfigure](#)

**Examples**

```
## Not run:
test<-swopen(outfile="test.pdf")
swR(test,print,ls)
swR(test,print,"bla_blubb")
x<-c(1,2,3)
swR(test,print,paste(x,"bla"))
swclose(test)
# Only for back compatibility
swR(test,"print","bla_blubb")

## End(Not run)
```

---

swStream-class

*Class "swStream" ~~~*

---

**Description**

The swStream class provides an interface to the Sweave method and allows for easy creation of pdf's from R output.

**Details**

The Sweave method is an interface between R and LaTeX. It processes .Rnw files, that can contain LaTeX code as well as R code into proper .tex files, replacing the R commands by their output. See <http://www.stat.uni-muenchen.de/~leisch/Sweave/> for details. An additional style file is needed to compile the .tex file into a pdf.

**Objects from the Class**

Objects can be created by calls of the form `new("swStream", name, folder, content, Sweave.sty, arguments, functions, auxfiles, envir)`.

**Author(s)**

Markus Bonsch

**See Also**[swopen](#), [swclose](#), [swlatex](#), [swR](#), [swtable](#), [swfigure](#)**Examples**

```
## Not run:  
showClass("swStream")  
  
## End(Not run)
```

---

`swtable`*swtable*

---

**Description**

Function to add an R object to a "swStream" object.

**Usage**

```
swtable(  
  stream,  
  x,  
  caption = NULL,  
  label = NULL,  
  transpose = FALSE,  
  digits = NULL,  
  vert.lines = 1,  
  hor.lines = 1,  
  align = "c",  
  display = NULL,  
  colsplit = NULL,  
  ...  
)
```

**Arguments**

<code>stream</code>	The swStream object to be modified.
<code>x</code>	An array or something that can be converted to an array, that shall be shown as a table. X should only contain 2 dimensions with more than 1 element, otherwise it cannot be plotted as a matrix.
<code>caption</code>	Description to be displayed in the pdf.
<code>label</code>	Label for the tex file for referencing.

<code>transpose</code>	Should the matrix be transposed before it is plotted?
<code>digits</code>	How many digits shall be shown for each number? Either one number or <code>ncol()+1</code> numbers for each column separately.
<code>vert.lines</code>	1 for vertical lines between the columns, 0 for no vertical lines. If you want lines only somewhere, set this to 0 and use <code>align</code> .
<code>hor.lines</code>	1 for horizontal lines between the rows, 0 for no horizontal lines. A vector of length equal to <code>nrow(x)+2</code> (for line above first row also) with 1 and 0 indicates to put lines wherever a one is mentioned, others will stay without lines. A vector of numbers between -1 and " <code>nrow(x)</code> ", inclusive, indicating the rows after which a horizontal line should appear.
<code>align</code>	Alignment of the table content. You can specify a single character: "c" for centered, "l" for left, "r" for right. If you want different alignments for different columns, specify a vector of length equal to the table columns plus one (for the row names) with the alignment for each column. If you want vertical lines only between some columns or around the table, set <code>vert.lines</code> to 0 and add "l" to the alignment vector, where you want to have vertical lines.
<code>display</code>	How shall the content be displayed? Use "d" (for integers), "f", "e", "E", "g", "G", "fg" (for reals), or "s" (for strings).
<code>colsplit</code>	Number of columns after which the table is split into two (Integer). Table will not be splitted up if set to NULL.
<code>...</code>	Further options passed to <code>print.xtable</code> .

### Details

This method provides the possibility to display the content of an array-like object in a table. It has to be specified, which two dimensions should be shown by choosing them before the object is sent to the function. The method is built on the `xtable` method. The table is then created with the `print.xtable` method, that takes all kind of arguments like placement etc. See that manuals for more information

### Value

No return value.

### Author(s)

Markus Bonsch, Jan Philipp Dietrich

### See Also

["swStream"](#), [swopen](#), [swclose](#), [swlatex](#), [swR](#), [swfigure](#)

### Examples

```
## Not run:
sw <- swopen(outfile="test.pdf")
a <- array(1:45,c(5,2,3),dimnames=list(paste0("a",1:5),paste0("b",1:2),paste0("c",1:3)))
print(a)
```

```
swtable(sw, a[,1], "test 1")
swtable(sw, a[,1], "test 2")
swtable(sw, a[,1], "transpose test", transpose=TRUE)
swtable(sw, a[,1], "colsplit test", transpose=TRUE, colsplit=2)
swclose(sw)

## End(Not run)
```

# Index

## \* **classes**

swStream-class, 8

lusweavedata, 2

swclose, 2, 5, 7–10

swfigure, 3, 4, 5, 7–10

swlatex, 3, 5, 5, 7–10

swopen, 3, 5, 6, 8–10

swR, 3, 5, 7, 7, 9, 10

swStream, 2–5, 7–10

swStream-class, 8

swtable, 3, 5, 7–9, 9