Instructions for Authors using LaTeX

by The R Journal Editors

Abstract While *The R Journal* strongly prefers submissions using Rmarkdown via the template in the `rjtools` package, we also allow authors to submit their articles as LaTeX documents. Note that such submissions may be processed more slowly than Rmarkdown submissions. Here we provide such authors with information for preparing LaTeX submissions to the journal.

Preparing a submission

The following files provide a template for preparing an article for submission to *The R Journal*:

LaTeX style file: 'RJournal.sty'.

Master LaTeX file: 'RJwrapper.tex'. This includes the file 'RJtemplate.tex', which is not itself a complete LaTeX document (it has no \begin{document} or \end{document}).

Article template: 'RJtemplate.tex'.

Bibliography template: 'RJreferences.bib'.

The steps involved in preparing an article for submission to *The R Journal* are as follows:

- Download 'RJwrapper.tex', 'RJtemplate.tex', and 'RJournal.sty' from https://github.com/rjournal/share

- Rename 'RJtemplate.tex' to a unique file name ('filename.tex', e.g. 'smith-jones.tex'), for example using the authors' last or family names in lower case separated by hyphens, or the corresponding author's last or family name. Replace its contents with the contents of your article.

- Create a minimal 'filename.bib' BibTeX file with only the entries you need, without unnecessary fields such as abstracts, and add \bibliography{filename} at the end of 'filename.tex', where filename is the same file name created above.

- Modify 'RJwrapper.tex' to include 'filename.tex' rather than 'RJtemplate.tex'. Include any strictly essential LaTeX \usepackage commands in the modified 'RJwrapper.tex'.

- Run `tools::texi2pdf` on 'RJwrapper.tex' to produce 'RJwrapper.pdf', using `clean=FALSE` to help in debugging if necessary.

- Iterate until 'RJwrapper.pdf' looks right.

- Then submit the following files to the Editor-in-Chief:

  - If the submission is of the "add-on packages" type, a motivating letter explaining how you meet our requirements.

  - The modified 'RJwrapper.tex'

  - 'RJwrapper.pdf'

  - 'filename.tex'

  - 'filename.bib'

  - all necessary figure files (only PDF or PNG files are accepted)

  - an R script ('filename.R' using the same file name as that created above) permitting the reproduction of examples in your submission and small data files — use built-in data sets where sensible, see below.

  - Do not include 'RJournal.sty' or style files for other latex packages needed by your article.

- You should have only one '.bib' file, and only two '.tex' files, one of which is 'RJwrapper.tex'.

Article length: The *R Journal* has no page limit. However, there is a tendency for longer papers to be subject to longer reviewing time, and excessive length may reduce your article's readership, should it be published. If possible, try to limit your article's length to, say, 8–10 pages, excluding figures and bibliography

Reproducible research

The results presented in figures and tables should be reproducible: either the R code to generate the result should be included in a code listing in the article, or a separate script file that generates the results should be submitted with the article. Articles that include extensive code listings should also provide a script file to help reviewers step through the code without retyping it.

Note that reproducibility requires that the author provide any datasets used in the examples. If this would be infeasible, due to data privacy or data volume considerations, please do not use such datasets as examples.

Language

Articles in *The R Journal* are written in English. We accept consistent British and American spelling along with other national variations. We encourage authors for whom English is not their first language to have their papers edited by a competent copy-editor. We encourage all authors to conform to accepted norms of grammar and style, and to avoid sexist language, such as the use of 'he' for individuals of indefinite gender.

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References and attribution

The R Journal follows customary academic practice in requiring that text in submissions and code and text in software be properly attributed. Quoted text must be attributed correctly and included in references; plagiarism and self-plagiarism will lead to rejection of submissions.

Marking text

Please use as *few* LaTeX packages as possible. The template already includes several commonly-used packages such as 'amsmath', 'booktabs', 'tikz', etc. Do not use your own styles, fonts, or syntax colouring. In particular, *do not define your own macros*.

The LaTeX style file 'RJournal.sty' provides some useful commands for marking up words and phrases related to software (as inspired by Texinfo). Please use these commands and the other mark-up facilities described in this section rather than attempting to format output and other elements visually. Unless it is absolutely necessary, please refrain from introducing additional idiosyncratic mark-up—for example, for programming languages.

The commands provided are:

\code{*sample-code*} indicates text that is a literal example of a piece of a program. For example, \code{rows <- nrow(X)} is typeset as rows <-nrow(X). The \code command

should also be used for keyboard input and the names of objects, functions and arguments. Class names should be quoted; for example \code{"lm"} is typeset as "lm". This is a regular command so special latex characters like _ and \ will need to be escaped.

\samp{*text*} indicates text that is a literal example of a sequence of characters. It should be used whenever parts of inline code could be confused with text, for example \samp{R CMD check} is typeset as 'R CMD check' and e.g. \samp{...} would give '...'.

\file{*file-name*} indicates the name of a file. For example, \file{RJwrapper.tex} is typeset as 'RJwrapper.tex'.

\dfn{*term*} indicates the introductory or defining use of a term. For example, \dfn{environment} is typeset as *environment*.

We also provide the following markup:

\strong emphasizes text more strongly than \emph. For example, \strong{Note:} is typeset as **Note:**.

\pkg indicates an R package. For example, \pkg{MASS} is typeset as **MASS**.

\CRANpkg indicates an R package on CRAN, and includes a hyper-link to the corresponding web page. For example, \CRANpkg{Rcpp} is typeset as **Rcpp**. Such packages should also be cited, for example by using the output of toBibtex(citation("Rcpp",auto=TRUE)), and considering adding the output of toBibtex(citation("Rcpp")).

\BIOpkg indicates a Bioconductor package, and includes a hyper-link to the corresponding page on the Bioconductor web site. For example, \BIOpkg{affy} is typeset as **affy**. Please also cite Bioconductor packages in the bibliography.

\ctv indicates a CRAN Task View, and includes a hyper-link to the corresponding page on CRAN. For example, \ctv{Optimization} is typeset as *Optimization*.

\url indicates a URL. For example, \url{https://cran.r-project.org/} is typeset as https://cran.r-project.org/.

Note that no markup is necessary to typeset R. Likewise, no markup should be used to typeset the names of external software. In particular, the \pkg command is reserved for R packages.

Examples

Include examples with the verbatim-like example environment. The text is printed in a fixed-width font, and indented but not filled.

If you want to intermingle code and latex, you can use the example* environment, which is a wrapper for altt.

```
# This is some example code. Please make sure to wrap lines to around 80
# characters so that they fit nicely within the body of the text.
#
# Use indentation and spacing to improve the readability of code
# listings where possible, e.g. put spaces after commas and around
# equals signs.
#
# For example, don't do:
f <- function(y, debug=FALSE) {
stopifnot(is.numeric(y) && length(y) == 1)
if (y<0 && debug)
message("Y is negative")
invisible(y)
}

# Instead do:
```

```
f <- function(y, debug = FALSE) {
  stopifnot(is.numeric(y) && length(y) == 1)
  if (y < 0 && debug) {
    message("Y is negative")
  }
  invisible(y)
}
```

Sectioning, titles, and abstract

Use only \section and \subsection commands, not \section* or \subsection*. Place the first section command immediately after the abstract.

The title of the article should be set with initial capitals, as in title{Drawing Diagrams with R}. Only the initial word of section and subsection titles should be capitalized; for example, \section{Starting at the end}.

If the title includes a package name, the name should be formatted with the \pkg command. This ensures that the package name is correctly typeset when it appears in the Table of Contents of *The R Journal*. Note that \pkg is the only markup that should be used inside a title.

Every article should include an abstract of no more than 150 words. The abstract is entered with the \abstract command, and should appear immediately after \maketitle at the beginning of the article. The abstract may contain references but should not contain mathematical markup.

Author information

Authors' names only should be given at the beginning of the article, following the title, using the \author command. The list of authors should begin with the word "by". All other information is given in the 'signature block' at the end of the article (see immediately below). For example, \author{by Ross Ihaka and Robert Gentleman}.

The article should end with a signature block giving contact information for each author, which may contain an ORCiD iD. For example

```
\address{Paul Murrell\\
  Department of Statistics\\
  The University of Auckland\\
  New Zealand\\
  ORCiD: 0000-0002-3224-8858\\
  \email{paul@stat.auckland.ac.nz}}
```

Mathematics

The R Journal does not prescribe specific LaTeX mark-up for mathematics: Use mark-up that is conventional in your field. We do, however, encourage authors to follow sound LaTeX practices.

- For example, use proper mathematical operators: Do not write log(x), which will be typeset as $log(x)$, but rather \log(x), which will appear as $\log(x)$.

- Similarly, use \left and \right with delimiters in mathematical expressions in preference to bare delimiters: Do not write

  ```
  \sum_{i=1}^{n}(X_{i}^{\prime} -
    \overline{X}^{\prime})^2
  ```

  which will be typeset as $\sum_{1=1}^{n}(X_i' - \overline{X}')^2$, but rather

  ```
  \sum_{i=1}^{n}\left(X_{i}^{\prime} -
    \overline{X}^{\prime}\right)^2
  ```

	Left	Right
Up	1	2
Down	3	4

Table 1: A simple table with booktabs formatting.

which will appear as $\sum_{i=1}^{n} \left(X_i' - \overline{X}' \right)^2$.

Try to stick to symbols from amssymb and avoid alternative symbol fonts.

Figures and tables

Horizontal lines in tables should use commands from the booktabs package, i.e. \toprule for the top of the table, \bottomrule for the bottom of the table, and \midrule for any horizontal lines within the table (see Table 1).

Figures should be submitted as PDF or PNG format files; no other formats are accepted.

Variants of the figure and table environments that span the full width of the document are avialable: these are called widefigure and widetable. Figures 1 and 2 show the difference between the regular and wide figure variants.

Figure 1: This figure should be the same width as the text.

Figure 2: This figure should span the page, but the caption should be the same width as the text. Use this environment sparingly

For structuring a figure into subfigures, use the subcaption package.

References

The standard way to produce citations for *The R Journal* is via the natbib `\citep` and `\citet` commands (and their relatives) and a '.bib' file that contains the references in BIBTEX format[1]. The citation in the first paragraph of this style guide is of the form `\citep{ihaka:1996}`. Figure 3 shows an example file called 'example.bib' which contains a single reference. Note that inclusion of the DOI bibtex field is desirable whenever a referenced item has a DOI; recent practice requires that `url = {https://doi.org/...}` be used in preference to `doi = {...}`, to use secure redirection. Do not use `url` fields to link to publishers if a DOI is available; all links for entries with DOIs must be through the DOI key formatted as `url = {https://doi.org/<DOI key>}`.

A bibliography is produced from 'example.bib' by placing the following line in 'filename.tex':

`\bibliography{filename}`

and running `pdflatex` then `bibtex` on the file 'filename.tex', then running `pdflatex` as many times as necessary until LaTeX stops complaining about undefined citations. In R, you can use `tools::texi2pdf()` to automate this process, as this is what is used in production.

It is not necessary to include the `natbib` package or a bibliography style: these are included in the RJournal style file.

```
@ARTICLE{R:Ihaka+Gentleman:1996,
   AUTHOR = {Ross Ihaka and Robert Gentleman},
   TITLE = {R: A Language for Data Analysis and Graphics},
   JOURNAL = {Journal of Computational and Graphical Statistics},
   YEAR = 1996,
   VOLUME = 5,
   NUMBER = 3,
   PAGES = {299--314},
   URL = {https://doi.org/10.1080/10618600.1996.10474713}
}
```

Figure 3: The contents of a file called 'example.bib'.

BibTeX will ignore capitalization in titles, unless words are protected inside curly braces, e.g. R will appear as "r", whereas {R} will appear correctly as "R". Ensure that proper names in titles are protected. Similarly, in the author field, corporate authors will not appear correctly unless protected, e.g. a bibtex entry with

`AUTHOR = {The R Journal Editors}`

will appear in the bibliography as "TRJ Editors" and should be protected with double braces:

`AUTHOR = {{The R Journal Editors}}`

Including the DOI of the reference is very desirable and may become compulsory soon. It is good practice to cite CRAN and Bioconductor packages mentioned in the article in the bibliography using `toBibtex(citation("pkg",auto=TRUE))` to produce the required entry; works in `toBibtex(citation("pkg"))` may be added.

The BibTeX file should be minimal, that is should not numerous entries not cited in the submission, and the included entries should not contain unnecessary fields.

Citing packages

The first time a package is cited in the text, excluding the abstract, it should be followed by a formal citation, such as the one generated by the `citation()` function in R. The first citation of a CRAN package should use `\CRANpkg` and the first citation of a Bioconductor package should use `\BIOpkg`. Further citations use `\pkg` and need not be followed by a citation.

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[1]We use the **natbib** package for citations.

The BibTeX entry for an R package should not use the \pkg command to format the package name in the TITLE field, but should be produced using toBibtex(citation("pkg",auto=TRUE)); works in toBibtex(citation("pkg")) may be added.

Citing R

Articles in *The R Journal* do not include a citation of R itself.

Acknowledgment

Parts of this style guide were adapted from documentation originally prepared by Kurt Hornik and Friedrich Leisch for the *R Journal* LaTeX style file.

Changelog

- v0.5, 2008/09/04 — Copy and edit Rnews.dtx.
- v0.6, 2009/05/05 — Require **tikz** for decoration of contents page. Require **amsmath**, **pslatex**, **palatino**, **mathpazo**. Define hyperref colors. (Re)define \sectionhead, \abstract. Simplify equation numbering. Restyled colophon. Defined Sin, Sout and Schunk enrionments. \acronym non longer changes text.
- v0.7, 2010/07/01 – Used \phantomsection in chapter head so that hyperlinks in toc jump to place above not below article title. Added \review command to set up head for book reviews - treated as hybrid of chapter and section. Removed markup for mathematics as not recommended for use. Changed Rnews references to RJournal references. Removed \startRnews as unused.
- v0.8, 2010/12/29 — Added |table| environment for one-column tables.
- v0.9, 2012/01/13 — Disabled ligatures in \code.
- v0.10, 2013/01/08 — Added back-links from bibliography
- v0.11, 2013/01/11 — Dropped two-column format. Dropped custom figure and table environments. Use placeins package to keep figures and tables (now floating) under control.
- v0.12, 2013/04/11 — Tweaks to one column format. Use inconsolata for code. Switch example to verbatim; add example* for alltt. Slightly increased spacing between lines and paragraphs. Don't use alternating headers. Support for wide figures (widefigure) and tables (widetable)
- v0.13 2013/08/27 — Added \BIOpkg for Bioconductor packages.
- v0.14 2017/01/09 — Revised Introduction to adapt classes of solicited submissions to changing needs and high submission volumes of single package articles. Added hooks for licence and plagiarism.
- v0.15 2017/04/26 — Added explicit need for citation of packages also in the bibliography.
- v0.16 2017/08/14 — Clarified file naming conventions for submission.
- v0.16 2019/08/26 — Noted importance of strictly following the above rules, and stated there must be only one '.bib' file, and only one '.tex' file other than 'RJwrapper.tex'.
- v0.17 2019/09/07 — Added a comment about article length.
- v0.17 2019/09/11 — Added a comment about need to provide datasets.
- v0.18 2025/05/21 — Removed general information about the journal, and made this document only about LaTeX submissions.