

A guide to editing T_EX articles for Royal Society journals

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A brief guide is presented for preparing articles for submission to the Royal Society Series A journals.

Keywords: Place keywords here

1. Introduction

This guide is intended to help authors preparing articles for submission to either of the two A-side journals, *Proceedings* and *Philosophical Transactions*. The guide outlines the basic structure of the L^AT_EX file, and also provides some of the elements of house style and preferred solutions to frequently encountered typographical problems. It is *not* intended as a introduction to the T_EX typesetting system; authors should consult Lamport and Knuth for this.

2. The preamble

Every L^AT_EX file begins with a `\documentclass` command:

```
\documentclass{rspublic}
```

Local macro definitions may be included next, before the `\begin{document}` command, although it is advisable to keep all such definitions to a minimum for simplicity.

3. The title page

Every title page displays the article's full title, its authors and their full, postal addresses, and the abstract. There may also be a present address, if different to the place where the work was done.

After the preamble the general form is:

```
\begin{document}
\title[Short title]{Full title}
\author[Short author names]{Full author names}
\affiliation{Full postal addresses of all authors}
\label{firstpage}
\maketitle
```

- The short title, which is usually less than around 40 characters, is used as the recto running head.

- The short author names comprise initials and surnames, or, if these total more than around 40 characters, the first author followed by **and others**. This argument is used as the verso running head.
- The full author names, if given, are retained on the title page.
- Give the name of any country in English (e.g. Republic of Ireland not Eire).
- The only allowed abbreviations are USA and UK (don't use Scotland, Wales, etc.). Other examples are: People's Republic of China; Taiwan, Republic of China.
- There is no comma between town and postcode, or between state and zip code.
- Abbreviate American states, i.e. CA for California, etc.
- If authors have different addresses, then superscript arabic numerals are used as tags.
- Only present addresses appear as footnotes to authors on the title page. References to grants received, etc., should appear in the acknowledgements.

The abstract follows immediately after the affiliation, and appears within the `abstract` environment:

```
\label{firstpage}
\maketitle
\begin{abstract}{Keywords}
:
\end{abstract}
```

Note that the environment takes as an argument the keywords of the paper.

4. Structure of the remaining article

After the title page and abstract there is usually an introduction, and several more sections before the list of references. There may also be an acknowledgements and one or more appendixes. The most general structure is:

```
\section{}
:
\subsection{}
:
\subsubsection{}
:
\begin{acknowledgements}
:
\end{acknowledgements}
:
\appendix{}
:
```

```

\subsection{}
:
\subsubsection{}
:
\begin{thebibliography}
:
\end{thebibliography}
\label{lastpage}
\end{document}

```

Some of these elements are optional and some will usually be repeated; for example, almost every paper comprises several sections, but relatively few contain an appendix.

5. Floating bodies: figures and tables

The `figure` and `table` environments are implemented as described in the \LaTeX manual to provide consecutively numbered floating inserts.

(a) *Figures*

The usual figure arrangement is:

```

\begin{figure}
<PostScript inclusion special>
\caption{}
\end{figure}

```

Authors who cannot include PostScript figures should omit the inclusion line.

(b) *Tables*

The basic structure of all tables is:

```

\begin{table}
\caption{<title>}
\longcaption{<long description>}
\begin{tabular}{<column alignments>}
\hline
<headings>\
\hline
<body of table>
\hline
\end{tabular}
\end{table}

```

- The title should be short, like that of a section heading; there is no full stop at the end. Any long description should be separated from the title and included in the `\longcaption` command, which sets the argument in parentheses and as a paragraph below the title.
- Headings are usually centred, and are not capitalized.

6. Theorem and proof environments

Theorem-like environments—including theorem, lemma, corollary, and proposition—should not be redefined, but used as follows:

```
\begin{theorem/lemma/corollary/proposition}
:
\end{theorem/lemma/corollary/proposition}
```

Theorem 6.1. *Let E be an orbifold C^* -bundle over the closed spin^c orbifold Q and let D be the generalized Dirac operator on Q with coefficients in E .*

The proof should be included within the following environment:

```
\begin{proof}
:
\end{proof}
```

Proof. Use $K_\lambda \geq S_\lambda$ to translate combinators into λ -terms. For the converse, translate $\lambda x \dots$ by $[x \leq y] \dots$ and use induction and the lemma. \square

7. Elements of mathematical editing

The following commonly used macros are defined at the end of `rspublic.cls` and should be used in math mode whenever the entity in parentheses is required:

- `\rd` (differential)
- `\re` (exponential)
- `\ri` (imaginary number, $i = \sqrt{-1}$)
- `\Real` (real part)
- `\Imag` (imaginary part)
- `\sgn` (sign)
- `\const` (constant)

For example, $e^{-ikr \cos s} ds$.

(a) Equations

All equation environments should be compatible with those defined by the `amsmath` package, which is a required package for the class file.

8. Units and symbols for units

The International System of Units (SI) is used. Six base units are given in table 1; two supplementary units are given in table 2; and fifteen derived units are given in table 3.

Table 1. *Names and symbols for the SI base units*

physical quantity	name	symbol
length	metre	m
mass	kilogram	kg
time	second	s
electric current	ampere	A
thermodynamic temperature	kelvin	K
amount of substance	mole	mol

Table 2. *Names and symbols for the SI supplementary units*

physical quantity	name	symbol
plane angle	radian	rad
solid angle	steradian	sr

Table 3. *Names and symbols for SI derived units*

physical quantity	name	symbol	definition
energy	joule	J	$\text{m}^2 \text{kg s}^{-2}$
force	newton	N	m kg s^{-2}
pressure	pascal	Pa	$\text{m}^{-1} \text{kg s}^{-2}$
power	watt	W	$\text{m}^2 \text{kg s}^{-3}$
electric charge	coulomb	C	A s
electric potential difference	volt	V	$\text{m}^2 \text{kg s}^{-3} \text{A}^{-1}$
electric resistance	ohm	Ω	$\text{m}^2 \text{kg s}^{-3} \text{A}^{-2}$
electric conductance	siemens	S	$\text{m}^{-2} \text{kg}^{-1} \text{s}^3 \text{A}^2$
electric capacitance	farad	F	$\text{m}^{-2} \text{kg}^{-1} \text{s}^4 \text{A}^2$
magnetic flux	weber	Wb	$\text{m}^2 \text{kg s}^{-2} \text{A}^{-1}$
inductance	henry	H	$\text{m}^2 \text{kg s}^{-2} \text{A}^{-2}$
magnetic flux density	tesla	T	$\text{kg s}^{-2} \text{A}^{-1}$
frequency	hertz	Hz	s^{-1}
activity	becquerel	Bq	s^{-1}
absorbed dose	gray	Gy	J kg^{-1}

- Symbols for units should be in roman type in all contexts and separated from each other and from the numeral by a fixed thin space, given by the macro `\3`.
- SI prefixes, given in table 4, precede the SI unit: ‘mg’, ‘ns’, ‘ μA ’, ‘MHz’, ‘kPa’. Note there is no space separating the prefix from the unit.
- The sloping letter μ for the prefix ‘micro-’ will be replaced by the upright letter during typesetting.
- Note the preferred spelling of certain units: ‘metre’, ‘millimetre’, ‘gram’, ‘kilogram’, etc.

Table 4. *SI prefixes*

multiple	prefix	symbol	multiple	prefix	symbol
10^{-1}	deci	d	10	deca	da
10^{-2}	centi	c	10^2	hecto	h
10^{-3}	milli	m	10^3	kilo	k
10^{-6}	micro	μ	10^6	mega	M
10^{-9}	nano	n	10^9	giga	G
10^{-12}	pico	p	10^{12}	tera	T
10^{-15}	femto	f	10^{15}	peta	P
10^{-18}	atto	a	10^{18}	exa	E

9. Elements of copy-editing

(a) *Spelling, capitalization and abbreviations*

- Use English spelling throughout (follow the *OED* or *The Collins English Dictionary*): e.g.

ageing	analogue	analyse	behaviour
centre	centred	characterize	crystallize
favour	focused	focusing	formulas
generalize	modelled	modelling	neighbour
parametrize	polarize	realize	recognize
vapour	vaporize		

Note the common endings: *-ize* and *-yse* rather than *-ise* and *-yze*.

- Remove spurious capitalization; for example, in the text use ‘figure 1’, ‘table 2’, ‘equation (3.4)’, ‘theorem 5.6’, ‘preposition 7.8’, ‘the appendix’, i.e. no capitals (except, of course, when they start a sentence). But ‘Appendix A’, i.e. when a specific section is referenced. Also note that these words should always be given in full.
- Replace ‘section’ by the symbol (§), except when it begins a sentence. The fourth subsection in the third subsection in the second section is referenced by \S2§\,c\,§(iv) produces §2 c(iv).
- Use capitals for words derived from names—Cartesian, Gaussian, Hamiltonian, Abelian, etc.—except for the following: boson, fermion, ohmic, voltaic, coulombic.
- For trade names (e.g. Teflon) follow Chambers.
- Full caps should be used for all acronyms, which should be defined on first use (e.g. face-centred cubic (FCC)). Since the abstracts are published separately, this rule applies to both the abstracts and the main body of the text.
- Common abbreviations are: ‘cf.’, ‘e.g.’, ‘etc.’, ‘i.e.’ Note that ‘etc.’ is always preceded and followed by a comma except where it ends a sentence.

(b) Em rules and en rules

- A pair of em rules (or dashes) is used to indicate asides and parentheses, in a way similar to commas, but forming a more distinct break. (Commas are preferred for short parenthetical remarks.) No spaces should be put between the em rules and their associated asides.
- An en rule has the following uses:
 - to indicate a range of numbers, e.g. ‘20–100 keV’ (but note the expression, ‘from 20 to 100 keV’; avoid ‘from 20–100 keV’);
 - between interactions, e.g. photon–photon;
 - with log–log (often seen when describing the axes of a figure);
 - between linked names, e.g. Hartree–Fock.
- An en rule should not be used in ‘between 20–100 keV’; ‘between 20 and 100 keV’ is the preferred form.

(c) Miscellaneous details

- Dates are expressed in the form, ‘day month year’: e.g. 9 April 1995.
- The plural *data* is far more common than its singular form, and should always be treated as a plural, i.e. ‘data *are* . . .’ is correct while ‘data *is* . . .’ is incorrect. Some words, on the other hand, appear to be plural but are treated as singular: dynamics, statistics, mechanics.
- Single and not double quotes should be used.
- Retain, or put in if missing, the accents for proper names such as Schrödinger, Poincaré, etc.

10. References*(a) In the text*

- Two authors are always connected by an ampersand:
The work of Smith & Jones (1995) remains important in the field. . .
- And three or more authors are abbreviated as follows:
The work of Smith *et al.* (1995) remains important in the field. . .
The year always goes in parentheses, and immediately follows the authors. If the whole citation is parenthetical, then both authors and year are contained within parentheses, with no comma before the year:
Detailed studies (Smith & Jones 1995) show. . .
- Additional labelling is used to ensure unambiguous citation:
The work of Smith (1995*a*, *b*) . . .
Important results (Smith 1995*c*). . .

- Multiple citations within parentheses are separated by semicolons, except where the citation is to a work by the same author(s), when the years are separated by commas:

Detailed studies (Smith 1989; Smith & Jones 1994, 1995) show...

(b) *In the list*

- The list of references appears at the end of the article and is contained within the environment:

```
\begin{thebibliography}{  
:  
\end{thebibliography}
```

Each reference is begun with an `\item`, and all contain at least one name and a year:

```
Adams, H. D. 1979 ...  
Adams, H. D. 1980 ...  
Adams, H. D. & Brown, I. 1981 ...  
Adams, H. D. & Charles Jr, A. L. M. 1978 ...  
Adams, H. D., Charles Jr, A. L. M. & Brown, I. 1989 ... [1]  
Adams, H. D., Brown, I. & Charles Jr, A. L. M. 1990 ... [2]  
Brown, I. (ed.) 1989 ... [3]  
Brown, I. & Charles Jr, A. L. M. (eds) 1990 ... [4]  
Brown, I. & Charles Jr, A. L. M. 1991 ... [5]
```

- The list is alphabetical, except for works of three or more authors sharing the same initial author, which are arranged chronologically. The logic behind using chronological instead of alphabetical ordering in lines [1] and [2] is that the citations in the text only refer to the first author and the year ('Adams *et al.* 1989, 1990'), and not to the second and third authors.
- Each author's name comprises the surname followed by initials (spaced), with commas separating surnames and initials.
- The abbreviations for 'editor' and 'editors' are 'ed.' and 'eds', respectively, in lines [3] and [4].
- The abbreviation for 'Junior' is 'Jr', and is placed as in line [5].
- Note the lack of punctuation or parentheses around the year.
- If there are ten or more authors, then only the first author need be included:

Adams, H. D., *et al.* 1989 ...

- Labels 'a', 'b', etc., are used to ensure unambiguous citation:

Adams, H. D. 1989*a* ...

Adams, H. D. 1989*b* ...

The simplest coding is 1989\$a\$, etc.

This structure is common to all entries in the list. The remaining bibliographic details follow the year and can take a variety of forms.

(i) *Journals*

- The title of the article follows the year, is set in roman and lower case, and is ended with a full stop.
- The journal is abbreviated (see Appendix B) and set in italics.
- The volume is set in bold roman, followed by a comma and the page range, with the pages joined with an en-rule.

Pironneau, O. 1973 On optimum profiles in Stokes flow. *J. Fluid Mech.* **59**, 117–128.

- Some journals have an additional letter in their title; most of these precede the volume number, but the letters of two journals *follow* the volume number:

... *Phys. Rev.* B **59**, 117–128.

... *Proc. R. Soc. Lond.* A **59**, 117–128.

... *Physica* **59A**, 117–128.

... *Phys. Lett.* **59A**, 11 789–12 108.

Note that a thinspace \, separates the letter and volume number when the letter comes first, and is also used in five- or higher-digit numbers, e.g. 11 789.

(ii) *Books*

- The title of the book follows the year, is set in italics and lower case, and is ended with a full stop, except where there is a page, chapter, volume, or edition number.
- The place of publication and the publisher completes the entry.

Gakhov, F. D. 1966 *Boundary value problems*, ch. 3, pp. 45–47. Oxford: Pergamon Press.

Titchmarsh, E. C. 1986 *Introduction to the theory of Fourier integrals*, 3rd edn. New York: Chelsea.

- The title of a contribution to a multi-author work is set in roman and lower case, and ended with a full stop. This is followed by ‘In’ and the title of the work in italics and lower case, followed by the editor in parentheses and the page range.

Gakhov, F. D. 1966 Boundary value problems. In *Introduction to the theory of Fourier integrals* (ed. E. C. Titchmarsh), pp. 30–56, 3rd edn. New York: Chelsea.

- References to contributions to conference proceedings are dealt with in a similar way.

Kaplun, S. 1993 Low Reynolds number flow past a circular cylinder. In *Proc. Int. Conf. on Fluid Mechanics and Singular Perturbations, Tokyo, Japan, 12 October 1992*, pp. 67–85.

- Note that the conference title is in italics and retains the capitals, and includes the place and date.
- Monographs and named series:

Berry, M. V. 1986 Riemann's zeta function: a model for quantum chaos? In *Quantum chaos and statistical nuclear physics* (ed. T. H. Seligman & H. Nishioka). Springer Lecture Notes in Physics, no. 263, pp. 1–17.

Craik, A. D. D. 1985 *Wave interactions and fluid flows*. Monographs on mechanics and applied mathematics. Cambridge University Press.

(iii) *Reports, memoranda, preprints, theses, etc.*

- These are set as follows, using roman and lower case throughout for titles:

Kaplun, S. 1993 Low Reynolds number flow past a circular cylinder. Report no. 345-12, Department of Engineering, University of London.

Li, T. Y. & Yorke, J. A. 1978 Ergodic transformations from an interval into itself. Preprint, New York University.

Ogorzalek, M. J. 1993 Taming chaos. Ph.D. thesis, Imperial College, London.

Ott, E. 1993 Chaos in dynamical systems. D.Phil. thesis, Oxford University.

Saito, T. 1990 An approach toward higher-dimensional hysteresis chaos generators. Memorandum no. UCB/ERL M94/42, University of California at Berkeley, USA.

(c) *Miscellaneous*

- Translations are included in parentheses:

Zabolotskaya, E. A. 1970 *Akust. Zh.* (Transl. *Soviet Phys. Acoust.* **16**, 39–43.)

- Personal communications are *not* included in the list; the citation in the text is the only reference: (L. M. Pecora 1989, personal communication).
- Unpublished work is also *not* included in the list; the citation in the text is the only reference: (L. M. Pecora 1989, unpublished work).