

Instructions for ORiON's \LaTeX package*

Authors' identities suppressed: Blind refereeing copy

Abstract

The premise of this document is that the reader is familiar with the use of \LaTeX . The document provides prospective authors with general information regarding papers published in ORiON as well as specific instructions for the creation of articles for publication in ORiON using \LaTeX . This package, `ORIONafr.sty`, is compatible with $\LaTeX 2_\epsilon$. Instructions as well as an indication of standard procedures to be used are also provided.

Key words: Instructions, \LaTeX

1 Introduction

This document provides prospective authors with general information on as well as instructions for the creation of papers for publication in ORiON. To facilitate the electronic submission and formatting of papers, ORiON supports the use of \LaTeX . \LaTeX facilitates the creation of high quality documents of a uniform standard. It also simplifies the editing process and should reduce the amount of proof-reading required since errors should not occur during the formatting of documents. \LaTeX is also becoming the worldwide standard for the formatting of papers published in international journals.

The author(s) should only submit the \LaTeX source code when requested to do so by ORiON's business manager. The author(s) should ensure that the source code generates exactly the same document as was approved for publication. If this is not the case, all differences should be pointed out clearly to the business manager. When the source code is submitted, all related files such as figures and macros used in the generation of the paper should also be submitted. The first three characters of the filenames should be the same as the first three characters of the first author's surname. Filenames should be restricted to eight characters since ORiON uses the MS-Dos operating system for the processing of \LaTeX documents. Generic filenames such as `art.tex` or `art1.tex` should be avoided.

ORiON does not have the resources to keep track of different versions of a specific file. It is therefore very important that only the final version of the file be submitted to the business

*This document is funded by ORSSA.

manager. A copy of the final version of the paper in `.pdf` format will then be sent to the corresponding author for final proof-reading. This procedure is very important, even if no editorial changes are made to the paper, since errors may occur during the electronic transmission of the source code.

The ORiON package (macro), `ORIONeng.sty` must be used together with the article class (`article.cls`). The ORiON package, `ORIONeng.sty`, may not be changed. This package automatically typesets the paper in the required editorial format. No other macros that may affect the formatting of the document may be used. In addition to the package, there are eight files available on the ORSSA website. These are `ORiONine.tex` and `ORiONex.tex` together with their similarly named outputs in both `.ps` and `.pdf` formats. `ORiONine.tex` contains the source code for this document, while `ORiONex.tex` contains the source code for examples of certain entities in papers. The similarly named `.ps` and `.pdf` files contain the output of the document. The identities of the authors are not suppressed in the final version of the documents. The output for the final documents should be similar to `INSfine.pdf` and `ExFin.pdf`.

2 Commands for `ORiONeng.sty`

The source document for the creation of an English paper would start with the following instructions:

```
\documentclass[11pt,dvips]{article}
\usepackage{orioneng,epsfig}

\title{The title comes here.}
\author{The author\thanks{with his affiliation} \and another
author\thanks{with his affiliation}}
\shorttitle{A short title for the running heads comes here.}
\shortauthor{Only the authors initials and surnames come here
(for the running heads)}

\begin{document}
\oriontitle
\begin{Abstract} The abstract comes here. \end{Abstract}
\begin{keywords} The keywords come here. \end{keywords}

The rest of the article follows here.
\end{document}
```

The `\title{}` command may also contain a `\thanks{}` command similar to that in the `\author{}` command. Multiple authors within the `\author{}` command are separated by the `\and` command. Each of the authors may also have his/her own separate `\thanks{}` command.

The `\shorttitle{}` and `\shortauthor{}` commands are used to provide the contents of the running heads at the top of each page. Multiple authors are separated by an `\&`.

The title on the title page is created by the `\oriontitle` command. Summaries and keywords in the related environments should follow directly after this command. Afrikaans

papers should also contain an extended English summary, with keywords. The remainder of the document is then created using standard \LaTeX commands and instructions.

The stylesheet also contains a $\text{\bold{}}$ command which can be used to typeset symbols in bold type within the mathematics environment.

3 The math mode

One of the powerful attributes of \LaTeX is that all the numbering in a document is performed automatically. The format in which environments and entities are numbered may not be altered in additional packages or with commands within the document. References to equations and environments are handled in the same way as in a standard \LaTeX document.

3.1 Common mistakes

Authors often try to squeeze too much mathematics into one line. The use of matrices in a line of text is the most common example. The matrix, $\begin{bmatrix} 2 & 3 \\ 3 & 4 \\ 5 & 6 \end{bmatrix}$, for example, takes up too much vertical space and cannot be placed in a line of text as it causes unsightly spaces between the lines. All mathematics should be similar in size to the text when used in a line of text. Another common mistake is the use of $\sin(x)$, $\log y$ and other similar mathematical functions. Commands (for example \sin and \log) are available to typeset each of these functions in upright text within the math mode.

The commands < , > , \mid and \parallel are often used incorrectly instead of \langle , \rangle , \lvert and \| . Table 1 contains the correct and incorrect use of a number of commands.

Incorrect use		Correct use	
source code	output	source code	output
$\text{\log_n}(x)$	$\log_n(x)$	$\text{\log_n}(x)$	$\log_n(x)$
$\text{<}x,y\text{>}$	$\langle x, y \rangle$	$\text{\langle }x,y \text{\rangle}$	$\langle x, y \rangle$
$x\ll y$	$x \ll y$	$x \lll y$	$x \lll y$
$x < \text{\mid} y \text{\mid}$	$x < y $	$x < \ y\ $	$x < \ y\ $

Table 1: Correct use of mathematical commands

A more comprehensive set of examples for the typesetting of mathematics within the \LaTeX environment can be found in [2].

4 Text

It is sometimes necessary to use specialised fonts. The symbol for a set of real numbers is one example. Most of these symbols can be set using the AMSfonts set of symbols.

The standard `enumerate` and `itemize` environments can be used to list a number of items. The use of `-`, `--`, and `---` are easily confused. The single dash `-` [output: -] is used to separate composite words such as proof-reading. The double dashes `--` [output: –] is used to replace “to”, where boundaries are applicable, for example: 8 – 10 samples were taken. Three dashes `---` [output: —] are used to denote a sub sentence — such as this one — within a sentence.

Theorems and similar environments are already defined in the ORiON package. Standard definitions exist for the environments in Table 2 and can be activated using the `\begin{}` command and ended with the `\end{}` command.

<code>algorithm</code>	<code>axiom</code>	<code>corollary</code>
<code>definition</code>	<code>example</code>	<code>heuristic</code>
<code>lemma</code>	<code>proposition</code>	<code>theorem</code>

Table 2: Pre-defined environments in `ORiONeng.sty`

The source code for the use of these environments is as follows:

```
\begin{definition}
The definition comes here. It can even contain references, for
example \S\ref{a1}. It can also contain mathematics, for example
$$
x_i = f^{-1}(y).
$$
\end{definition}
```

The output for this source code follows below.

Definition 1 *The definition comes here. It can even contain references, for example §3.1. It can also contain mathematics, for example*

$$x_i = f^{-1}(y).$$

4.1 Common grammar errors

Avoid the use of constructions such as “don’t” and “isn’t”. Type the words out in full, for example: “The vector \underline{x}_j is not a solution to the system of equations.”

Put a comma after the abbreviations “i.e.” and “e.g.”, for example: “Let x be an integer, e.g., 5.”

Avoid sentences that contain more than one thought in a single phrase. Separate the two thoughts by two sentences, a semicolon. It can also be joined by an “and”. It is wrong to write “Let α be an finite set, β denote all the subsets of length 2 over α ”. The right way to put it is “Let α be an finite set, and let β denote all the subsets of length 2 over α ”.

Citation numbers in text should not be treated as objects. It should be treated as footnotes. In stead of writing “In [1] it is showed that...” you can write “Hamilton [1] showed that...”.

Colons should not be used immediately after verbs. The wrong use of colons: The final equation is:

$$x = y.$$

5 Figures and tables

All tables are set within the `table` environment. Please note that tables must be designed in such a way that they do not extend beyond the margins of the document. \LaTeX is notorious for its flexible placement of tables and figures. Please ensure that figures and tables are not moved to within or after the reference list. All figures and tables included in the document should be referenced in the text.

ORiON supports the use of `epsfig` to include figures in POSTSCRIPT format in documents. When the final version of the paper is submitted to ORiON's business manager, all figures should be submitted as separate `.ps` files. All filenames should start with the first three letters of the first author's surname. Generic filenames such as `fig1.ps` should be avoided. Instructions for the use of the `epsfig` package may be obtained from any CTAN mirror site (for example <http://archive.sun.ac.za>). Hard copies of all figures should also be submitted to the business manager. Please ensure that lines in figures are thick enough. When figures are printed using high quality printers, substantial deterioration occurs in the thickness of lines.

If figures are only available in formats other than `.ps`, these files may also be submitted to the business manager together with the \LaTeX source code. These figures will then be converted to the POSTSCRIPT format for inclusion in the paper.

The source code below can be used to include a figure in the `onor.ps` file using the `epsfig` package. With this command the figure will automatically be sized to be 65mm wide.

```
\begin{figure}[thb]
\begin{center}
\epsfig{file=onor.ps,width=65mm}
\end{center}
\caption{Example of a figure.}
\label{onor:f1}
\end{figure}
```

6 References

References in the text are done using the `\cite{}` command. See [2] for an example of the use of this command. Lamport [2] provides other useful examples.

ORiON uses the following format for the listing of references. (Only the most common types of references are listed.)

An article: (See [3] for an example.)

`\bibitem{reference}{\sc Surname and initials}, year, {\em Title of article}, Journal, volume(number), pages.`

A book: (See [5] for an example.)

`\bibitem{reference}{\sc Surname and initials}, year, {\em Title of the book}, edition, publisher, place where published.`

A website: (See [4] for an example.)

`\bibitem{onsa}{\sc Surname and initials of the author or the name of the institution publishing the information on the web}, date of last update, ‘‘Title of the document" {\em Title of the webpage}, [Online (if available online)], [Cited: Date of last visit], Available: The complete web address (URL).`

Some of the information required above, such as the date of last revision, may not be available in which case this information should simply be omitted.

References

- [1] DOOB M, 1996, *TEX starting from 1*, Springer-Verlag, New York.
- [2] LAMPORT L, 1994, *L^AT_EX A document preparation system: User's guide and reference manual*, Addison-Wesley Longman Inc., Reading, Massachusetts.
- [3] SVESTKA J & HUCKFELDT J, 1973, *Computational experience with an M-salesman traveling salesman algorithm*, Management Science, Vol. 15(7), 790–799.
- [4] VISAGIE SE, 2004, ‘‘Instructions for ORiON's L^AT_EX package’’, *ORiON: The Journal of ORSSA*, [Online], [Cited: 10 February 2004], Available: <http://www.orssa.org.za>.
- [5] WINSTON WL, 1994, *Operations Research Applications and Algorithms*, third edition, Duxbury Press, Belmont, California.