

Documentation of the L<sup>A</sup>T<sub>E</sub>X class

# saparticle.cls

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## Abstract

This document describes how to use `saparticle.cls`, a L<sup>A</sup>T<sub>E</sub>X document class for the typesetting of the articles for the “Sapienza University Press”. The official web page of `saparticle` is <http://www.editricesapienza.it/>.

## Contents

<b>1</b>	<b>Introduction to saparticle</b>	<b>2</b>	<b>5</b>	<b>Example</b>	<b>4</b>
<b>2</b>	<b>Requirements and installation</b>	<b>2</b>	<b>6</b>	<b>Stylistic recommendations</b>	<b>6</b>
<b>3</b>	<b>Features and commands</b>	<b>2</b>	<b>A</b>	<b>A very brief introduction to the T<sub>E</sub>X world</b>	<b>11</b>
<b>4</b>	<b>Instructions for authors</b>	<b>4</b>			

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# 1 Introduction to saparticle

“Casa Editrice Università La Sapienza” is the university press of Sapienza – University of Rome. Sapienza University Press encourages authors to submit their works as **camera ready**. In order to guarantee a high typographical quality, authors are requested to use the Sapienza templates, available for Microsoft Word, and LaTeX.

This document is the manual of the LaTeX class `saparticle`, which is the template of the Sapienza University Press for typesetting articles in LaTeX. `Saparticle` is released under the terms of the latest version of the [L<sup>A</sup>T<sub>E</sub>X Project Public License](#). Typically this class is used to compose a paper to be included in a book of conference proceedings. For this purpose all the papers in pdf format are gathered by the editor(s) in order to assemble a single book (if you are an editor see the L<sup>A</sup>T<sub>E</sub>X class `sapproc`). On the other hand, if you need the L<sup>A</sup>T<sub>E</sub>X class for typesetting book, see `sapbook`.

## 2 Requirements and installation

The simplest way to install `saparticle` is by the package manager of your T<sub>E</sub>X distribution (T<sub>E</sub>X Live or MiK<sub>T</sub><sub>E</sub>X) (**not yet available**). Alternatively you can download the `saparticle.zip` archive from <http://www.editricesapienza.it/> and copy the `saparticle.cls` file in your working directory. The other files in the archive are not necessary.

`Sapbook` needs the following packages: `ifxetex`, `xltxtra`, `amsmath`, `fontspec`, `unicode-math`, `microtype`, `fontenc`, `lmodern`, `textcomp`, `mathpazo`, `tgpagella`, `geometry`, `caption`, `graphicx`, `booktabs`, `titlesec`, `quoting`.

## 3 Features and commands

A L<sup>A</sup>T<sub>E</sub>X document based on `saparticle` can be compiled only by the commands `pdflatex` and `xelatex`. Other “compilers” are not supported.

`Saparticle` supports two main languages for the documents: Italian and English. English is the default. Switching between them is left to the author using the common L<sup>A</sup>T<sub>E</sub>X package `babel` (for `pdflatex`) or `polyglossia` (for `xelatex`). Obviously the author can insert as many parts of text in other languages as he wants.

The list of class options and commands of `saparticle` follows. The next two sections show working examples.

### 3.1 Class options

The following options can be passed in the `documentclass` command.

**ebook** Loads the `hyperref` package and slightly changes the layout of the document in order to be suitable as an ebook.

**draft** The usual `draft` option of the `LATEX` Standard Classes.

**romandiff** Change the behaviour of the `\di` command: see App. 6.5 on page 8.

**vecarrow** Change the behaviour of the `\vec` command: see App. 6.5 on page 8.

**amsthm** Loads the `amsthm` package and define several theorem like environments: see App. 6.5 on page 7.

### 3.2 Commands for title, authors and affiliations

The title, the list of the author's name and the affiliations are generated by the `\maketitle` command. This command needs some information that you can supply by the following commands in the preamble of the document.

`\title{...}` Mandatory.

`\author[...]{...}` Mandatory. The optional argument is the label used for the affiliation, which is specified by the `\address{...}` command. If more than an affiliation is needed you can simply separate them by comma. Example:  
`\author[MIT, ENEA]{Francesco Biccari}`.

`\corref{...}` Mandatory. Specify the corresponding author by a label. Example:  
`\author[MIT, ENEA]{Francesco Biccari\{biccari}}`.

`\cortext[...]{...}` Mandatory. The optional argument is the label used in the `\corref` command for the corresponding author. Usually it is used for specifying email and office telephone. Example:  
`\cortext[biccari]{Email: biccari@gmail.com}`.

`\address[...]{...}` This command specify the address of the institute written in squared parentheses. Example:  
`\address[ENEA]{ENEA, Via Anguillarese 301, Roma 00123, Italy}`.

### 3.3 Other commands

**abstract** environment. Mandatory. Put this environment with your abstract, after the `\maketitle` command.

`\keywords{...}` Mandatory. Separate the keywords with a comma. Put this command after the abstract environment.

## 4 Instructions for authors

Likely, if you are using saparticle, you are writing one or more papers for a book of conference proceedings. If so, you should send a copy of the paper in pdf format to the editor of the conference proceedings. In order to correctly compose your paper, remember to ask to the editor the preferred bibliographic style. *Do not worry about the fact that the top margin is very narrow!* It is necessary in order to assemble all the papers in the book of the conference proceedings.

## 5 Example

```
% !TEX encoding = UTF-8
% !TEX program = pdflatex
% !TEX spellcheck = en_US

\documentclass{saparticle}

% If the document is in Italian load also the following two lines
\usepackage[italian]{babel} % if you use pdflatex
\usepackage[utf8]{inputenx} % if you use pdflatex
% \usepackage{polyglossia} % if you use xelatex
% \setmainlanguage{italian} % if you use xelatex

\title{The title of my paper}

\author[ENEA]{Francesco Biccari\corref{biccari}}
\author[UNITN,ENEA]{Claudia Malerba}
\author[SAPIENZA,ENEA]{Matteo Valentini}
\author[ENEA]{Rosa Chierchia}
\author[ENEAPORT]{Emilia Esposito}
\author[ENEA]{Alberto Mittiga}
```

```

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\begin{document}

\maketitle

\begin{abstract}
This is the text of the abstract...
\end{abstract}

\keywords{Article, LaTeX, Sapienza University Press}

\section{Introduction}
...

\section{Conclusions}
...

\section*{Acknowledgements}
...

\appendix
\section{This is an appendix}
...

\section{This is another appendix}
...

\phantomsection % Give this command only if ebook option is used
% Here put the code for the bibliography. You can use BibTeX or
% the BibLaTeX package or the simple environment thebibliography.

\end{document}

```

## 6 Stylistic recommendations

### 6.1 Citations

Saparticle provides the `quoting` environment for citations.

```
\begin{quoting}
This is a citation in display.
\end{quoting}
```

For in line citation use double quotes: “this is an in-line citation”.

### 6.2 Images

Figures must be centered. The figure captions should be placed *below* the figure. However if the figure has a small width, it is possible to put the figure caption aside the figure using the `sidecap` package (not preloaded by `sapbook`).

As regards the image format, it is highly recommended to use vector images as much as possible. Remember also that the figures should be readable even if they are printed in gray scale.

### 6.3 Tables

Tables should be left aligned or, if possible, should be stretched in order to fill the text width. The table caption must be placed **below** the table.

Here follows an example of correctly composed table

```
\begin{table}
\begin{tabular}{ccc}
\toprule
a & b & c \\
\midrule
1 & 2 & 3 \\
4 & 5 & 6 \\
\bottomrule
\end{tabular}
\caption{This is a table example}
\end{table}
```

### 6.4 Bibliography

Saparticle supports all the possible ways to compose a bibliography in LaTeX: the simple `thebibliography` environment, the `BibTeX` way and the `BibLaTeX`

way. None of these three methods can be explained in this short manual. The authors are invited to read a  $\LaTeX$  guide and the documentation of the Bib $\LaTeX$  package. Here we give just some general guidelines on the styles to choose. The `thebibliography` environment is not discussed in this manual because its usage is highly discouraged since the authors have to manually format the bibliography and manually order the entries. On the other hand, the authors are left free to choose between a numeric citation scheme and an author-year citation scheme.

### 6.4.1 Bib $\TeX$

If you use Bib $\TeX$ , you can choose between two styles specifically created for the Sapienza University Press. The first one is `sapnum`, for numeric citations (`sapnum-eng.bst` for English and `sapnum-ita.bst` for Italian), and the other one is `sapauth`, for author-year citations (`sapauth-eng.bst` for English and `sapauth-ita.bst` for Italian). In this latter case the authors are invited to use the `natbib` package.

Please note that Bib $\TeX$  is being slowly replaced by Bib $\LaTeX$ .

```
% Bibliography as a section
% at the end of the book
\bibliographystyle{sapnum}
\bibliography{biblio1,biblio2,...}
```

### 6.4.2 Bib $\LaTeX$

Even though Bib $\TeX$  is widely used in the  $\TeX$  world, it is now obsolete. It has been superseded by a more modern and powerful system: Bib $\LaTeX$ . For further information see the Bib $\LaTeX$  documentation and a modern  $\LaTeX$  guide. In the case of Bib $\LaTeX$  please use the Philosophy classic style. (*stili specifici sono in corso di progettazione*)

## 6.5 Mathematics and sciences

Saparticle provides several commands potentially useful to write mathematics or other sciences. Most of them are just shortcuts for other commands, but on the other hand the usage of the commands `\vec` (for vectors) and `\tens` (for tensors) are highly recommended. Here the list of commands follows.

`\eu` Napier's number,  $e$ , in roman.

**\iu** Imaginary unit, i, in roman.

**\der[...]{...}{...}** Derivative. The optional parameter is the order of the derivative. The following two arguments are the numerator and the denominator. The differential symbol is automatically inserted.

**\pder[...]{...}{...}** Partial derivative. Same as above

**\rb{...}** Roman suBscript

**\rp{...}** Roman suPerscript

**\tb{...}** Text suBscript

**\tp{...}** Text suPerscript

**\un{...}** Useful command to typeset measurement units in the correct way, e.g.  $25\text{un}\{\text{m/s}\}$ ,  $13\text{un}\{\text{kg}\text{, cm}^{-3}\}$ . It can be used both inside or outside the math environment. For heavy usage of measurement units and to insert numbers in the form  $1.4\text{e-}5$ , the package `siunitx` is recommended.

**\g** Shortcut for the `\degree` command. Example:  $45\text{g}$  produces  $45^\circ$ .

**\C** Shortcut for the `\celsius` command. Example:  $37\text{\,}\text{C}$  produces  $37^\circ\text{C}$ . (Not available in math mode compiling with `xelatex`).

**\A** Angstrom. Example:  $10\text{\,}\text{A}$  produces  $10\text{ \AA}$ .

**\micro** Micro prefix. Example:  $7\text{\,}\text{micro m}$  produces  $7\text{ }\mu\text{m}$ .

**\ohm** Ohm. Example:  $100\text{\,}\text{ohm}$  produces  $100\text{ }\Omega$ .

**\di** Differential symbol with automatic spacing.

Example:  $\int x\text{\,}\text{di } x$  produces  $\int x\text{ }dx$ . If you prefer the differential symbol in roman (d) you can give the option `romandiff` in the document class options.

**\x** Shortcut for the `\times` command. E.g.:  $7\text{\,}\text{x } 10^5$  produces  $7 \times 10^5$ .

**\vec{...}** For vectors. Use `vecarrow` class option in order to have vectors with an arrow above.

**\tens{...}** For tensors (sans serif upright).



If the `amsthm` class option is passed to `Saparticle`, several theorem-like environments are defined by the help of the `amsthm` package. These environments are: `theorem`, `lemma`, `corollary`, `proposition`, `conjecture`, `criterion`, `axiom`, `definition`, `condition`, `problem`, `example`, `exercise`, `remark`, `note`, `notation`, `summary`, `case`, `conclusion`, `claim`, `proof`. All these environments are numbered per chapter except for the `claim` and `proof` environments which are not numbered. This is a code example:

```
% Pass the amsthm option to sapbook
\documentclass[amsthm]{saparticle}

% Example of theorem
\begin{theorem}[Optional title]
In any right triangle, the area of the square whose
side is the hypotenuse is equal to the sum of the
areas of the squares whose sides are the two legs.
\end{theorem}
```

## 6.6 Further recommendations

- Do *not* change the default layout and do *not* use packages which can modify the layout of the paper.
- Do *not* load the packages already loaded by `saparticle` in the preamble of your document.
- As you already should know,  $\text{\TeX}$  can process only documents in pure ASCII. If you want to *directly* insert other characters, not included in the 128 ASCII characters (for example accented letters), you have to use a particular text encoding for your source file. Moreover you have to “tell” to  $\text{\TeX}$  which encoding you have chosen. If you compile by the `pdflatex` command you can specify the encoding by the packages `inputenc` or `inputenx`. It is highly recommended to use the UTF-8 encoding. On the other hand, if you use `xelatex`, the source file is already expected to be in UTF-8, therefore you have nothing to do.

However, if your book is in English, I suggest to avoid the use of a particular text encoding for the source file because you will insert non ASCII characters very seldom. For this reason it is better to write these characters by the usage of the  $\text{\LaTeX}$  commands (for example `\'e` for the *é* letter).

- Respect the following book structure:
  - Title, authors, affiliations (`\maketitle` command)
  - Abstract. (`\abstract` environment)
  - Keywords (`\keywords` command)
  - The text of the paper divided in sections
  - Acknowledgments (non numbered section)
  - Appendices (They are simple sections after the `\appendix` command)
  - References
- Avoid the use of colors unless really necessary.
- Subscripts and superscripts should be in italic if they represent variable quantities, whereas should be in roman if they are simply labels.
- The name of operators should be typed in roman. Example: use `\sin` instead of *sin*.
- Do not use margin notes. They are disabled in `saparticle`.
- If your paper contains only English or very few paragraphs in another language, do not use the `babel` or `polyglossia` package because useless.

## A A very brief introduction to the T<sub>E</sub>X world

T<sub>E</sub>X, the document preparation system designed by Donald Knuth in 1978, is a program to typeset documents. It is a mark-up macro language: you write a source text decorated with T<sub>E</sub>X commands, which is then compiled to obtain the final product, a document in pdf format in our case. L<sup>A</sup>T<sub>E</sub>X is just a set of macros written in T<sub>E</sub>X to simplify the writing of the source text: you can think about it as a simpler programming language with respect to T<sub>E</sub>X. A source code written in L<sup>A</sup>T<sub>E</sub>X can be compiled by several “compilers”: `pdflatex` (the most common), or `xelatex`, or others. The following list of L<sup>A</sup>T<sub>E</sub>X manuals, may be especially useful for Italian authors.

- L. PANTIERI & T. GORDINI, *L'arte di scrivere con L<sup>A</sup>T<sub>E</sub>X*, (2012)
- S. PAKIN, *The comprehensive L<sup>A</sup>T<sub>E</sub>X symbol list*, (2009)
- E. GREGORIO, *L<sup>A</sup>T<sub>E</sub>X: breve guida ai pacchetti di uso più comune*, (2010)

In order to use L<sup>A</sup>T<sub>E</sub>X, you have to install a T<sub>E</sub>X distribution. It contains the compilers, several fonts and other files needed by the compilers and also many *packages*, which can be thought as libraries or extensions of L<sup>A</sup>T<sub>E</sub>X. The most famous distributions are [MiKTeX](#) (available only for Windows), [TeX Live](#) (available both for Windows and Linux) and [MacTeX](#) (available only for Mac OS).

Finally we discuss the editor, that is the program used to write your source file. Since a source file written in L<sup>A</sup>T<sub>E</sub>X, like in any other programming language, is a simple text file, you can write your code with any text editor you want (for example Notepad in Windows). However the suggested editors are:

- [TeXworks](#). Already installed with any T<sub>E</sub>X distribution. Very simple and powerful. Use TeXworks if you are not an expert. Enrico Gregorio has written a very good and brief TeXworks manual in Italian, which can be found at: <http://profs.sci.univr.it/~gregorio/egtex.html>.
- [TeXstudio](#) (cross-platform), [TeXmaker](#) (cross-platform), [TeXshop](#) (only for Mac), [Kile](#) (only for Linux). Powerful editors.
- **Avoid** other editors unless you know what you are doing!

Finally we explain how to compile the example document provided in the sapbook package. Double click on the file `sapbook-example.tex`. TeXworks

should start showing the content of that file. The `pdflatex` compiler should be automatically selected thanks to the *magic lines* placed at the beginning of the file. Now, in order to compile, press the green button. At the end of the compilation the resulting pdf appears in a separate window. Remember to compile at least three times, because  $\text{\LaTeX}$  needs more than one compilation to correctly resolve the internal cross references (for example for the table of contents composition, or when you refer to a figure by the `\label – \ref / \pageref` mechanism).