Detailed Instructions for Authors

May 26, 2007

Contents

1 Introduction

We will accept manuscripts written in any legitimate version of LaTeX. However, we strongly recommend that authors follow the following instructions which make it easier for us to bring their work into compliance with our publication format, help avoid introduction of errors, and thus save time for both, the editorial staff and the authors who, eventually, would have to correct them.

The manuscript, written in English, should normally not exceed 25 pages in length and be prepared in LaTeX2e using PROBABILITY AND MATHEMATICAL STATISTICS ($\mathcal{PMS}$) `pmsart` document class which provides environments, commands, and formatting for manuscript preparation. Authors

have a choice of several theorem-like environments as well as two redefined `proof` environments which automatically add the QED symbol at the end of the proof. Section 5 contains their full list and descriptions. The `pmsart` document class also redefines the `figure` and `table` environments described in Section 6 to ensure an appropriate formatting and title placing. To facilitate the logical organization of the manuscript we provide the additional `appendix` and `acknowledgements` subsections in Section 4.

Under no circumstances should authors change fonts, font sizes, margins, and page sizes prescribed by our format, nor should they introduce any additional spacing (e.g., `\hspace`). The command `\smallcaps` is automatically introduced by the publisher.

The `pmsart` document class incorporates the standard supplementary packages such as `amsthm`, `amssymb`, `graphicx`, `natbib`, `mathptm`, `geometry` and `soul`; authors should not attach these packages again, and should not modify them in any way.

Authors not familiar with LaTeX can find a good introduction in [5]. Other free sources are available on the Internet. More advanced users are referred to [4]. Confronted by seemingly intractable LaTeX problems, authors should not hesitate to contact Marek.Czystolowski@math.uni.wroc.pl, and ask for help.

2 How to use the `pmsart` document class: preliminaries

2.1 Installation

Begin by downloading the latest version of `pmsart.cls` and `pms.sty` files from `www.math.uni.wroc.pl/~pms`. To install the package follow one of the two options:

I. Copy the files into the folder (directory) containing your submission's source files. This method is simple but has some disadvantages: the source file cannot be compiled once the $\mathcal{PMS}$ files removed. Moreover, the $\mathcal{PMS}$ document class files will have to be inserted separately in each folder (directory) in which files call for the $\mathcal{PMS}$ package.

II. Create a folder `texmf/tex/latex/pmsart`[1], and place a copy of the package files there. Some TeX systems also use a database to keep track of TeX input files. If this database is not updated, your TeX system might not be able to find the newly installed files. Consult your TeX system's documentation to determine how to update this database.

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[1] `texmf` is the root directory of your LaTeX system

2.2 Options

The `pmsart` class has the following options:

submission The option `submission` indicates the version of your submission, and introduces larger spacing for the benefit of copy editors and referees. Please, do not attempt to change them even if they appear excessive to you. They will be removed in the final version.

finalversion The option `finalversion` indicates the final version of the manuscript and its formatting is exactly the same as in the printed issue.

To use the `finalversion` option insert the code line

```
\documentclass[finalversion]{pmsart}[2006/01/13]
```

at the beginning of your document (the date refers to the latest version of our package, and not to the submission date of your manuscript). The usage of the `submission` option is analogous.

3 Internal structure of manuscript

Correct use of the $\mathcal{PMS}$ package requires a special structure of the source file: extra commands must be put in the preamble, and in the proper document environment. Ready to use file, `template.tex`, can be downloaded from `www.math.uni.wroc.pl/~pms`. Its structure is as follows:

```
\documentclass[finalversion]{pmsart}[2006/01/13]

%% Your own definitions

\volume{0}
\fasc{0}
\years{0000}
\pages{000--000}
\firstpage{1}
\lastrevision{xx.xx.xxxx}

\title{}
\titlethanks{}
\dedicated{}
\ShortTitle{}
\ShortAuthors{}
\NumberOfAuthors{}
\received{}
```

```
\FirstAuthor{}
\FirstAuthorCity{}
\FirstAuthorAffiliation{}
\FirstAuthorAddress{}
\FirstAuthorEmail{}
\FirstAutorThanks{}

\SecondAuthor{}
\SecondAuthorCity{}
\SecondAuthorAffiliation{}
\SecondAuthorAddress{}
\SecondAuthorEmail{}
\SecondAutorThanks{}

\ThirdAuthor{}
\ThirdAuthorCity{}
\ThirdAuthorAffiliation{}
\ThirdAuthorAddress{}
\ThirdAuthorEmail{}
\ThirdAutorThanks{}

\FourthAuthor{}
\FourthAuthorCity{}
\FourthAuthorAffiliation{}
\FourthAuthorAddress{}
\FourthAuthorEmail{}
\FourthAutorThanks{}

\FifthAuthor{}
\FifthAuthorCity{}
\FifthAuthorAffiliation{}
\FifthAuthorAddress{}
\FifthAuthorEmail{}
\FifthAutorThanks{}

\keywords{}
\MSCcodes{}

\begin{document}
\maketitle
\begin{abstract}
...
\end{abstract}
```

```
...

\begin{thebibliography}{9}
...
\end{thebibliography}

\end{document}
```

Authors are not allowed to remove any of commands from the above listing. Leave the arguments empty in case you decline to provide a particular information. However, in some commands arguments are required and can not be omitted, and some are filled in by the Editor.

Authors are allowed to use their own macros as long as they do not interfere with the $\mathcal{PMS}$ package. Place them just below the line

```
%% Your own definitions.
```

I. Required information

   `title` The title should be descriptive but also as concise as possible. Avoid phrases such as "On an unsolved problem of ...", etc. For example,

   ```
   \title{Monotonicity and non-monotonicity of domains of
         stochastic integral operators}
   ```

   `ShortTitle` An abbreviated version of the title to be used as a running head, e.g., `\ShortTitle{Stochastic integral operators}`.

   `ShortAuthors` An abbreviated version of authors' names in the following format:

   - In the case of a single author: initials and surname, e.g., `\ShortAuthors{H. Steinhaus}`;
   - In the case of two authors: first author's initials and surname followed by the command `\and` and second author's initials and surname, e.g., `\ShortAuthors{H. Steinhaus \and K. Urbanik}`;
   - In the case of three, or more, authors: first author's initials and surname followed by the `\etal`, e.g., `\ShortAuthors{H. Steinhaus \etal}`.

   `NumberOfAuthors` The number of paper's authors, e.g., `\NumberOfAuthors{2}`

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[2]Preceded with one of the prefixes `First`, `Second`, `Third`, `Fourth` or `Fifth`.

Author[2] The last name followed by the given name(s). Names must be put inside `\mbox`, or be enclosed within braces `{}`, but depending on your LaTeX system the second possibility may not work properly. E.g.,

`\FirstAuthor{\mbox{Hugo} Steinhaus}`, or

`\FirstAuthor{{Hugo} Steinhaus}`.

AuthorCity[2] Author's city of residence or employment, e.g.,

`\FirstAuthorCity{Wroclaw}`.

AuthorAffiliation[2] Author's institutional affiliation may be composed in several lines separated by the command `\\`, e.g.,

`\FirstAuthorAffiliation{Institute of Mathematics\\`
`Wroclaw University}`

AuthorAddress[2] Author's institutional address may be composed in several lines separated by the command `\\`, e.g.,

`\FirstAuthorAddress{pl. Grunwaldzki 2/4\\`
`50-384 Wroclaw, Poland}`.

AuthorEmail[2] Author's email address, e.g.,

`\FirstAuthorEmail{hugo@math.heaven.org}`

received Date of the manuscript submission in the following format: `dd.mm.yyyy`, e.g., `\received{25.03.2007}`.

keywords Keywords and key phrases, e.g.,

`\keywords{Stable distributions, martingales}`

MSCcodes AMS subject classifications, primary- and secondary-. The full list of codes is available at `http://www.ams.org/msc/`. E.g., `\MSCcodes{Primary: 60H40; Secondary: 33C45, 42C10.}`.

abstract Not exceeding 150 words summarizing results of the paper and not including any references. Put content of your abstract between the commands `\begin{abstract}`, and `\end{abstract}`.

thebibliography References. See more in section 4.

II. Optional information

titlethanks Information about financial support, grants, etc. Use this command only if all the authors want to provide the same piece of information. Otherwise, use appropriate commands associated with each author, i.e., `AuthorThanks`.

dedicated Dedication, e.g., `\dedicated{Dedicated to the memory of Hugo  Steinhaus}`.

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[2]Preceded with one of the prefixes `First`, `Second`, `Third`, `Fourth` or `Fifth`.

III. Filled in by the Editor: `volume`, `fasc`, `years`, `pages`, `firstpage`, `lastrevision`.

4 Sectioning and numbering

4.1 Basic sections and numbering

Divide the manuscript into sections, subsections, etc., using commands `\section`, `\subsection`, `\subsubsection`, and refer to them via command `\ref`. Each part of the paper must have its own number, so try to avoid paragraph-like sections. The following code provides an example of such a division and references to it:

```
\secion{Introduction} \label{sec:intro} The text of the first
section, which consist of two subsections.
\subsection{Methods} \label{sec:methods}
 ...
\subsection{Simulations}
Another subsection. In section \ref{sec:methods}... Tags
sec:intro, sec:methods are just examples and you can use any
names you want.
```

The $\mathcal{PMS}$ package forces the numbering systems on the authors. Sections, equations, theorems, figures, tables, etc., have their own numbering scheme which cannot be changed.

4.2 Appendix

The `pmsart` document class provides two implementations of appendices. For a single appendix use the environment `\appendix*` followed by the text of the appendix. In the case of multiple appendices, each appendix must have its own name. To use it follow the format

```
\appendix{name 1}
text of the appendix 1
\appendix{name 2}
text of appendix 2
```

Do not create additional sections for this purpose, that is, do not use the command `\section{Appendix}`.

One can create `\subsection` and `\subsubsection` in the appendices but not a `\section`, because `\appendix` itself is a section. Simultaneous use of

`\appendix*` and `\appendix{name}` is not allowed and will cause compilation error.

4.3 Acknowledgements

Compose acknowledgements using the command `\acknowledgements`, e.g., `\acknowledgements Text of the acknowledgement.`

4.4 References

Use the `\thebibliography` environment and the command `\bibitem`. No other formats are allowed. Each of the references is to be arranged as follows:

- papers published in journals: authors' initials and surname (the last named author preceded by `\and`, other authors' names separated by comas), full title of the paper (in italics), abbreviated title of the journal according to the current index issue of Mathematical Reviews, number of the volume, year of the publication in parentheses, the first and the last pages of the paper (e.g., `pp. 123--134`)

- books: author's initials and surname, book title, publisher, place and year of the publication.

Use the command `\cite` throughout the source code of the manuscript.

The `\thebibliography` environment needs an additional argument. Write `\thebibliography{9}` if you have less then 10 items in list, `\thebibliography{99}` if you have between 10 and 99 items, etc.

To ensure proper letter spacing throughout the authors' names they have to be put inside braces and preceded with command `\n`. Follow the example below and, for more information, refer to `natbib` package documentation [3].

```
\begin{thebibliography}{9}
\bibitem{bib:1}  \n{S. Banach}, {\it  Th\' eorie des Op\' erations
Lin\' eaires, 2nd ed.,} Chelsea, 1955.
\bibitem{bib:2}   \n{C. D. Jr. Hardin}, {\it Isometries on
subspaces of $L^p$,} Indiana Univ. Math. J. 30 (1981), pp.
449--465.
\bibitem{bib:3} \n{V. M. Kruglov, A. Volodin \and T. C. Hu},
{\it On complete convergence for arrays,} Statist. Probab. Lett.
76 (2006), pp. 1631--1640.
\end{thebibliography}
```

5 Theorem-like environments

The `pmsart` document class provides the following theorem-like environments:

```
definition                example
remark                    commentaryRemark
proposition               corollary
lemma                     theorem
```

They are based on the $\mathcal{AMS}$ \newtheorem environment. Authors are not allowed to modify them. In the environments remark, and definition, we only enter in italics the notion to be defined. In brackets additional information can be entered (such as the name of the example, or the authors of a theorem). The usage of such environments is described in depth in [1].

Place all proofs inside the proof or the proofof environment. The first of them is to be used just after the appearance of the theorem being proved. The second one is useful if a proof is postponed, and it requires one argument which describes the statement that is going to be proved, e.g.,

```
\begin{proofof}{Lemma {\ref{lem:1}}}
...
\end{proofof}
```

Any occurrence of \ref in the argument of this environment must be enclose with braces {}.

It's worth noting that, in most cases, those environments automatically put the QED symbol correctly. However, in some situations (e.g., when the proof ends with an equation), the QED symbol is placed at the beginning of the next line. To solve this problem insert by hand the command \qedhere. Detailed documentation one can be found in [1], in the section Proofs.

6   Figures and Tables

Tables should be inserted using the modified \table environment, and figures using the modified \figure environment.

Both environments take two essential arguments, the title, and the reference tag. Our modified table, and figure environments, unlike the original LaTeX environments, no longer permit arbitrary placement of figures and tables. They are put either in the place of the appearance in the source code or, if that is impossible, in the closest available location. By default, the placement modifier is set to h (here). Examine the examples below to familiarize yourself with how these environments function.

```
\begin{table}{Caption}{tab:1}
\begin{tabular}{|c|c|}\hline
  2 & 1 \\ \hline
  3 & 4 \\ \hline
\end{tabular}
\end{table}
```

Insertion of, e.g., `test.eps` (Encapsulated PostScript) graphics into the manuscript can be achieved by writing:

```
\begin{figure}{Caption}{fig:1}
\includegraphics[scale=0.4]{test.eps}
\end{figure}
```

7 Editing Formulas

The `pmsart` document class incorporates a number of packages, including the `amsmath` package which provides miscellaneous enhancements for preparing mathematical formulas. The user guide for this package is available on the Internet [2]. Commands and environments from `amsmath` satisfy all $\mathcal{PMS}$ requirements.

The sizes of parentheses, brackets, and braces should generally correspond to the sizes of relevant operators (sums, integrals, etc.). They could be larger if they include a fraction in the normal form. For example,

$$\left(\sum_{i=0}^{n}(x_i - \overline{x})\right)^{1/2}\sum_{i=0}^{n}\left(\frac{w_i x_i - \overline{x}}{\sum_{i=0}^{n}w_i x_i}\right)^{1/2}.$$

Introduce only necessary numbering of the formulas, tag them and refer to them via the command `\eqref{tag}`. No parentheses are needed. Authors should not indiscriminately display every equation or formula. However, formulas set inline are harder to spot, may cause problems with bad line breaks (which one has to fix by inserting explicit line breaks), and they may look poor, especially if they involve fractions, sums, integrals or other "large" objects.

Try to avoid fractions, or other large objects, , such as

$$\frac{2 + \frac{1}{x}}{1 + \frac{1}{x^2}}, \tag{1}$$

especially if they appear in in-line formulas. Whenever possible, use a "slash" or a negative power. Formula (1) can be easily transformed into a better displayed equation

$$\frac{2 + 1/x}{1 + 1/x^2},$$

or into an in-line formula $(2 + 1/x)/(1 + 1/x^2)$.

The summation and integration limits should appear as subscripts and superscripts in the text, in fractions, and in `\cases`. In other situations they should appear below and above the operator; use the command, say, `\int\limits_0^\infty` or `\int\nolimits_0^\infty`.

Use abbreviated notation for often repeated, complicated expressions.

Do not insert additional spacings before and after operators of summation, integrations, etc.

If possible, avoid splitting formulas into several lines. If such a split is necessary then enforce it at relation signs, or operators, and put those signs at the beginning of the next line. In general, it is better if the first line of the multiline formula is shorter than the other lines.

$$I(a, b) = \int_0^b \frac{v^{\alpha/2-1}(2a+v)^{\alpha/2-1}}{(a+v)^{d/2-1}} K_{d/2}(a+v) dv$$
$$\approx e^{-a} \int_0^b \frac{v^{\alpha/2-1}(2a+v)^{\alpha/2-1}}{(a+v)^{(d-1)/2}} e^{-v} dv \approx a^{-(d+1)/2+\alpha/2} b^{\alpha/2} e^{-a}.$$

Use bold face fonts to denote vectors.

Do not use italics to denote operators, define them. Example: use `\operatorname*{Cov}` for the covariance function.

Use spacing between formulas according to the format:

> formula `\qquad` formula
> formula `\qquad` with `\quad` formula
> formula `\qquad` and `\qquad` formula

Utilize built-in environments from Section 5.

References

[1] American Mathematical Society, *User's guide for amsmath Package,* 1999, `http://www.ams.org/tex/amslatex.html`

[2] American Mathematical Society, *Using the amsthm Package*, 2004, `http://www.ams.org/tex/amslatex.html`

[3] P.W. Daly, *Natural Sciences Citations and References*, 2007, `www.ctan.org/tex-archive/macros/latex/contrib/natbib/`

[4] F. Mittelbach, M. Goossens, J. Braams, D. Carlisle, C. Rowley, *The LATEX Companion*, Addison-Wesley, 2004.

[5] T. Oetiker, H. Partl, I. Hyna and E. Schlegl, *A Not So Short Introduction to LATEX2e*, available online.