

Publishing with the Princeton University Press L^AT_EX Macros

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1 Preliminaries

If you are preparing TeX files for us to typeset, we ask that you comply with the following requests. The following guidelines are more specifically geared toward the preparation of L^AT_EX 2_ε files. However, if your files are composed

in Plain $\text{T}_{\text{E}}\text{X}$, $\text{AMST}_{\text{E}}\text{X}$, or some other version of $\text{T}_{\text{E}}\text{X}$, these guidelines should still apply.

1. **Information.** Please provide as much information as possible concerning the disks you have prepared. You should have received a Production Checklist for $\text{T}_{\text{E}}\text{X}$ Manuscripts, which lists some of the things we need to know about your files. (If you have not received this checklist, please call your editorial representative at the Press and have him/her send you one.) This information is vital for the effective handling of your files. If you have any more information to add to this checklist, by all means, feel free to do so.
2. **Formatting and macros.** As you know, $\text{T}_{\text{E}}\text{X}$ (and its many versions) is a very powerful program that allows the keyboarder a great deal of creativity. When submitting files for us to typeset, however, we prefer that you keep your formatting as uncomplicated as possible.

If you are using $\text{L}^{\text{A}}\text{T}_{\text{E}}\text{X}$ or $\text{AMSL}^{\text{A}}\text{T}_{\text{E}}\text{X}$, please use the generic coding that these macro packages provide (e.g., in the $\text{L}^{\text{A}}\text{T}_{\text{E}}\text{X}$ environment, use the $\backslash\text{section}$, $\backslash\text{subsection}$ commands to define your section and subsection headings). Most important, do not redefine any plain $\text{T}_{\text{E}}\text{X}$ or $\text{L}^{\text{A}}\text{T}_{\text{E}}\text{X}$ 2 ϵ control sequences! Please refrain from developing your own codes regarding the appearance of subsection heads, paragraph indentation, word spacing, and page breaks; do not use explicit TeX coding to control line and page breaks, and do not use explicit horizontal and vertical spacing commands. Let $\text{L}^{\text{A}}\text{T}_{\text{E}}\text{X}$ or $\text{AMST}_{\text{E}}\text{X}$ do this for you. These are all design features that our designers and compositors will most likely need to alter and the less you change these elements, the easier it will be for the compositor to substitute the necessary codes and macros to impose the chosen design. $\text{T}_{\text{E}}\text{X}$ allows you the ability to produce a book-crafted quality manuscript, and it is tempting to format your files so as to achieve a more aesthetic appearance; but if we are to typeset the manuscript for you, we ask that you please refrain from doing so. The more “creative” coding you use, the more difficult and costly it will be for us to work with your files. In other words, let us worry about typesetting so you can concentrate on writing.

- (a) Use the Computer Modern fonts only, and use those Computer Modern fonts provided by the $\text{T}_{\text{E}}\text{X}$ version you are using. The compositor will change the fonts as necessary. If you are responsible for page makeup, see the discussion of font options in Section 3 *The Document Preamble and Class Options*, of this document.
- (b) Please keep format and content separate; do not put typesetting codes within key formats. If you find it necessary to create macros, please make a list of them all, keep them separate from the text, and try to keep them all in one place (such as confined to a $*.STY$ file or to the preamble of your document file). Should it become necessary for us to redefine your format coding, it is much easier for us if we

can find the codes. Do not insert format coding in the middle of your text (for example, defining the type size and width of an extract). If you find that you have to create new formats as you work, please flag the manuscript where these new items appear, and then place the appropriate coding at the beginning of your file.

- (c) Please let us know if you are using any style file other than the Princeton `flbookXY.cls`¹ for L^AT_EX 2_ε. Note: altered versions of the standard `book.sty` do exist. If you are aware that you are using an altered version, please let us know. If you have no idea, please tell us where you obtained your `book.sty`. (The default L^AT_EX `book.sty` has a text height of 44 picas [approximately 7 1/4 inches], and a text width of 27 picas [approximately 4½ inches])
- (d) Do not use any figure placement programs to embed illustrations in your files. Textures users: Although Textures permits Macintosh-style cut and paste operations on figures, please avoid using this feature. Your artwork should consist of separate files on-disk, called into the L^AT_EX 2_ε document using the standard art insertion macros.
- (e) Please check to make sure your files are coded as consistently as possible

3. **Preparing a test disk.** Before we receive your manuscript, it is imperative that you send a disk containing a few sample files. This allows us to get an idea of how your files have been prepared and also will enable us to anticipate problems we might encounter in the typesetting of your files. On your test disk, please include in the sample files:

- (a) Several complete paragraphs containing some of the more complicated mathematical formulae, footnotes, and section headings
- (b) Sample bibliographic references
- (c) Examples of block quotations, lists, and tables

On a separate disk, please send a sample of the graphics program (if any) that you are using. Please note that test disk(s) will not be returned to you, so please keep backups of anything you send.

4. **Submitting the manuscript.** Before submitting your final manuscript, please talk with your acquisitions editor. He/she will tell you exactly what the production editor will need.

- (a) Provide electronic files that match your printout precisely. If you make corrections after printing out the final manuscript, please add them to the manuscript by hand or on separate sheets of paper that are marked “not on disk;” do not print out new pages with corrections that are not reflected in the files supplied to the Press.

¹Throughout this document, the PUP class is referred to as `flbookXY.cls`; read `XY` as “variables” denoting the version number of the PUP class file, i.e. 1.2, 1.3, etc. The class file will be distributed with digits in the file name.

- (b) Include a list of file names and the corresponding manuscript page numbers.
 - (c) List all accents and special (mathematical, Greek, Fraktur, etc.) characters that appear in the manuscript.
 - (d) Keep a complete set of backup disks.
5. **Copyediting.** Do not make changes to your backups during copyediting. The copyedited manuscript will be sent to you for approval. This is your last opportunity to make changes on the physical copy. Thereafter, all approved editorial corrections will be added to your electronic files by the TeX manuscript compositor.

If you have any difficulty with the macros, please contact Neil Litt at

`neil_litt@pupress.princeton.edu`

Unfortunately, we are not able to assist in general TeX questions.

2 Introduction

1. There are concrete advantages provided by standardized macros:
 - (a) Uniform appearance for entire series.
 - (b) Since you will see a very accurate representation of your completed book, you have control over the size and placement of tables and figures.
 - (c) Break long displayed equations properly.
 - (d) Realistic book length estimation.

The series will be printed with Adobe Times, Agfa Abadi, and MathTime (for Times-like math and symbols).

3 The Document Preamble and Class Options

The various entries in your L^AT_EX preamble are largely determined by the fonts present on your system.

If your L^AT_EX installation includes only the basic Computer Modern font set, use the following entries in your preamble:

```
\documentclass[optional arguments]{flbookXY}
\usepackage{epsfig}
\usepackage{latexsym}
\usepackage{makeidx}
\makeindex
\begin{document}
```


4 Frontmatter

Consisting of the half-title and titlepages, copyright page, series page (if any), dedication page (if any), book epigraph (if any), table of contents, and the preface.

Follow the `\begin{document}` command with:

```
\frontmatter
\title{Chaotic Transitions in Deterministic\
      and Stochastic Dynamical Systems}
\shorttitle{Transitions in Deterministic Systems}
\subtitle{Applications of Melnikov Processes in Engineering,
         Physics, and Neuroscience}
\author{Emil Simiu}
\makehalftitle
\maketitle
```

Note

You need not create your entire book as a single file. Use the standard \LaTeX commands `\include` and `\includeonly` to work with multiple files. See `Lamport` for details on usage.

4.1 Table of Contents

Use the `\tableofcontents` command to automatically create the table of contents.

4.2 Preface

Use the `\begin{thepreface}... \end{thepreface}` environment to create your preface.

5 The Body

5.1 Part Pages

Insert the command

```
\mainmatter
```

after your frontmatter. This will change page numbering to arabic, as well as reactivating chapter numbering.

If your book is divided into parts, use the standard `\part` command:

```
\part{A Sample Part Page}
```

5.2 Chapters

The syntax of the `\chapter` command follows that of the standard \LaTeX :

```
\chapter[optional text]{Chapter title}
```

in which `optional text` can be a shortened version of the chapter title, for inclusion in the [right] running head.

5.3 Standard \LaTeX Commands and Extensions

At this point, all the standard \LaTeX commands may be employed, including

```
\section
\subsection
\subsubsection
\begin{table}...\end{table}
\begin{figure}...\end{figure}
\begin{equation}...\end{equation}
\appendix
```

and, of course, all math operations and constructs. Consult Lamport or Kopka for details.

5.3.1 Lists

Although the standard \LaTeX list environments remain intact, several new list structures are available that provide cleaner formatting.

`numberlist` Similar to the standard `enumerate`, providing indented entries with arabic numerals. Use thusly:

```
\begin{numberlist}[optional argument]
\item Addition is \emph{commutative}, i.e.,  $T + U = U + T$ ;

\item Addition is \emph{associative}, i.e.,
 $(T + U) + V = T + (U + V)$ ;

\item there exists in  $\mathbb{R}_2$  a unique vector  $0$ , called the
\emph{origin}, such that  $T + 0 = T$  for all  $T$  in  $\mathbb{R}_2$ ;

\item To each  $T$  in  $\mathbb{R}_2$  there corresponds a unique vector, called
the \emph{inverse} of  $T$  and denoted by  $-T$ , such that
 $T + (-T) = 0$ .
\end{numberlist}
```

The optional argument should be added to clear for two-digit numbers.

`bulletlist` Similar to the `itemize` environment. Creates indented entries with a bullet centered vertically on the first line of text.

```
\begin{bulletlist}
\item Multiplication is \emph{distributive} with respect to
the addition of vectors, i.e.,  $a ( T + U ) = aT + aU$ ;

\item Multiplication is \emph{distributive} with respect to
the addition of numbers, i.e.,  $( a + b ) T = aT + bT$ ;

\item Multiplication is \emph{associative} with respect to
multiplication of numbers, i.e.,  $a ( b T ) = ( a b ) T$ ;

\item  $0T = 0$  and  $1 T = T$ . Note that the symbols appearing
in the first equation are conceptually different; the symbol on
the left is the number zero while the symbol on the right is
the origin of  $\mathbb{R}_2$ .
\end{bulletlist}
```

5.3.2 Theorem-like Environments

The following environments are provided to create various theorem-like structures:

```
\begin{theorem}...\end{theorem}

\begin{lemma}...\end{lemma}

\begin{corollary}...\end{corollary}

\begin{proposition}...\end{proposition}

\begin{definition}...\end{definition}
```

Additional environments are also provided:

```
\begin{proof}...\end{proof}

\begin{remark}...\end{remark}
```

5.3.3 More on mytheorems

As mentioned in Section 3, the PUP macros support a new option, `mytheorems`, that disables the default theorem-like structures, allowing the user to create new structures with customized numbering systems. If your goal is simply to alter the default numbering, consider modifying the basic `flbookXY.cls`.

If you modify the section of `flbookXY.cls` dealing with theorems, please rename your modified class file. Do not overwrite `flbookXY.cls`.

After invoking `mytheorems`, the standard L^AT_EX `\newtheorem` command can be used to create the environments mentioned above; in addition, the PUP macros provide a new command, `\newtheoremup`, that works exactly like `\newtheorem`, but produces upright (roman) text rather than italic. See any of the standard references for information on using `\newtheorem`.

Altering the appearance of environments created with `\newtheorem` can be problematic. The AMS package `amsthm.sty`² provides various options for “styling” theorems: type shape, spacing, etc. all become customizable, to some extent. The following shows how to create two different `theoremstyles` that closely match the PUP style, with a user-defined numbering system.

```
%_{}_{}_{}_{} plain style; italic text
\newtheoremstyle{plain}%
  {8pt plus2pt minus4pt}%
  {8pt plus2pt minus4pt}%
  {\itshape}%
  {}%
  {\bfseries\scshape}%
  {}%
  {1em}%
  %
  {}%

%_{}_{}_{}_{} upright style; roman (non-italic) text
\newtheoremstyle{upright}%
  {8pt plus2pt minus4pt}%
  {8pt plus2pt minus4pt}%
  {\upshape}%
  {}%
  {\bfseries\scshape}%
  {}%
  {1em}%
  %
  {}%

\theoremstyle{plain}
\newtheorem{lemma}[Lemma][section]
\newtheorem{theorem}[lemma]{Theorem}
\newtheorem{corollary}[lemma]{Corollary}
\newtheorem{proposition}[lemma]{Proposition}
\newtheorem{definition}[lemma]{Definition}
\newtheorem*{proposition*}{Proposition}
\newtheorem*{definition*}{Definition}
```

²All L^AT_EX packages can be found at www.ctan.org

```

\theoremstyle{upright}
\newtheorem{remarks}[lemma]{Remarks}
\newtheorem{examples}[lemma]{Examples}
\newtheorem{exercises}[lemma]{Exercises}
\newtheorem{remark}[lemma]{Remark}
\newtheorem{example}[lemma]{Example}

```

For a wonderfully lucid explanation of some AMS \LaTeX nuances, see the website at:

<http://www.stat.umn.edu/~charlie/amslatex.html>

5.3.4 Subequations

Sometimes it is desirable to designate subequations of a larger equation number. The subequations are designated with (roman font) letters appended after the number. PUP has supplemented its macros with the `subeqn.sty`, which defines the environment `{subequations}`.

```

\begin{subequations}\label{EKx}
\begin{equation}
y_k = B y_{k-1} + f, \quad k=1,2,3,\ldots
\end{equation}
for any initial vector  $y_0$ . Then
\begin{equation}
y_k \rightarrow u \quad \text{if and only if} \quad \rho(B) < 1.
\end{equation}
\end{subequations}

```

All equations within the `{subequations}` environment will keep the same overall number, but the letter designation will increase.

5.3.5 Exercises

The `exercises` environment creates the Exercises heading and an automatically numbered list. Enter each new exercise using the standard `\item` command.

```

\begin{exercises}
\item The first problem. Solve for  $x$ :
\[
y = \sqrt{x + \frac{1}{2}}
\]

```

```

\item The second problem. The second problem. The second problem.
The second problem. The second problem. The second problem. The
second problem. The second problem. The second problem. The second
problem. The second problem.
\end{exercises}

```

5.4 Bibliography

Here we use the standard \LaTeX commands:

```
\backmatter  
\begin{thebibliography}...\end{thebibliography}
```

The `\backmatter` command turns off chapter numbering for your Index and Bibliography. See Lamport or Kopka for details on creating the bibliography manually or with the freeware Bib \TeX program.

5.5 Indexing

The preamble statements

```
\usepackage{makeidx}  
\makeindex
```

prepare your document for indexing. Use the standard \LaTeX command

```
\index{entry!subentry}
```

to insert an entry.

After inserting all indexing entries, run the public domain `MakeIndex` program. This utility will order and format your entries and subentries. Again, see Lamport or Kopka for details.

6 Further Reading

Goosens M., Mittlebach F. and Samarin A. (1994). *The \LaTeX Companion*. Addison-Wesley, Reading, MA.

Griffiths D.F. and Higham, D.J. (1997). *Learning \LaTeX* . Society for Industrial and Applied Mathematics, Philadelphia, PA.

Kopka H. and Daly P.W. (1999). *A Guide to \LaTeX : Document Preparation for Beginners and Advanced Users, 3rd Ed.* Addison-Wesley, Reading, MA.

Lamport L. (1994). *\LaTeX —A Document Preparation System, 2nd Ed. Updated for \LaTeX 2 ϵ* . Addison-Wesley, Reading, MA.