A Brief Guide for Preparing Geophysics Manuscripts Using LaTeX

by The Friends of Geophysics*

(September 13, 1993)

INTRODUCTION

The SEG encourages contributors of *Geophysics* to submit their manuscripts in the form of LaTeX files or plain TeX text files. This speeds up the publication process and results in fewer typugrophical errors. The LaTeX or TeX file should be sent with the paper copy after the review process is completed and all changes have been made.

Since the format of an article produced with LaTeX is determined by the style file employed, we have prepared a set of style files named `seg.sty, seg10.sty, seg12.sty, segbib.sty, seg.bst` and `revtex.sty` in order to keep consistency with *Geophysics* format. This style set is based on REVTeX , a LaTeX framework for publishing scientific papers, which is used by the The American Physical Society, the American Institute of Physics and the Optical Society of America.

A complete package that includes the relevant REVTeX files and SEG macros can be obtained by anonymous ftp from `sepftp.stanford.edu /pub/SEGTeX` , or via email from `listserv@sep.stanford.edu` or from SEG, as described in the next section. You should consult the manual and/or guide books of LaTeX on how to obtain and use LaTeX itself.

A small sample file, called `segskeleton.tex`, is also available. This file contains an example layout of a standard paper and can be easily edited and expanded into

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your own paper. Another example file (`easybib.tex`) shows how to use BibTeX for creating bibliographies and references in your paper.

PREPARATION

How to get a copy of the SEG style package

If you have access to the INTERNET you can obtain a copy of the package by anonympus ftp from `sepftp.stanford.edu` (net address 36.51.0.59) in the directory `/pub/SEGTeX`. Login as anonymous and use your e-mail address as the password. Alternatively, for Unix users, send e-mail to `listserv@sep.stanford.edu` with the line "get segtex segtex.shar" in the body of the text to get a compressed copy of the files. PC or Mac users can get the package in form of a single uncompressed file by sending the line "get segtex segtex.ascii". For help information send the email message "help". To join a discussion group, put the line "subscribe segtex Your Name" in the text.

If you do not have e-mail you can ask for a copy of the style file, manual and sample files by sending a blank formatted 5.25-inch 2HD or 3.5-inch MS-DOS floppy disk to:

Geophysics
Society of Exploration Geophysicists
P.O. Box 702740
Tulsa, OK 74170-2740
Attention: Ken Brenkman

Also, you can get a copy personally from somebody who already obtained one, since the SEG permits free copying of the style package and related documents.

Installation

Copy all `.sty` and `.bst` files (`seg.sty, seg10.sty, seg12.sty, segbib.sty, seg.bst, revtex.sty, epsf.sty`) into the same directory where you keep other LaTeX style files (such as `article.sty` etc.). If you are using LaTeX on a unix machine, it will be most likely `/usr/lib/tex/inputs` or `/usr/local/lib/tex/inputs`, and if you use MicroTeX on an MS-DOS (or PC-DOS) machine, it will be `\TEX INPUTS` (or the directory specified by the environment variable `\TEXINPUTS`). Consult your LaTeX installation manual or a TeX guru around you. If you are in a hurry and can't find a TeXguru then just keep these style files in the same directory as your paper.

PREPARING YOUR MANUSCRIPT

Preparation of your manuscript using the **seg** style is similar to the procedure used with the **article** style, which is most commonly used with LaTeX . Additional extensions are described below. The easiest way to produce a manuscript for *Geophysics* is by starting with the `segskeleton.tex` file and by editing it accordingly.

1. The first lines of the text file should be

```
\documentstyle[seg,manuscript]{revtex}
\begin{document}
\bibliographystyle{seg}
```

2. The title, the author(s) and their affiliation are specified through a `\maketitle` command as in the **article** style[1].

   For example:

[1] LaTeX manual, section 2.2.2.

```
\title{Life with Geophones and Jugs}
\author{Popul R. Demand}
\address{Flat Land University, Green Acres, HW 99999}
\author{Joe E. Second}
\address{Arctic Oil, Sicily}
\maketitle
```

3. The abstract should be inserted using the **abstract** environment.

```
\begin{abstract}
The abstract is the most important ...
\end{abstract}
```

4. Each major heading should be typeset using the `\section` command.

```
\section{Introduction}
```

Headings of the next lowest rank should be typeset using the `\subsection` command.

```
\subsection{Historical Development}
```

For headings of lower rank typeset using the `\subsubsection` command.

```
\subsubsection{Middle Ages}
```

5. Acknowledgments should be placed before the reference list.

```
\section{Acknowledgment}
```

6. Citations and references should be formatted using the **bibliography** environment with citation[2], as shown in the `segskeleton.tex` sample file.

[2] LaTeX manual, section 4.3.1.

7. Appendices should be placed after the acknowledgments and the reference list. The appendices should be started by a `\appendix` command, and ordinary `\section` commands used to label each appendix. Appendices are automatically numbered as A, B, ... in the order of appearance. Equations in them are automatically numbered as (A-1), etc.

8. Figure and table captions can be placed anywhere in the paper using the **figure**, **plot** and **table** environments. The **plot** command is used to include encapsulated PostScript figures, and is described later in the manual.

For a comprehensive listing see the example file `segskeleton.tex`.

Additional Features:

Several more commands than usually encountered in LaTeX are available within this style package. The sample file exercises a few specific macros. If you are interested, we encourage you to read the complete REVTeX manual.

Adding New Macros

Some authors use specialized definitions, or macros, in their files. These definitions serve different purposes: some macros save the author from typing long character strings repetitively and some macros act as commands and environments to the TeX program.

The first kind of macros enables the author to replace a frequently used used long string by a shorter string. These macros are not very likely to cause trouble during the typesetting process.

The second kind however, defines or redefines TeX environments and can cause stylistic changes. Papers which define such environments are not eligible for electronic submission. Therefore we advise authors to restrain from using complicated macros and ask to suggest to the *Geophysics* Editor the inclusion of their macros.

> Modifications to the `seg.sty` file itself is not allowed, since it interferes with future enhancements of the style file. Instead, send your suggestions to the *Geophysics* Editor.

Figure Inclusion

Figures in PostScript format can be included into a **dvi** document. There are several TEX packages that allow such an inclusion. We decided on using one of the most common ones namely `epsf.sty` that comes with `dvips`. It was written by T. Rockicki and can be ftp'd from `labrea.stanford.edu` or many other sites that have TEX . The SEG style file relies on having `epsf.sty` installed and this will be the only package supported in seg.sty. `epsf` takes encapsulated PostScript and includes it into your TEX document. Be sure that your figures are **encapsulated PostScript** (EPSF) figures.

We encourage for PostScript figure inclusion to use the command `\plot` that is available in the SEG style file. This command takes three arguments:

```
\plot{file}{width=6.in,height=4.in}{caption....}
```

Using this command has several effects.

1. A file with the name `file.ps` is included.

2. A label `fig:file` is set for referencing, use `\ref{fig:file}`.

3. The figure is scaled to `width=6.in` and `height=6.in`. If only width is given then the height will be scaled accordingly, if only the height is given then the width will be scaled accordingly. If neither width nor height are given, then

the figure will be scaled such that the figure width is the same as the text width. (Remember to leave no spaces in the comma separated list of the second argument.)

4. A figure caption is produced.

Using this plot macro will allow for easy expandability at a later time, while leaving the author unaffected. For simplicity we suggest that plot files should be called something like FIG1.ps, FIG2.ps, etc.

When referencing a figure that is not included as an EPSF file, the **figure** command [3] should be used. (Using the **plot** command without an included EPSF figure will result in a LaTeX warning, but is otherwise harmless).

The SEG style file will automatically place a list of figures at the end of the paper, irrespective of whether the **figure** or **plot** command is used. This list will be followed by the figures themselves if EPSF files are included.

[3] LaTeX manual, sections 3.5.1 and C.8.1

FIGURES