Editorial Manager and \LaTeX, Best Friends

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About Me

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About Me

- \LaTeX{} experts are known as "wizards"

- I’m not a wizard, I’m just a nerd
- Have written scientific articles using \LaTeX{}
- Developed the American Meteorological Society’s \LaTeX{} template for authors
- Provide support for \LaTeX{} authors submitting manuscripts to the AMS via Editorial Manager
Pronunciation

How to pronounce \TeX{} and \LaTeX{}?
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How to pronounce \TeX \ and \LaTeX?  

- \TeX \ is a rendering of the Greek letters $\tau \epsilon \chi$  
- $\tau \epsilon \chi$ is the root for words like "technology" and also means "art"  
- Because the last letter is meant to represent $\chi$, it is pronounced like "tech"  
- I am not discussing a synthetic form of rubber or plastic (latex)
TEX vs Plain TEX vs LATEX

Computers and Typsetting by Donald Knuth, 1984:

\textit{TEX is a typesetting system intended for the creation of beautiful books—and especially for books that contain a lot of mathematics}
TEX vs Plain TEX vs LATEX

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- TEX is the underlying system and was developed from 1978–1989
- Plain TEX was developed as an interface to the TEX system
- LATEX was developed in the mid 1980s and is still in development
- LATEX provides a set of higher level commands used to format documents, the underlying system is still TEX
Parts of the System

1 Distributions

- Collections of TeX-related software
- e.g., TeXLive, MacTeX, MikTeX, ProTeXt, BakomaTeX, etc.
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2. Engine
   - \TeX{} or pdf\TeX{}
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   - \TeX-based languages in which authors write their documents
   - e.g., Plain \TeX, \LaTeX, etc.
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4. Packages
   - Add ons to the existing \TeX system to provide additional functionality, features, fonts, etc.
   - Developed independently
   - e.g., geometry, lineno, amsmath, etc.
Inputs

1. Classes (.cls)
   - Provide default layout for certain types of documents
   - e.g., book.cls, article.cls, report.cls, etc.
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4. Style files (.sty and .bst)
   - Can be used to modify the default layout and functionality defined in the class file and format references
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6. **Source file(s) (.tex)**
   - Contains the actual text of the manuscript
   - References (or calls) the above files as needed
Creating a PDF with \LaTeX

![Diagram showing the process of creating a PDF with \LaTeX](image-url)
Example of Input .tex File

% DOUBLE SPACE VERSION FOR SUBMISSION TO THE AMS
\documentclass[12pt]{article}
\usepackage{amsart}
\begin{abstract}
% The following two commands will generate a single space, double column paper that closely
% matches an AMS journal page. Uncomment these commands to generate this output (and comment
% out the two lines above. FOR AUTHOR USE ONLY, PAPERS SUBMITTED IN THIS FORMAT WILL BE RETURNED
% TO THE AUTHOR for submission with the correct formatting).
% TWO-COLUMN JOURNAL PAGE LAYOUT FOR AUTHOR USE ONLY
% \%\documentclass[10pt]{article}
% \%\usepackage{amsmath}
% \%
% \% ABSTRACT
% \%
% \% Enter your Abstract here
% \newcommand{\abstracttext}{Enter the text of your abstract here. This is a sample American Meteorological Society (AMS) \LaTeX\ template. This document provides authors with both a \LaTeX\ template and basic AMS formatting guidelines to be used when writing a paper. Authors should refer to the file amspaper.tex to review the actual \LaTeX\ code used to create this document. The amspaper.tex (previously named \template.tex) file can then be modified by authors for their own manuscripts. The abstract should be no longer than 250 words in length. The abstract should not contain any mathematical expressions, should include no\n% figures or citations, and should not contain first person sentence structure.)
\begin{document}
\%
% TITLE
\%
% Enter your TITLE here
\title{Title: A Sample American Meteorological Society \LaTeX\ Document}
\%
% Author names, with corresponding author information.
% [Update and move the \thanks\ to begin as appropriate.]
\author{[Author\textsuperscript{[author]}] [Author\textsuperscript{[author]}]
  \textsuperscript{[Corresponding author address]} [Brian Papa, American Meteorological Society, 43 Beacon St., Boston, MA 02114.]
  \textsuperscript{[E-mail: latex@ametsoc.org]} [(hqu@meta.tex and Sarah Cooley)]
  \textsuperscript{[Webpage]} [American Meteorological Society, Boston, Massachusetts]}
\begin{document}
\abstract{[abstract text]}
\end{abstract}
\end{document}
Example of PDF Output
Example of PDF Output

Abstract

Enter the text of your abstract here. This is a sample American Meteorological Society (AMS) \LaTeX{} template. This document provides authors with both a \LaTeX{} template and basic AMS formatting guidelines to be used when writing a paper. Authors should refer to the file amspaper.tex to review the actual \LaTeX{} code used to create this document. The amspaper.tex (or preferably blank_template.tex) file can then be modified by authors for their own manuscript. The abstract should be no longer than 250 words in length. The abstract should not contain any mathematical expressions, should include no footnotes or citations, and should not contain first-person sentence structure.
1. Introduction

This document will provide authors with the basic American Meteorological Society (AMS) formatting guidelines. This document was created using \LaTeX{} and demonstrates how to use the \LaTeX{} template when submitting a manuscript to the AMS. The following sections will outline the guidelines and formatting for text, math, figures, and tables while using \LaTeX{}. An attempt to compile `amplpaper.tex` should be made before using the template. The files have been tested on Windows XP, Linux, and Mac OS using \TeX{} Live 2010 (available online at http://www.tug.org/texlive/). Feedback and questions should be sent to latex@ametsoc.org. Additional information is available on the AMS \LaTeX{} FAQ Web page (available online at http://www.ametsoc.org/pubs/journals/LaTeXFAQ.html).

Authors may use the empty template `blank_template.tex` to begin their paper. A valuable source of \LaTeX{} information are the Ten Frequently Asked Questions (available online at `faq.tug.org`).

2. Formatting text and sections

The text should be divided into sections, each with a separate heading and consecutive
Example of PDF Output
4. Formatting math

The following sections will outline the basic formatting rules for mathematical symbols and units. In addition, a review of the auxapaper.aux file will show how this is done with the use of \LaTeX commands. The AMS template provides the American Mathematical Society math, font, symbol, and boldface packages for use in math mode.

a. Mathematical symbols

Symbols must be of the same font style both in text discussion and in displayed equations or terms (and figures should be prepared to match). Scalar single character symbols are set italic, Greek, or script. Examples are $a$, $L$ [note that $w$ (Greek sigma) is used instead of $v$ (italic "vee") to avoid confusion with $v$ (Greek nu)] often used for viscosity; this is handled automatically when in \LaTeX mode, $w_0$, $x$, $y$, $z$, $f$, $g$, $r$, indices such as $i$ or $j$, and constants such as $C_0$, $k$, or $K$. Multiple character scalar variables, abbreviations, insufficiently many letters, and acronyms for variables are set regular nonscale: LWC, Re, Ro, BT, abs, abs, max, min, Re/$i$ (real/imaginary), etc. For vectors, use boldface nonscale Times Roman as in $\vec{v}$, $\vec{w}$, or $\vec{x}$, and $i$, $j$, and $k$ unit vectors. Do not use the \LaTeX \verb|\vec| command to denote vectors. For matrix notation use nonscale boldface Arial (or Sans Serif) font as in $\mathbf{A}$, $\mathbf{B}$, or $\mathbf{M}$. All mathematical operator abbreviations/acronyms are set lowercase regular Roman font, except $O$ (on the order of): $\sin$, $\cos$, $\tan$, $\sec$, $\csc$, $\Pr$ (for probability; note same as Prandtl number), $\text{const}$ (for constant), $\text{etc.}$ (complex conjugate).

b. Units

Units are always set on a single line with a space separating the numerator, which is set with a superscript
Example of Bibliography File Input

@article{Becker+Schmitz2003,
    author = {E. Becker and G. Schmitz},
    title = {Climatological effects of orography and land--sea heating contrasts on the gravity wave--driven circulation of the mesosphere},
    journal = {J. Atmos. Sci.},
    year = {2003},
    volume = 60,
    pages = {103--118}}
REFERENCES

Why Not Just Use Microsoft Word?

versus
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versus

- You can focus on content instead of typesetting and layout (references, citations, figures, equation/figure numbering, formatting is all handled by \LaTeX)
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versus

- You can focus on content instead of typesetting and layout (references, citations, figures, equation/figure numbering, formatting is all handled by $\LaTeX$)
- You can generate professional quality typeset documents
- Math is formatted as well as the best typsetting system
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- It runs on all operating systems (Linux/Unix, Mac, and Windows)
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- You can focus on content instead of typesetting and layout (references, citations, figures, equation/figure numbering, formatting is all handled by LaTeX)
- You can generate professional quality typeset documents
- Math is formatted as well as the best typesetting system
- It runs on all operating systems (Linux/Unix, Mac, and Windows)
- It is free
Who uses \LaTeX? 

- Widely used by authors that have mathematics in their manuscripts
- Used by mathematicians, physical scientists, etc.
- Widely used for writing books, articles, and theses
- Can also be used for other types of documents (e.g., presentations, resumes, etc.)
Editorial Manager for \LaTeX\ Authors

- EM uses the TeXLive distribution
  - Excellent, widely used distribution
- EM provides full support for all figure file types (.pdf, .eps, .jpg, and .png)
- When errors (in the author’s files) are found the system will display the log file to the author
  - This is useful for identifying the source of the problem
Editorial Manager and \LaTeX{} Workflow

About Me
The Most Basic Basics
The \TeX{} System
Workflow and Examples
The Who? and Why? of \LaTeX{}
Editorial Manager and \LaTeX{}
Final Thoughts
Potential Problems

- Authors that leave directory paths to figure files in their main .tex file
- Authors that ignored errors on their system when compiling the code
- Authors that try to use unsupported figure file types (.tiff)
- Authors that do not include the figure file extension in the figure file name
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It can be helpful to have someone knowledgeable with LaTeX to quickly resolve these issues for confused authors
Resources

- TeX Users Group (TUG; www.tug.org)
- Comprehensive TeX Archive Network (CTAN; www.ctan.org)
- TeX FAQ (http://www.tex.ac.uk/cgi-bin/texfaq2html)
- Editors/Compilers
  - TeXnicCenter (http://www.texniccenter.org/): Compiler/editor/previewer for Windows
  - TeXShop (http://pages.uoregon.edu/koch/texshop/): Compiler/editor/previewer for Mac
Resources

- **Books**
  - A Guide to LaTeX2e, by Helmut Kopka and Patrick Daly (fourth edition, 2003). Covers core LaTeX from the ground up, and discusses commonly used packages for graphics, web integration, and more.
  - The LaTeX Companion, by Frank Mittelbach, Michel Goossens, Johannes Braams, David Carlisle, and Chris Rowley (second edition, 2004). Also covers core LaTeX, plus a vast array of additional packages.

- **Guides**
  - Not So Short Guide to LaTeX
    (http://tug.ctan.org/tex-archive/info/lshort/)
Questions?