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ABSTRACT

Enter the text of your abstract here. This is a sample American Meteorological Society (AMS) LaTeX template. This document provides authors with instructions on the use of the AMS LaTeX template. Authors should refer to the file amspaper.tex to review the actual LaTeX code used to create this document. The template.tex file should be modified by authors for their own manuscript.

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/ for a submission to the AMS. An attempt to compile amspaper.tex should be made before using the template. The files have been tested on Windows, Linux, and Mac OS using TeX Live 2011 (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 Submission Info web page (`http://www2.ametsoc.org/ams/index.cfm/publications/authors/journal-and-bams-authors/author-resources/latex-author-info/`).

Authors should use the empty template.tex to begin their paper. A valuable source of LaTeX information is the {TeX Frequently Asked Questions} page (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 numbering. Note, however, that single secondary, tertiary, and quaternary sections remain unnumbered. Each section heading should be placed on a separate line using the appropriate LaTeX commands.

Secondary headings

Secondary headings labeled with letters are formatted using the `## Secondary headings {-}` for a single subsection within a section or `## Secondary headings` for multiple subsections within one section.

Tertiary headings

Tertiary headings are formatted using the `### Tertiary headings {-}` for single a subsubsection within a subsection or `### Tertiary headings` for multiple subsubsections within a subsection.

Quaternary headings Quaternary headings are formatted using the `\paragraph*{Quaternary headings}` for a single paragraph within a subsubsection or `\paragraph{Quaternary headings}` for multiple paragraphs within a subsection.

3. Citations

Citations to standard references in text should consist of the name of the author and the year of publication, for example, Pöhlker et al. (2012) or (Pöhlker et al. 2012; Alexander et al. 2002; Gershunov and Guirguis 2012) using the appropriate `@key` or `[@key]` commands, respectively. A variety of citation formats can be used with the natbib package; however, the AMS prefers that authors use only the `@key` and `[@key]` commands. References should be entered in the references.bib file. For a thorough discussion of how to enter references into the references.bib database file following AMS style, please refer to the **AMS_Refs.pdf** document included in this package.

4. Formatting math

The following sections will outline the basic formatting rules for mathematical symbols and units. In addition, a review of the amspaper.tex 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 u, L [note that υ (Greek upsilon) is used instead of v (italic "vee") to avoid confusion with ν (Greek nu) often used for viscosity; this is handled automatically when in LaTeX math mode], w, x, y, z, f, g, r, indices such as i or j, and constants such as C_D, k, or K. Multiple-character scalar variables, abbreviations, nondimensional numbers, and acronyms for variables are set regular nonitalic: LWC, Re, Ro, BT, abs, obs, max, min, Re/Im (real/imaginary), etc. For vectors, use boldface nonitalic Times Roman as in **V**, **v**, or **x**, and **i**, **j**, and **k** unit vectors. Do not use the LaTeX *vec* command to denote vectors. For matrix notation, use nonitalic boldface Arial (or sans serif) font as in A, B, or M. Note that you will need to use the \pmb command for boldface sans serif; the \bm command will not work. All mathematical operator abbreviations/acronyms are set lowercase regular Roman font, except O (on the order of): sin, cos, tan, tanh, cov, Pr (for probability; note same as Prandtl number), const (for constant), c.c. (complex conjugate).

b. Units

Units are always set on a single line with a space separating the denominator, which is set with a superscript -1, -2, and so on, rather than using a slash for "per." Examples are g kg^{-1}, m^2 s^{-1}, Wm^{-2}, g m^{-3}, and m s^{-1} (note that ms^{-1} is the unit for "per millisecond").

c. Equations

Brief equations or terms set inline in text must be set as a single-line expression because page proofs are not double spaced, for example, $\rho^{-1}p/x$ or $(1/\rho)p/x$ or $(a-b)/(c+d)$; that is, use a

superscript -1 for the denominator. In case of a more complicated term or equation, it should be set as an unnumbered display equation, such as

$$x = \frac{2b \pm \sqrt{b^2 - 4ac}}{2c}.$$

Otherwise, numbered display equations can be entered using the appropriate equation command, such as

$$x = \frac{2b \pm \sqrt{b^2 - 4ac}}{2c}. \tag{1}$$

Lists of equations are punctuated as written English, and commas, semicolons, and periods are placed where appropriate. Conjunctions such as "and", "while", "when", or "for" are also typically placed before the final element in a mathematical phrase, as befits the intended mathematical meaning.

d. Figures and tables

The AMS prefers that all figures and tables are placed **at the end of the document** prior to submission. A list of tables and a list of figures will appear near the end of the PDFfile, before the actual tables and figures. These lists are necessary for submission.

For appendix figures and tables, special commands are needed to manually change the numbering to ensure that each appendix figure or table is numbered as part of the respective appendix and not as a continuation of the main paper. Use the command `\appendcaption{}` instead of the usual `caption{}` to adjust the numbering; for example, for Table A1, you would use the command `\appendcaption{A1}`.

Note that the normal \ref{} command cannot be used to cite appendix figures and tables as the numbering will be incorrect. Callouts for appendix figures and tables in the text will need to be written out as plain text, for example, Fig. A1 and Table A1.

1) FIGURES

The insertion of a sample figure (Fig. 1)
and caption is given below (in the .tex document) and at the end of the document. Standard figure sizes are 19 (one column), 27, 33, and 39 (two columns) picas.

2) TABLES

Each table must be numbered, provided with a caption, and mentioned specifically in the text. See below (in the .tex document) and at the end of the document for the formatting of a sample table (Table 1).

Acknowledgments. Keep acknowledgments (note correct spelling: no e between the g and m) as brief as possible. In general, acknowledge only direct help in writing or research. Financial support (e.g., grant numbers) for the work done, for an author, or for the laboratory where the work was performed is best acknowledged here rather than as footnotes to the title or to an author's name. Contribution numbers (if the work has been published by the author's institution or organization) should be included as footnotes on the title page, not in the acknowledgments.

Please use The authors thank . . . rather than The authors would like to thank . . . .

The author thanks Mats Dahlgren for version one of achemso, and Donald Arseneau for the code taken from cite to move citations after punctuation. Many users have provided feedback on the class, which is reflected in all of the different demonstrations shown in this document.

APPENDIX A

Title of Appendix

a. Appendix section

The AMS template allows authors to format an unlimited number of appendixes. To format a single appendix, use the `\appendix` command with no additional argument. Otherwise, add the appropriate one-letter argument to the `\appendix` command (e.g. `\appendix[A]`, `\appendix[B]`, `\appendix[C]`, etc.) corresponding to the appropriate appendix.

The title of the appendix can be formatted using the `\appendixtitle{}` command. The `##` , `###` and `\paragraph` commands are used to create sections within the appendix. (Note that the appendix title takes the place of `#` in the appendix, so the first section should begin with `##` instead of `#`.)

Equations are automatically numbered appropriately for each appendix. Here is an example of the first equation in appendix A, automatically labeled (A1):

$$x = \frac{2b \pm \sqrt{b^2 - 4ac}}{2c}. \tag{A1}$$

For appendix figures and tables, special commands are needed to manually change the numbering to ensure that each appendix figure or table is numbered as part of the appendix and not as a continuation of the main paper. Use the command `\appendcaption{}` instead of the usual `\caption{}` to adjust the numbering; for example, for Table A1, you would use the command `\appendcaption{A1}`. In-text callouts for each appendix figure and table will need to be written as plain text;the usual `\ref{}` command cannot be used.

APPENDIX B

File Structure of the AMS LaTeX Package

a. AMS LaTeX files

You will be provided with a tarred, zipped LaTeX package containing 3 files. These files are

your-paper-name.Rmd template for your paper

amstest.bib an example of a bibliographic database file.

figure01.pdf are sample figures.

b. Help for Authors

Questions and feedback concerning the use of the AMS LaTeX files should be directed to latex@ametsoc.org or yufreecas@gmail.com(for rmarkdown issues). Additional information is available on the AMS LaTeX Submission Info web page (`http://www2.ametsoc.org/ams/index.cfm/publications/authors/journal-and-bams-authors/author-resources/latex-author-info/`).

APPENDIX C

Building a PDF and Submitting Your LaTeX Manuscript Files to the AMS

a. Building your own PDF

There are a variety of different methods and programs that will create a final PDF from your LaTeX files. The easiest method is to download one of the freely available text editors/compilers such as Rstudio to compile your files into a PDF.

b. Submitting your files to the AMS for peer review

The AMS uses the Editorial Manager system for all author submissions for peer review. Editorial Manager uses the freely available TeX Live 2011 distribution. This system will automatically

generate a PDF from your submitted LaTeX files and figures(not Rmd file, tex files will be produced when you successful knit your Rmd file).

You should not upload your own PDF into the system. If the system does not build the PDF from your files correctly, refer to the AMS LaTeX FAQ page first for possible solutions. If your PDF still does not build correctly after trying the solutions on the FAQ page, email latex@ametsoc.org for help.

c. Other software

As mentioned above, there is a variety of software that can be used to edit .tex files and build a PDF. The AMS does not support LaTeX/-related WYSIWYG software, such as Scientific Workplace, or WYSIWYM software, such as LyX. TeX Live (available online at \ `http://www.tug.org/texlive/`) is recommended for users needing an up-to-date LaTeX distribution with software that includes an editor and the ability to automatically generate a PDF.

References

Alexander, M. A., I. Bladé, M. Newman, J. R. Lanzante, N.-C. Lau, and J. D. Scott, 2002: The atmospheric bridge: The influence of ENSO teleconnections on air–sea interaction over the global oceans. *J. Climate*, **15**, 2205–2231, doi:10.1175/1520-0442(2002)015<2205:tabtio>2.0.co;2.

Gershunov, A., and K. Guirguis, 2012: California heat waves in the present and future. *Geophys. Res. Lett.*, **39**, doi:10.1029/2012GL052979.

Pöhlker, C. and Coauthors, 2012: Biogenic potassium salt particles as seeds for secondary organic aerosol in the Amazon. *Science*, **337**, 1075–1078.

LIST OF TABLES

TABLE 1. This is a sample table caption and table layout.

N	*X*	*Y*	*Z*
0000	0000	0010	0000
0005	0004	0012	0000
0010	0009	0020	0000
0015	0016	0036	0002
0020	0030	0066	0007
0025	0054	0115	0024

Table A1. Here is the appendix table caption.

1	2	3
a	b	c
d	e	f

LIST OF FIGURES

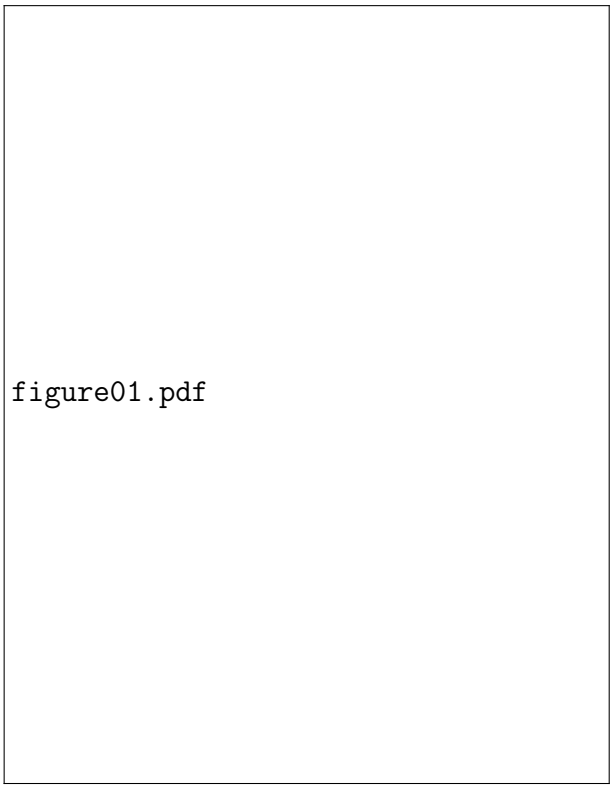

FIG. 1. Enter the caption for your figure here. Repeat as necessary for each of your figures.

FIG. 2. test the rmd output

(illustration here)

Fig. A1. Here is the appendix figure caption.

(illustration here)

Fig. B1. Here is the appendix figure caption.