Title of the Manuscript

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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 amspaperV6.1.tex to review the actual LaTeX code used to create this document. The templateV6.1.tex file should be modified by authors for their own manuscript.

SIGNIFICANCE STATEMENT: Enter significance statement here, no more than 120 words. See www.ametsoc.org/index.cfm/ams/publications/author-information/significance-statements/ for details.

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 amspaperv6.1.tex should be made before using the template. The files have been tested using TeX Live 2020 (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 (www.ametsoc.org/pubslatex).

Authors should use the empty templatev6.1.tex to begin their paper. A valuable source of LaTeX information is the TeX Frequently Asked Questions page (available online at https://texfaq.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 \subsection*{} for a single subsection within a section or or \subsection{} for multiple subsections within one section.

Tertiary headings

Tertiary headings are formatted using the \subsubsection*{} for single a subsubsection within a subsection or \subsubsection{} for multiple subsubsections within a subsection.

Quaternary headings Quaternary headings are formatted using the \paragraph*{} for a single paragraph within a subsubsection or \paragraph{} 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, Becker and Schmitz (2003) or (Becker and Schmitz 2003) using the appropriate \citet or \citep commands, respectively. A variety of citation formats can be used with the natbib package; however, the AMS prefers that authors use only the \citet and \citep 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_RefsV6.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**. 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}, W m^{-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.

5. Figures and tables

a. Figures

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

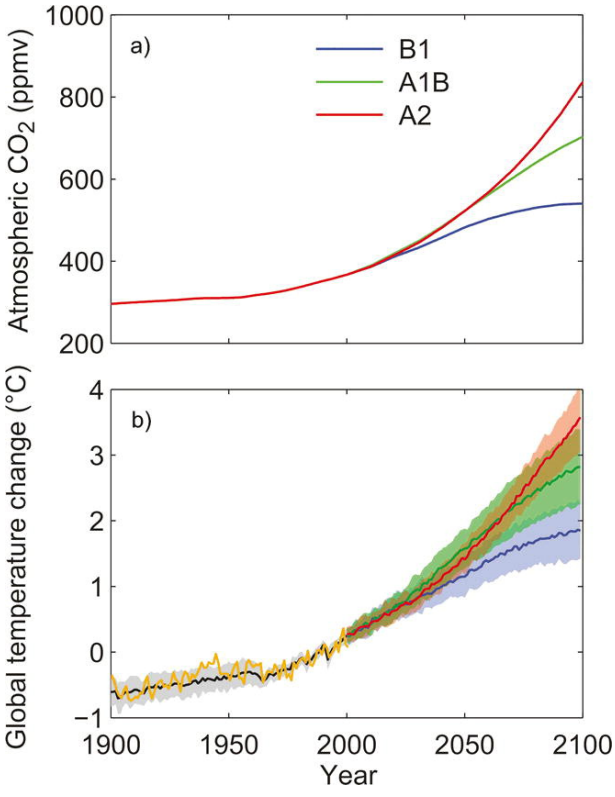

FIG. 1. Enter the caption for your figure here. Repeat as necessary for each of your figures. Figure from Knutti et al. (2008).

b. Tables

Each table must be numbered, provided with a caption, and mentioned specifically in the text. See below for sample table formatting (Tables 1 and A1).

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
0014	0010	0029	0005

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 must be 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 placed in the acknowledgments rather than as footnotes to the title or to an author’s name.

Data availability statement. The data availability statement is where authors should describe how the data underlying the findings within the article can be accessed and reused. Authors should attempt to provide unrestricted access to all data and materials underlying reported findings. If data access is restricted, authors must mention this in the statement. See http://www.ametsoc.org/PubsDataPolicy for more details.

APPENDIX A

Title of Appendix

Appendix section

The AMS template allows authors to format an unlimited number of appendixes. [Note: AMS follows the Chicago Manual of Style, which uses "appendixes" as the plural instead of "appendices."] 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 \subsection, \subsubection, and \paragraph commands are used to create sections within the appendix. (Note that the appendix title takes the place of \section in the appendix, so the first section should begin with \subsection instead of \section.) Equations are automatically numbered appropriately for each appendix. Here is an example of the first equation in appendix A, automatically labeled (A1):

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

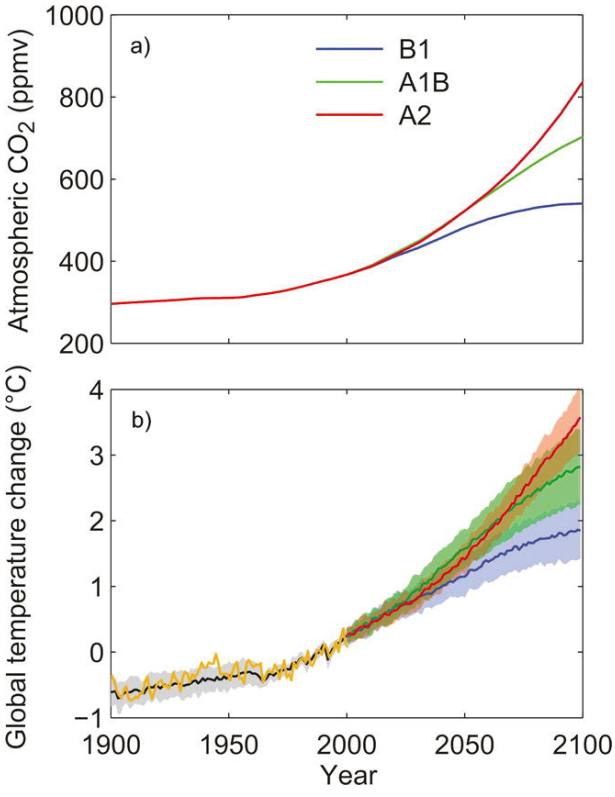

FIG. A1. Here is the figure caption for Fig. A1.

N	*X*	*Y*	*Z*	*A*	*B*	*C*	*D*
25	1	10	0.60	100	4	80	0.02
50	2	20	1.70	100	4	80	0.02
75	3	40	2.44	100	4	80	0.02
100	4	80	0.02	100	4	80	0.02
100	4	80	0.02	100	4	80	0.02
100	4	80	0.02	100	4	80	0.02
100	4	80	0.02	100	4	80	0.02

TABLE A1. This is sample Table A1.

Appendix figures and tables are now numbered automatically using the standard commands [i.e., the special \appendcaption command that was necessary in v5 has been omitted.] (Figs. A1 and A2 and Table A1).

APPENDIX B

File Structure of the AMS LaTeX Package

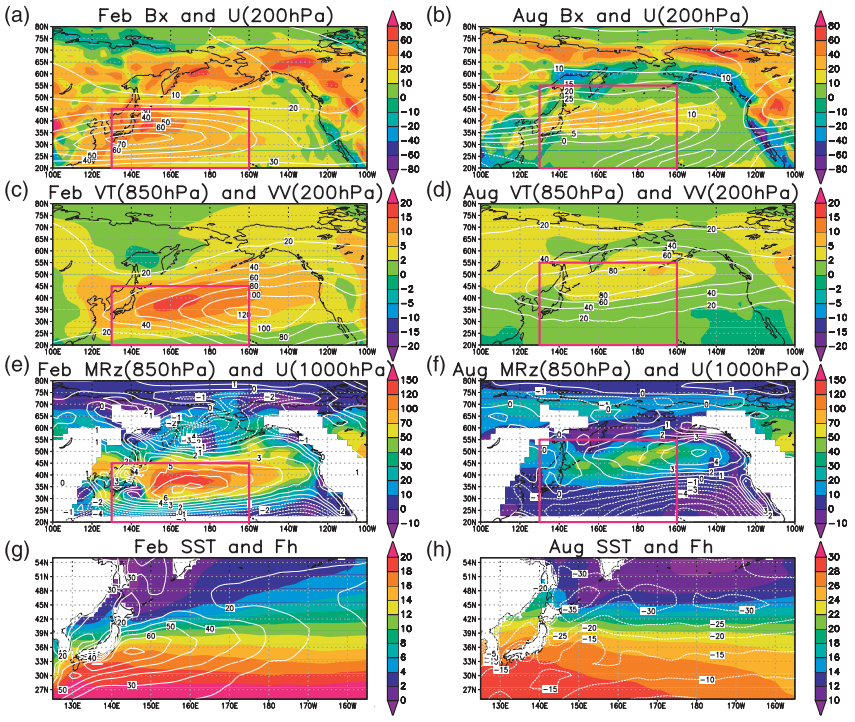

FIG. A2. Here is the figure caption for Fig. A2.

a. AMS LaTeX files

You will be provided with a tarred, zipped LaTeX package containing 17 files. These files are

Basic style file: ametsocV6.1.cls.

The file ametsocv6.1.cls is the manuscript style file.

- Using `\documentclass{ametsocv6.1}` for your .tex document will generate a PDF that follows all AMS guidelines for submission and peer review.
- Using `\documentclass[twocol]{ametsocv6.1}` for your .tex document can be used to generate a PDF that closely follows the layout of an AMS journal page, including single spacing and two columns. This journal style PDF is only for the author's personal use, and any papers submitted in this style will not be accepted.

Always use `\documentclass{ametsocv6.1}` when generating a PDF for submission to the AMS.

Template: templatev6.1.tex, for the author to use when making their paper. The file provides a basic blank template with some section headings for authors to easily enter their manuscript.

Sample .tex and .pdf files: The file amspaperv6.1.tex contains the LaTeX code for the sample file. The resulting PDF can be seen in amspaperv6.1.pdf (this file).

Sample article: Article formatted in draft and two-column mode.

- amssamp1v6.1.tex, amssamp1v6.1.pdf
  Formal paper done in draft mode and the resulting .pdf.
- amssamp2v6.1.tex, amssamp2v6.1.pdf
  The same paper using the `[twocol]` option and the resulting .pdf.
- FigOne.pdf, FigTwo.pdf, and figure01.pdf are sample figures.

Bibliography Files: ametsocV6.bst, database2020.bib, and references.bib.

- ametsocV6.bst is the bibliography style file.
- database2020.bib is an example of a bibliographic database file.
- references.bib should be altered with your own bibliography information.

Documention: found in AMSDocsV6.1.pdf. Additional information found in readme.txt, which contains a list of the files and how they are used.

b. Help for Authors

Questions and feedback concerning the use of the AMS LaTeX files should be directed to latex@ametsoc.org. Additional information is available on the AMS LaTeX Submission Info web page (`www.ametsoc.org/pubslatex`).

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 TexWorks or TeXnicCenter. TexWorks is installed with the TeXLive distribution and provides both a text editor and the ability 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 2020 distribution. This system will automatically generate a PDF from your submitted LaTeX files and figures.

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.

This shows how to enter the commands for making a bibliography using BibTeX. It uses references.bib and the ametsocV6.bst file for the style.

References

Becker, E., and G. Schmitz, 2003: Climatological effects of orography and land–sea heating contrasts on the gravity wave–driven circulation of the mesosphere. *J. Atmos. Sci.*, **60**, 103–118, https://doi.org/10.1175/1520-0469(2003)060<0103:CEOOAL>2.0.CO;2.

Knutti, R., and Coauthors, 2008: A review of uncertainties in global temperature projections over the twenty-first century. *J. Climate*, **21**, 2651–2663, https://doi.org/10.1175/2007JCLI2119.1.