

1     **A Sample American Meteorological Society L<sup>A</sup>T<sub>E</sub>X Document**

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## ABSTRACT

5 Enter the text of your abstract here. This is a sample American Meteorological Society  
6 (AMS)  $\LaTeX$  template. This document provides authors with instructions on the use  
7 of the AMS  $\LaTeX$  template. Authors should refer to the file `amspaper.tex` to review  
8 the actual  $\LaTeX$  code used to create this document. The `amspaper.tex` (or preferably  
9 `blank.template.tex`) file can then be modified by authors for their own manuscript.

# 10 **1. Introduction**

11 This document will provide authors with the basic American Meteorological Society  
12 (AMS) formatting guidelines. This document was created using L<sup>A</sup>T<sub>E</sub>X and demonstrates  
13 how to use the L<sup>A</sup>T<sub>E</sub>X template when submitting a manuscript to the AMS. The following  
14 sections will outline the guidelines and formatting for text, math, figures, and tables while  
15 using L<sup>A</sup>T<sub>E</sub>X for a submission to the AMS. An attempt to compile `amspaper.tex` should be  
16 made before using the template. The files have been tested on Windows, Linux, and Mac OS  
17 using T<sub>E</sub>X Live 2011 (available online at <http://www.tug.org/texlive/>). Feedback and  
18 questions should be sent to [latex@ametsoc.org](mailto:latex@ametsoc.org). Additional information is available on the  
19 AMS L<sup>A</sup>T<sub>E</sub>X FAQ Web page (available online at [http://www.ametsoc.org/pubs/journals/  
20 LaTeXFAQ.html](http://www.ametsoc.org/pubs/journals/LaTeXFAQ.html)).

21 Authors should use the empty template `blank_template.tex` to begin their paper. A  
22 valuable source of L<sup>A</sup>T<sub>E</sub>X information are the *Tex Frequently Asked Questions* (available  
23 online at [faq.tug.org](http://faq.tug.org)).

## 24 **2. Formatting text and sections**

25 The text should be divided into sections, each with a separate heading and consecutive  
26 numbering. Note, however, that single secondary, tertiary, and quaternary sections remain  
27 unnumbered. Each section heading should be placed on a separate line using the appropriate  
28 L<sup>A</sup>T<sub>E</sub>X commands.

### 29 *Secondary headings*

30 Secondary headings labeled with letters are formatted using the `\subsection*` or `\subsection`  
31 command for single (as in this case) or multiple secondary sections, respectively.

32 TERTIARY HEADINGS

33 Tertiary headings are formatted using the `\subsubsection*` or `\subsubsection` command.

34 *Quaternary headings*

35 Quaternary headings are formatted using the `\paragraph*` or `\paragraph` command.

### 36 **3. Citations**

37 Citations to standard references in text should consist of the name of the author and the  
38 year of publication, for example, Becker and Schmitz (2003) or (Becker and Schmitz 2003)  
39 using the appropriate `\cite` or `\citep` commands, respectively. A variety of citation formats  
40 can be used with the `natbib` package. Refer to documentation on the `natbib` package for  
41 more information on the basic citation commands (available online at <http://www.ctan.org/tex-archive/help/Catalogue/entries/natbib.html>). References should be entered  
42 in the `references.bib` file. For a thorough discussion of how to enter references into the  
43 `references.bib` database file following AMS style please refer to the **AMS\_references.pdf**  
44 document included in this package.  
45

### 46 **4. Formatting math**

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

51 *a. Mathematical symbols*

52 Symbols must be of the same font style both in text discussion and in displayed equations  
53 or terms (and figures should be prepared to match). Scalar single character symbols are set  
54 italic, Greek, or script. Examples are  $u$ ,  $L$  [note that  $v$  (Greek upsilon) is used instead  
55 of  $v$  (italic “vee”) to avoid confusion with  $\nu$  (Greek nu) often used for viscosity; this is  
56 handled automatically when in L<sup>A</sup>T<sub>E</sub>X math mode],  $w$ ,  $x$ ,  $y$ ,  $z$ ,  $f$ ,  $g$ ,  $r$ , indices such as  $i$  or  
57  $j$ , and constants such as  $C_D$ ,  $k$ , or  $K$ . Multiple character scalar variables, abbreviations,  
58 nondimensional numbers, and acronyms for variables are set regular nonitalic: LWC, Re, Ro,  
59 BT, abs, obs, max, min, Re/Im (real/imaginary), etc. For vectors, use boldface nonitalic  
60 Times Roman as in  $\mathbf{V}$ ,  $\mathbf{v}$ , or  $\mathbf{x}$ , and  $\mathbf{i}$ ,  $\mathbf{j}$ , and  $\mathbf{k}$  unit vectors. Do not use the L<sup>A</sup>T<sub>E</sub>X `\vec`  
61 command to denote vectors. For matrix notation use nonitalic boldface Arial (or Sans Serif)  
62 font as in  $\mathbf{A}$ ,  $\mathbf{B}$ , or  $\mathbf{M}$ . All mathematical operator abbreviations/acronyms are set lowercase  
63 regular Roman font, except  $O$  (on the order of): sin, cos, tan, tanh, cov, Pr (for probability;  
64 note same as Prandtl number), const (for constant), c.c. (complex conjugate).

65 *b. Units*

66 Units are always set on a single line with a space separating the denominator, which is  
67 set with a superscript  $-1$ ,  $-2$ , and so on, rather than using a slash for “per.” Examples  
68 are  $\text{g kg}^{-1}$ ,  $\text{m}^2 \text{s}^{-1}$ ,  $\text{W m}^{-2}$ ,  $\text{g m}^{-3}$ , and  $\text{m s}^{-1}$  (note that  $\text{ms}^{-1}$  is the unit for “per  
69 millisecond”).

70 *c. Equations*

71 Brief equations or terms set inline in text must be set as a single line expression because  
72 page proofs are not double spaced, for example,  $\rho^{-1}p/x$  or  $(1/\rho)p/x$  or  $(a-b)/(c+d)$ ; that is,  
73 use a superscript  $-1$  for the denominator. In case of a more complicated term or equation,

74 it should be set as an unnumbered display equation, such as

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

75 Otherwise, numbered display equations can be entered using the appropriate `\equation com-`  
76 `mand`, such as

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

77 Lists of equations are punctuated as written English, and commas, semicolons, and pe-  
78 riods are placed where appropriate. Conjunctions such as “and,” “while,” “when,” or “for”  
79 are also typically placed before the final element in a mathematical phrase, as befits the  
80 intended mathematical meaning.

## 81 **5. Figures and tables**

### 82 *a. Figures*

83 The insertion of a sample figure (Fig. 1) and caption is shown above. Standard figure  
84 sizes are 19 (one column), 27, 33, and 39 (two columns) picas.

### 85 *b. Tables*

86 Each table must be numbered, provided with a caption, and mentioned specifically in the  
87 text. Each table should be in double-spaced format on a separate page, with an explanatory  
88 caption typed above the table on the same page. All tables should be attached at the end of  
89 the manuscript, following the figure legends. See below for the formatting of a sample table  
90 (Table 1).

91     *Acknowledgments.*

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

## Appendix Title Is Entered Here

102 *Appendix section*

103 The AMS template allows authors to format an unlimited number of appendixes. To for-  
104 mat a single appendix, use the `\appendix` command with no additional argument. Otherwise,  
105 add the appropriate one-letter argument to the `\appendix` command (e.g. `\appendix[A]`,  
106 `\appendix[B]`, `\appendix[C]`, etc.) corresponding to the appropriate appendix. The title  
107 of the appendix can be formatted using the `\section*` command as shown above (which also  
108 provides code for centering). The `\subsection`, `\subsubsection`, and `\paragraph` commands  
109 are used to create sections within the appendix. Equations are automatically numbered  
110 appropriately for each appendix. Here is an example of the first equation in appendix A,  
111 automatically labeled (A1),

$$x = \frac{2b \pm \sqrt{b^2 - 4ac}}{2c}. \quad (\text{A1})$$



## APPENDIX B

112

113

114

### File structure of the AMS L<sup>A</sup>T<sub>E</sub>X Package

115 *AMS L<sup>A</sup>T<sub>E</sub>X files*

116 You will be provided with a tarred, zipped L<sup>A</sup>T<sub>E</sub>X package containing eleven files: amspa-  
117 per.tex, blank\_template.tex, ametsoc.sty, ametsoc2col.sty, amspaper.pdf, amspaper2col.pdf,  
118 figure01.pdf, AMS\_references.pdf, ametsoc.bst, database.bib, and references.bib. You should  
119 alter references.bib with your own bibliography information. Refer to the AMS\_references.pdf  
120 file included in this package for information on how to properly populate the references.bib  
121 file. The files ametsoc.sty and ametsoc2col.sty are the two manuscript style files. The file  
122 ametsoc.sty generates a PDF that follows all AMS guidelines for submission and peer review.  
123 The file ametsoc2col.sty can be used to generate a PDF that closely follows the layout of an  
124 AMS journal page, including single spacing and two columns. This journal style PDF is only  
125 for the author's personal use, and any papers submitted in this style will not be accepted.  
126 Always use the ametsoc.sty when generating a PDF for submission to the AMS. The file  
127 ametsoc.bst is the bibliography style file. The file amspaper.tex contains the L<sup>A</sup>T<sub>E</sub>X code for  
128 this sample file. The resulting PDF can be seen in either amspaper.pdf or amspaper2col.pdf,  
129 depending on the which style file is used. The file blank\_template.tex provides a basic blank  
130 template with some section headings for authors to more easily enter their manuscript into.

131 Questions and feedback concerning the use of the AMS L<sup>A</sup>T<sub>E</sub>X files should be directed to  
132 latex@ametsoc.org. Additional information is available on the AMS L<sup>A</sup>T<sub>E</sub>X FAQ Web page  
133 (available online at <http://www.ametsoc.org/pubs/journals/LaTeXFAQ.html>).

## Building a PDF and Submitting Your L<sup>A</sup>T<sub>E</sub>X 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 L<sup>A</sup>T<sub>E</sub>X files. The easiest method is to download one of the freely available text editors/compiler 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 now uses the Editorial Manager system for all author submissions for peer review. Editorial Manager uses the freely available T<sub>E</sub>X Live 2012 distribution. This system will automatically generated a PDF from your submitted L<sup>A</sup>T<sub>E</sub>X 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 L<sup>A</sup>T<sub>E</sub>X FAQ (available online at <http://www.ametsoc.org/pubs/journals/LaTeXFAQ.html>).

### *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 L<sup>A</sup>T<sub>E</sub>X-related WYSIWYG software, such as Scientific Workplace, or WYSIWYM software, such as LyX. T<sub>E</sub>X Live (available online at <http://www.tug.org/texlive/>) is recommended for users needing an up-to-date L<sup>A</sup>T<sub>E</sub>X

155 distribution with software that includes an editor and the ability to automatically generate  
156 a PDF.

## REFERENCES

159 Becker, E. and G. Schmitz, 2003: Climatological effects of orography and land–sea heating  
160 contrasts on the gravity wave–driven circulation of the mesosphere. *J. Atmos. Sci.*, **60**,  
161 103–118.

162 Knutti, R., et al., 2008: A review of uncertainties in global temperature projections over the  
163 twenty-first century. *J. Climate*, **21**, 2651–2663.

164 **List of Tables**

165 1 This is a sample table caption and table layout. Enter as many tables as  
166 necessary at the end of your manuscript. Table from Lorenz (1963). 13

TABLE 1. This is a sample table caption and table layout. Enter as many tables as necessary at the end of your manuscript. Table from Lorenz (1963).

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

167 **List of Figures**

168 1 Enter the caption for your figure here. Repeat as necessary for each of your  
169 figures. Figure from Knutti et al. (2008).

15

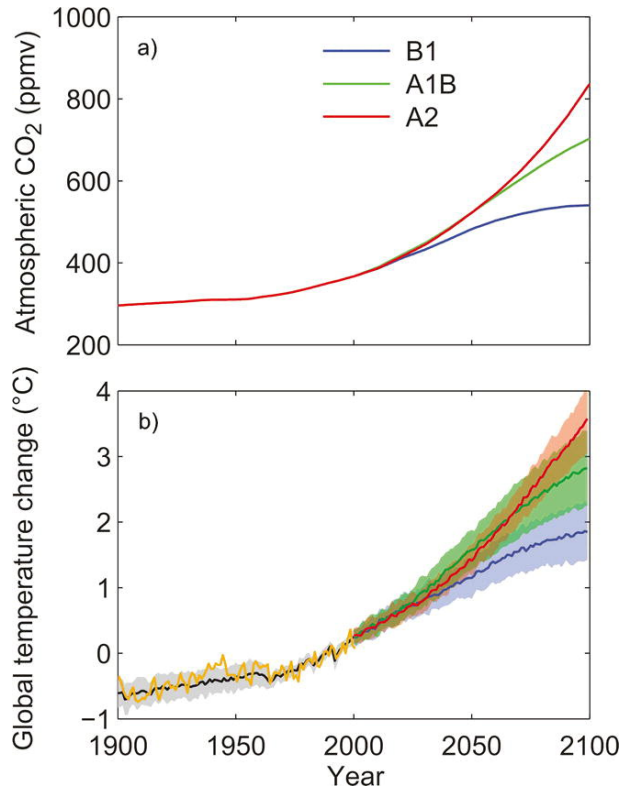


FIG. 1. Enter the caption for your figure here. Repeat as necessary for each of your figures. Figure from Knutti et al. (2008).