

1 **Title here**

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## ABSTRACT

13    Enter the text of your abstract here. This is a sample American Meteoro-  
14    logical Society (AMS) L<sup>A</sup>T<sub>E</sub>X template. This document provides authors with  
15    instructions on the use of the AMS L<sup>A</sup>T<sub>E</sub>X template. Authors should refer to the  
16    file amspaper.tex to review the actual L<sup>A</sup>T<sub>E</sub>X code used to create this document.  
17    The template.tex file should be modified by authors for their own manuscript.

## 18 **1. Introduction**

19 This document will provide authors with the basic American Meteorological Society (AMS)  
20 formatting guidelines. This document was created using L<sup>A</sup>T<sub>E</sub>X and demonstrates how to use  
21 the L<sup>A</sup>T<sub>E</sub>X template when submitting a manuscript to the AMS. The following sections will out-  
22 line the guidelines and formatting for text, math, figures, and tables while using L<sup>A</sup>T<sub>E</sub>X/ for  
23 a submission to the AMS. An attempt to compile amspaper.tex should be made before using  
24 the template. The files have been tested on Windows, Linux, and Mac OS using T<sub>E</sub>X Live  
25 2011 (available online at <http://www.tug.org/texlive/>). Feedback and questions should  
26 be sent to [latex@ametsoc.org](mailto:latex@ametsoc.org). Additional information is available on the AMS L<sup>A</sup>T<sub>E</sub>X Submis-  
27 sion Info web page ([http://www2.ametsoc.org/ams/index.cfm/publications/authors/  
28 journal-and-bams-authors/author-resources/latex-author-info/](http://www2.ametsoc.org/ams/index.cfm/publications/authors/journal-and-bams-authors/author-resources/latex-author-info/)).

29 Authors should use the empty template.tex to begin their paper. A valuable source of L<sup>A</sup>T<sub>E</sub>X in-  
30 formation is the {TeX Frequently Asked Questions} page (available online at [faq.tug.org](http://faq.tug.org)).

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

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

### 35 *Secondary headings*

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

## 39 TERTIARY HEADINGS

40 Tertiary headings are formatted using the `### Tertiary headings {-}` for single a subsub-  
41 section within a subsection or `### Tertiary headings` for multiple subsubsections within a  
42 subsection.

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

## 46 3. Citations

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

## 54 4. Formatting math

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

59 *a. Mathematical symbols*

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

74 *b. Units*

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

78 *c. Equations*

79 Brief equations or terms set inline in text must be set as a single-line expression because page  
80 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

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

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

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

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

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

#### 89 *d. Figures and tables*

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

93 For appendix figures and tables, special commands are needed to manually change the number-  
94 ing to ensure that each appendix figure or table is numbered as part of the respective appendix  
95 and not as a continuation of the main paper. Use the command `\appendcaption{}` instead of the  
96 usual `caption{}` to adjust the numbering; for example, for Table A1, you would use the command  
97 `\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):

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

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 L<sup>A</sup>T<sub>E</sub>X Package



140 *a. AMS  $\LaTeX$  files*

141 You will be provided with a tarred, zipped  $\LaTeX$  package containing 3 files. These files are  
142 your-paper-name.Rmd template for your paper  
143 amstest.bib an example of a bibliographic database file.  
144 figure01.pdf are sample figures.

145 *b. Help for Authors*

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

151 APPENDIX C

152 **Building a PDF and Submitting Your  $\LaTeX$  Manuscript Files to the AMS**

153 *a. Building your own PDF*

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

157 *b. Submitting your files to the AMS for peer review*

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

160 generate a PDF from your submitted L<sup>A</sup>T<sub>E</sub>X files and figures(not Rmd file, tex files will be produced  
161 when you successful knit your Rmd file).

162 You should not upload your own PDF into the system. If the system does not build the PDF from  
163 your files correctly, refer to the AMS L<sup>A</sup>T<sub>E</sub>X FAQ page first for possible solutions. If your PDF still  
164 does not build correctly after trying the solutions on the FAQ page, email latex@ametsoc.org for  
165 help.

### 166 *c. Other software*

167 As mentioned above, there is a variety of software that can be used to edit .tex files and  
168 build a PDF. The AMS does not support L<sup>A</sup>T<sub>E</sub>X/-related WYSIWYG software, such as Scien-  
169 tific Workplace, or WYSIWYM software, such as LyX. T<sub>E</sub>X Live (available online at \ http:  
170 //www.tug.org/texlive/) is recommended for users needing an up-to-date L<sup>A</sup>T<sub>E</sub>X distribution  
171 with software that includes an editor and the ability to automatically generate a PDF.

## 172 **References**

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180	<b>LIST OF TABLES</b>	
181	<b>Table 1.</b> This is a sample table caption and table layout. . . . .	12
182	<b>Table A1.</b> Here is the appendix table caption. . . . .	13

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

183	<b>LIST OF FIGURES</b>	
184	<b>Fig. 1.</b> Enter the caption for your figure here. Repeat as necessary for each of your figures. . . . .	15
185	<b>Fig. 2.</b> test the rmd output . . . . .	16
186	<b>Fig. A1.</b> Here is the appendix figure caption. . . . .	17
187	<b>Fig. B1.</b> Here is the appendix figure caption. . . . .	18

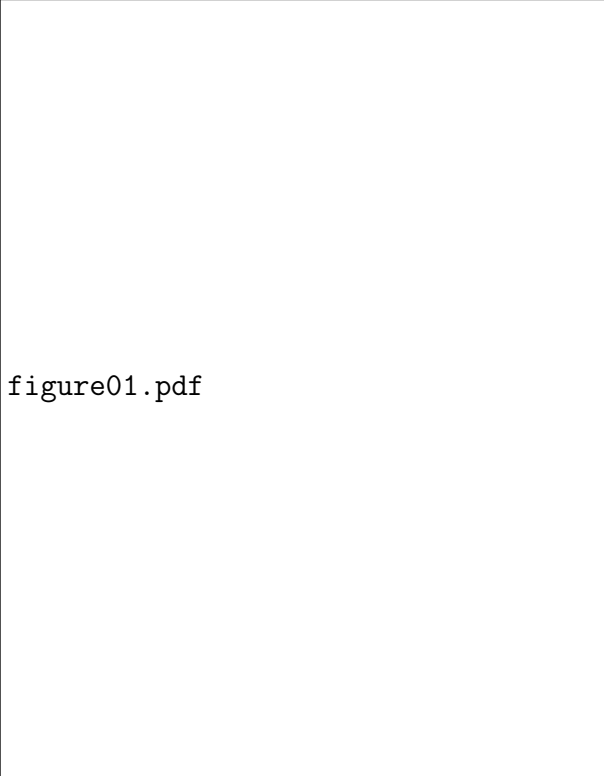


figure01.pdf

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

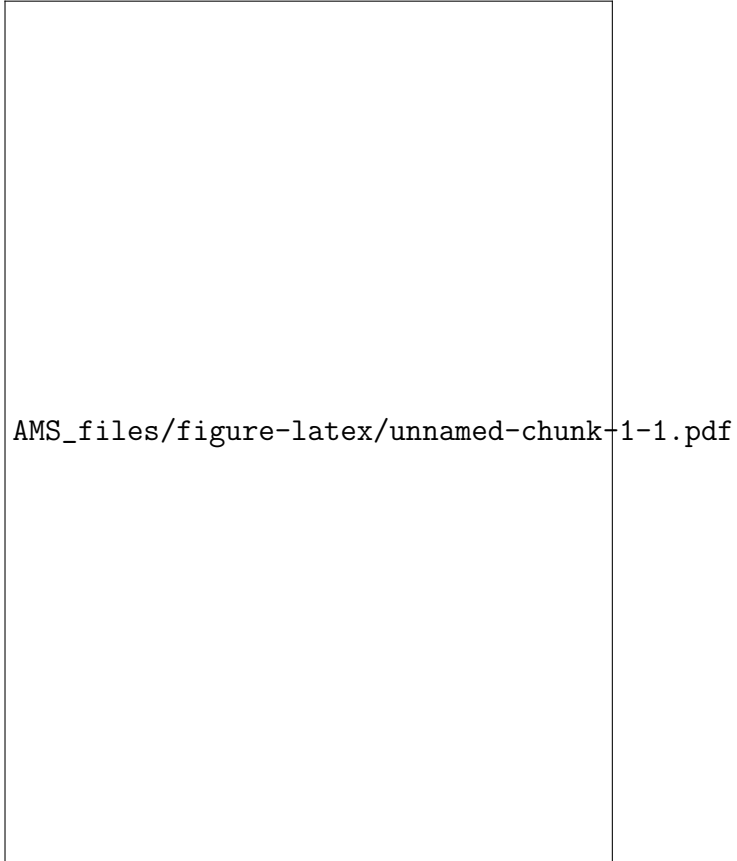


FIG. 2. test the rmd output



(illustration here)

Fig. A1. Here is the appendix figure caption.

(illustration here)

Fig. B1. Here is the appendix figure caption.