Welcome to the LaTeX Journal Style for the American Meteorological Society

Click on the tabs above for more information on each topic.

Tech Support

Please read the documentation in this file and the instructions and FAQs (http://www2.ametsoc.org/ams/index.cfm/publications/authors/journal-and-bams-authors/author-resources/latex-author-info/) before contacting the AMS.

If your question is not answered in the documentation or instructions, please contact latex@ametsoc.org.

The AMS LaTeX support team is available to help resolve issues related to the AMS LaTeX files or to submissions to the Editorial Manager system. Please note that we are unable to devote resources to answering other general LaTeX questions or to troubleshooting issues with non-AMS templates.

Files in this package and what they do

Beginning Information

`readme.txt`	List of files and what they do.

Basic Macro File

`ametsoc.cls`	The basic macro file that can be used for a draft version of your paper to submit to the AMS or to make a two-column version of your paper to estimate page length.

– Type `\documentclass{ametsoc}` at the top of your .tex document to generate a paper that follows all AMS guidelines for submission and peer review.

– Type `\documentclass[twocol]{ametsoc}` for your .tex document 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{ametsoc}` when generating a PDF for submission to the AMS.

Sample Files

amspaper.tex, .pdf	Shows a sample paper in the form you will submit your paper to the AMS: double spaced, tables and figures at end of file, numbered lines. The file amspaper.pdf is a typeset version of amspaper.tex.
amssamp1.tex, .pdf	Formal paper done in draft mode, in .tex, and then the resulting .pdf. This is the form of the paper you would use to submit it to the AMS.
amssamp2.tex, .pdf	Sample of a two-column formal paper done using the **[twocol]** option, in .tex, and then the resulting .pdf.

Additional sample files

FigOne.pdf, FigTwo.pdf, and figure01.pdf are figures used in the samples.

Bibliography files

Bibliography Files: ametsoc2014.bst, database2014.bib, and references.bib.

ametsoc2014.bst	Bibliographic style file.
references.bib	Sample bibliographic database, should be altered with your own bibliography information.
AMS_Refs.pdf	Reference documentation that explains AMS reference style and contains detailed examples. Reference list obtained from database2014.bib.
database2014.bib	A second sample bibliographic database file, which includes examples of many different references formatted in AMS style.

Template file

template.tex	Template file, for authors to copy and rename when making their own article.

Documentation

amsdocs.pdf	This file

The packages listed below are already included in ametsoc.cls, so do not include them again with `\usepackage{<filename>}`.

But, of course, you can use the commands contained in these packages.

For instance, the definition of `\includegraphics[]{}` is found in the graphicx.sty file. You can use this command to include your graphics files, without needing to enter `\usepackage{graphicx}` at the top of your .tex file.

Included in ametsoc.cls:

```
\usepackage{graphicx}
\usepackage{amsmath,amsfonts,amssymb,bm}
\usepackage[scaled=.97]{helvet} %% to get bold helvetica
\usepackage{mathptmx}
\usepackage{natbib}
\usepackage{url}
\usepackage{xcolor}
\usepackage{indentfirst}
\usepackage{multicol}
\usepackage{ifthen}
\usepackage{rotating}
(The following only included for the Draft version)
\usepackage[nomarkers,tablesfirst]{endfloat}
\usepackage{lineno}
```

The best way to start your article is to copy and rename **template.tex** and use it as the basis of your work. This will make it easier to enter the necessary commands in the right order.

You will then see choices like these:

Choose 1) or 2), comment out the other:
1) DOUBLE-SPACED VERSION FOR SUBMISSION TO THE AMS

```
\documentclass{ametsoc}
```

2) TWO-COLUMN JOURNAL PAGE LAYOUT FOR AUTHOR USE ONLY

```
\documentclass[twocol]{ametsoc}
```

Entries if you have chosen the [twocol] option

If you have not used this option, you can ignore this section.

Name of Journal
`\journal{<journal abbreviation>}`, e.g., `\journal{jamc}`

Please choose a journal abbreviation to use above from the following list:

```
%   jamc     (Journal of Applied Meteorology and Climatology)
%   jtech     (Journal of Atmospheric and Oceanic Technology)
%   jhm      (Journal of Hydrometeorology)
%   jpo     (Journal of Physical Oceanography)
%   jas      (Journal of Atmospheric Sciences)
%   jcli      (Journal of Climate)
%   mwr      (Monthly Weather Review)
%   wcas     (Weather, Climate, and Society)
%   waf      (Weather and Forecasting)
%   bams   (Bulletin of the American Meteorological Society)
%   ei    (Earth Interactions)
```

Now you may continue on to fill in the commands in the Author Info section, as you see in Author Entries.

Author Info

When you see this in the template.tex file, you should enter all information that is appropriate to your paper:

```
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
%%% To be entered by author:
```

(If you copy and rename template.tex and use it for the basis of your article, you willl find entering these commands is easier.)

Title

You may use `\\` to break lines in title:

```
\title{}
```

Author(s) and Correspondence info

Enter author(s) and corresponding author information, following this form:

```
\authors{ \correspondingauthor{} }
```

Example:

```
\authors{Author One\correspondingauthor{Author One, AMS,
 45 Beacon St., Boston, MA 02108.} and Author Two}
```

Affiliation

This command is for the affiliation that accompanies the author(s) in `\authors`:

```
\affiliation{American Meteorological Society, Boston, Massachusetts}
```

E-mail

For the e-mail address of the corresponding author:

```
\email{latex@ametsoc.org}
```

Additional authors/affiliations

If appropriate, add additional authors, different affiliations:

```
\extraauthor{Extra Author}
\extraaffil{Affiliation, City, State/Province, Country}
```

Affiliation footnotes

For affiliation footnotes, such as for a current affiliation,
use the `\thanks` command following the author's name:

```
\authors{Author One\correspondingauthor{} and
 Author Two\thanks{Current affiliation: AMS, Boston, MA 02108.}}

\extraauthor{Extra Author\thanks{Current affiliation: NOAA, Silver Spring, MD 20910.}}
\extraaffil{Affiliation, City, State/Province, Country}
```

Before **\begin{document}**, please enter the abstract:

```
\abstract{<enter abstract text here>}
```

Note that abstracts should not exceed **250 words** in length. For BAMS authors, if your submission requires a Capsule Summary, place it at the end of the abstract and identify it as the Capsule Summary.

After the abstract comes
\begin{document}

followed by the (necessary!) **\maketitle** command.
\maketitle makes use of the commands entered earlier.

Main body of paper

Then comes

```
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
% MAIN BODY OF PAPER
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

<body of article>
```

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.

Secondary headings

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

Tertiary headings

Tertiary headings are formatted using the \subsubsection*{} for a single 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.

Graphics Files

Insert graphics file with the command
`\includegraphics[width=<dimen>]{illustration}`
Generally, you should supply EITHER height or width (the other dimension will accomodate), and your aspect ratio will be correct. (The aspect ratio describes the proportional relationship between the width of an image and its height.)

The only exception is if you use .tif files, which need BOTH width and height declared.

```
\includegraphics[height=2.25in, width=3in]{illustration.tif}
```

Sample figure

```
\begin{figure}[t]
  \noindent\includegraphics[width=19pc]{figure01.pdf}\\
  \caption{Enter the caption for your figure here.  Repeat as
  necessary for each of your figures. Figure from \citet{Knutti2008}.}\label{f1}
\end{figure}
```

A sample figure and caption is shown above. Standard figure sizes are 19 (one column), 27, 33, and 39 (two columns) picas.

Use the right file name extension

You must use the correct extension depending on which program you use to turn your .dvi file to .pdf.

- If you are using pdflatex, you must supply .pdf, .jpg, or .png files.
- If you are using dvips, you must use .eps or .tif files.

EPS files can be converted to PDF using the epstopdf utility, included in most LaTeX distributions. On the command line, you can use `epstopdf <filename>.eps` and a `<filename>.pdf` will be produced.

Another possibility is converting .eps files to .pdf files with Adobe Acrobat or Photoshop.

Notes on graphics choices

JPG: Widely used on the Internet, digital cameras, etc. They are the best choice if you want to insert photos.

PNG: A very common format (even if not as much as JPG); it is a lossless format and it is the best choice for diagrams (if you were not able to generate a vector version) and screenshots.

PDF: Widely used for documents but can be used to store images as well. It supports both vector and bitmap images, but it is not recommended for the latter, as JPG or PNG will provide the same result using less disk space.

Figure Placement

In your .tex file, the AMS prefers that you place all figures at the end of the document prior to submission.
All appendix figures should be placed after main text figures.

Making Figures

Figures with multiple panels should be submitted with all panels included in **one figure file**.
Please **DO NOT** use the `subcaption` package or the `subfigure` commands.

Remember that a cross-referencing label should be used within or after the caption, but not before it, in order to get the right figure number. Cross-referencing labels **cannot be used for appendix figures** as the numbering will be incorrect. Please use plain text for appendix figure callouts within the text of the paper.

For a two-column figure, use star form: `\begin{figure*}...\end{figure*}`. Note that figures in a two-column paper will need to be placed within the body text, near to where they are first called out.
For a one-column figure: `\begin{figure}...\end{figure}`

Landscape Figures

If your figure is very wide, you may want to rotate it in order to fit it on one page. The easiest way to do that is to use the `sidewaysfigure` commands. The `rotating` package necessary for `sidewaysfigure` is already included in the ametsoc.cls file.
Replace the `\begin{figure}...\end{figure}` commands with
`\begin{sidewaysfigure}...\end{sidewaysfigure}` to rotate tables.
In order for the `endfloat` command to recognize the `sidewaysfigure` command, you must add the `endfloat.cfg` file to the folder containing your LaTeX paper elements (and include the file when submitting your paper). The `endfloat.cfg` file can be obtained from http://www2.ametsoc.org/ams/index.cfm/publications/authors/journal-and-bams-authors/author-resources/latex-author-info/faq/.

Figure Captions and \includegraphics

The figure caption should be written underneath the illustration.

Figure captions **in the appendix** should use the new command:

```
\appendcaption{<Appendix letter Figure number>}{<Caption>}
```

For example:

```
\appendcaption{A1}{Caption for Fig. A1 in appendix A here.}
```

\includegraphics

Use the includegraphics command to bring in illustration:
`\includegraphics[width=\columnwidth]{figsix}`

To make illustration as wide as both columns, use
`\includegraphics[width=\textwidth]{<illustration>}`
or to make as wide as one column, use
`\includegraphics[width=\columnwidth]{<illustration>}`

The terms `\textwidth` and `\columnwidth` are perhaps easier to remember than the standard figure sizes: 19pc (one column) and 39 pc (two columns).

Two other standard sizes for your illustrations are 27pc and 33pc, for those illustrations that are between one and two columns wide.

If you use these intermediate sizes you might like to center the illustration and caption. Here is how to do that:

```
\begin{figure}
\centerline{\includegraphics[width=33pc]{illustration}}
\caption{Caption text}
\label{figone}
\end{figure}
```

Table Placement

In your .tex file, the AMS prefers that you place all tables at the end of the document prior to submission.
All appendix tables should be placed after main text tables.

Making the table

Remember that a cross-referencing label should be used within or after the caption, but not before it, in order to get the right table number. Cross-referencing labels **cannot be used for appendix tables** as the numbering will be incorrect. Please use plain text for appendix table callouts within the text of the paper.

For a two-column table, use star form: `\begin{table*}...\end{table*}`. Note that tables in a two-column paper will need to be placed within the body text, near to where they are first called out.
For a one-column table: `\begin{table}...\end{table}`

- Caption goes above table.

  (Tables **in the appendix** should use the new command:
  `\appendcaption{<Appendix letter Table number>}{<Caption>}`
  For example:
  `\appendcaption{B1}{Caption for Table B1 in appendix B here}`)

- Lines: Do not use vertical lines in table. Use horizontal lines only at the top (`\topline`), underneath the column headers (`\midline`), and at the bottom of table (`\botline`).

- For a line under selected columns, `\cline{<col>-<col>}`, as in standard LaTeX.

The general form for tables must be:

```
\begin{table}[t]
\caption{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).}\label{t1}
\begin{center}
\begin{tabular}{ccccrrcrc}
\topline
$N$ & $X$ & $Y$ & $Z$\\
\midline
 0000 & 0000 & 0010 & 0000 \\
<body of table>
\botline
\end{tabular}
\end{center}
\end{table}
```

Table spanning width of page

To make a table that spans the width of the page,
use `\begin{table*}[t]...\end{table*}`
and `\begin{tabular*}{\textwidth}{@{\extracolsep\fill}lccccccc}`
`...\end{tabular*}\end{table*}`

To make a wide table fit within the margins of page

Of course, all tables and figures, including rotated tables and figures, must fit within the margins of the page.

There is a space between table columns set with with the dimension `\tabcolsep` before and after the column divider `&`. You can change this dimension.

For instance, `advance\tabcolsep-4pt` will subtract 8 points between table columns, a useful trick to know. The default setting is `\tabcolsep=6pt`, for 12pt space between columns.

You may also shrink the size of your table using the `\small` or `\footnotesize` commands in order to make it fit within the page margins. Note that all LaTeX papers accepted for publication by the AMS are converted to Word documents prior to copy and technical editing, so your table does not need to be perfect; it only needs to be clear and legible for the reviewers.

Landscape tables

If your table is very wide, you may want to rotate it in order to fit it on one page. The easiest way to do that is to use the `sidewaystable` commands. The `rotating` package necessary for `sidewaystable` is already included in the ametsoc.cls file.

Replace the `\begin{table}...\end{table}` commands with
`\begin{sidewaystable}...\end{sidewaystable}` to rotate tables.

In order for the `endfloat` command to recognize the `sidewaystable` command, you must add the `endfloat.cfg` file to the folder containing your LaTeX paper elements (and include the file when submitting your paper). The `endfloat.cfg` file can be obtained from http://www2.ametsoc.org/ams/index.cfm/publications/authors/journal-and-bams-authors/author-resources/latex-author-info/faq/.

Citations

Citations are used to reference entries in the bibliography.

The natbib package, included in ametsoc.cls, has two basic citation commands, `\citet` and `\citep` for textual and parenthetical citations, respectively.

```
\citet{jon90}                 -->    Jones et al. (1990)
\citet[chap. 2]{jon90}        -->    Jones et al. (1990, chap. 2)
\citep{jon90}                 -->    (Jones et al. 1990)
\citep[chap. 2]{jon90}        -->    (Jones et al. 1990, chap. 2)
\citep[see][]{jon90}          -->    (see Jones et al. 1990)
\citep[see][chap. 2]{jon90}   -->    (see Jones et al. 1990, chap. 2)
```

Multiple citations may be made by including more than one citation key in the `\citet{}` or `\citep{}` command argument.

```
\citet{jon90,jam91}         -->     Jones et al. (1990); James et al. (1991)
\citep{jon90,jam91}         -->     (Jones et al. 1990; James et al. 1991)
\citep{jon90,jon91}         -->     (Jones et al. 1990, 1991)
\citep{jon90a,jon90b}       -->     (Jones et al. 1990a,b)
```

Acknowledgments

Acknowledgments will start with `\acknowledgments` or `\acknowledgment`.

Here is an example:

```
\acknowledgments
We thank two anonymous reviewers for their comments, which helped
to improve the manuscript.
```

For the reference section, please use these commands:

```
\bibliographystyle{ametsoc2014}
\bibliography{references}
```

`\bibliographystyle{ametsoc2014}` will use the bibliography style defined with ametsoc2014.bst

`\bibliography{references}` will use references.bib for the database file.

If you have another .bib file that you would like to use, you can substitute its filename. For instance, if you have mybib.bib, you would write
`\bibliography{mybib}`

You will see more information about using BibTeX in the next section, Using BibTeX.

For more information on AMS reference style, including detailed examples, see the **AMS_Refs.pdf** file included in this package.

Using BibTeX

To use BibTeX, follow these steps.

- Enter the bibliography fields you want to use in your .bib file.
  1) You can edit the references.bib file to add your own database entries, or
  2) You can make or use any existing xxx.bib file of your choice, with "xxx" being any file name you choose.
- The AMS expects bibliographystyle **ametsoc2014.bst** to be used, so you should type: **\bibliographystyle{ametsoc2014}**.
- Next, you must declare the name of the bibliography database file, or files, that you will use: write \bibliography{zzz}, with "zzz" being the name of the .bib database file. You can also use more than one .bib file, in which case you must separate the filenames with a comma: \bibliography{zzz,yyy}.
- Using the label names of entries in the bibliography database file, you can now write either \citet{<label>} or \citep{<label>} for each reference that you want cited in the text. All references in the reference list must be cited; therefore, do not use the \nocite command.

  See forms of citations listed in Citations.
- Run LaTeX or pdfLaTeX on the .tex document, producing the usual .aux file.
- Run BibTeX on the .tex document, producing a .bbl file.
- Run LaTeX or pdfLaTeX on the .tex document two more times (must be done twice to ensure that all citations appear correctly; otherwise, citations may show up as "??").