

(Click on the tabs above for more information on each topic. Some tabs also have tabbed subtopics.)

## Welcome to the AGU Journal Style File

Welcome to the use of the new AGUJournal.cls file. We've made the process of preparing your article for submission to AGU as simple as possible, and hope you'll enjoy the process.

### Tech Support

If you need help after you read this documentation, you may send email to [latex@agu.org](mailto:latex@agu.org). If possible please send a small file demonstrating the problem.

## AGU Requests

1. **Please do not use your own macros**  
Do not use `\newcommand`, `\renewcommand`, or `\def` or `\providecommand`.
2. When making itemized lists, please use only 'enumerate', not 'itemize'.

## Files in this package, and what they do

### Basic Macro File

[AGUJournal.cls](#) Use: `\documentclass{AGUJournal}`

### Documentation

[docs.pdf](#) This file

### Sample File

[AGUJournalSample.tex/.pdf](#) Sample file to see the LaTeX commands in use, and to compare with the resulting typeset document.

### Sample figures

[figsamp.eps/.pdf](#) For use in AGUJournalSample. Figure sample file in .eps form for dvips, and .pdf form for pdflatex.

### Template file

[AGUJournalTemplate.tex](#) Template file, for authors to copy and rename when making their own article.

### Sample Supplementary Information

[AGUSuppInfoSample.tex/pdf](#) Sample for making Supplementary Information file, with resulting pdf.

***You'll find many comments and useful tips in both the sample and template files.***

## Using the Template file

The easiest way to start your article is to copy and rename the template file, `AGUJournalTemplate.tex`, and use it to start your own article.

## Setting Documentclass Options

You'll see this near the top of the `AGUJournalTemplate.tex` file:

`Step 1: Set the \documentclass`

`There are two options for article format:`

`1) PLEASE USE THE DRAFT OPTION TO SUBMIT YOUR PAPERS.`

`The draft option produces double spaced output.`

`2) numberline will give you line numbers.`

## To submit your paper

Please use `\documentclass[draft,linenumbers]{AGUJournal}`

The draft option will give more vertical space between lines, and will also allow suggested editorial changes to appear in color.

## For Final Version

Please use `\documentclass{AGUJournal}`

The final version will have less space between lines, and will not allow colored editorial changes. At this point any changes that have been made and not revised will be finalized.

Numbered lines are not appropriate for the final version, so no options should be set when the article is in its final stage.



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**Keypoints** are final entry on title page.

1. List up to three key points (at least one is required)
2. Key Points summarize the main points and conclusions of the article
3. Each must be 100 characters or less with no special characters or punctuation

Sample:

```
\begin{keypoints}
\item Evolution of raw ensemble forecast skill
\item Future benefits from statistical post-processing
\item Global distribution of forecast skill development
\end{keypoints}
```

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## Article Body

The body of the article starts with the abstract.

```
\begin{abstract}
<text of abstract>
\end{abstract}
```

The abstract starts a new page, ending the title page.

## Section heads

The main text should start with an introduction. Except for short manuscripts (such as comments and replies), the text should be divided into sections, each with its own heading.

Headings should be sentence fragments and do not begin with a lowercase letter or number. Examples of good headings are:

```
\section{Materials and Methods}
Here is text on Materials and Methods.
```

```
\subsection{A descriptive heading about methods}
More about Methods.
```

```
\section{Data} (Or section title might be a descriptive heading about data)
```

```
\section{Results} (Or section title might be a descriptive heading about the
results)
```

```
\section{Conclusions}
```

## Numbered Lines

When you use the `linenumbers` option: `\documentclass[linenumbers]{AGUJournal}`, the lines in the complete article will be numbered.

The only additional step you need to take is to make sure that equations are also numbered. To accomplish this, you need to add `\begin{linenomath*}` before the equation, and `\end{linenomath*}` afterwards:

```
\begin{linenomath*}
\begin{equation}
  123
\end{equation}
\end{linenomath*}
```

The numbering will continue sequentially.

## Track Changes

Revisions made to the text may be tracked by using the following commands:

To add words, `\added{<word added>}`

To delete words, `\deleted{<word deleted>}`

To replace words, `\replace{<word to be replaced>}{<replacement word>}`

To explain why change was made: `\explain{<explanation>}`; This will put a comment into the right margin.

An optional argument may be used to send date/time/initials etc. to the list of changes: ie,

`\added[<date/time etc.>]{<word added>}`

## List of Changes

At the end of the document, type `\listofchanges`, which will list the changes and the page and line number where the change was made.

## Sample

1           The (~~Added: current~~) abstract should be a single-paragraph of less than 250 words, or  
 2    for Geophysical Research Letters, less than 150 words. A (~~Added: really!~~) good abstract sets  
 3    the (~~Deleted: general~~) question or topic that you are studying for the general reader, provides  
 4    background on the specific question or problem, briefly describes key data or analyses, and  
 5    describes the key results and (~~Replaced: eertainties with uncertainties~~). (~~Deleted: In other~~  
 6    ~~words, probabilistic biases, which can be reduced by statistical post-processing methods,~~  
 7    ~~decrease over time.~~)

← Redundant sentence, better without it

---

### List of Changes

---

Added: ~~current~~, on page 1, line 1.

Added: ~~really!~~, on page 1, line 2.

Deleted: ~~general~~, on page 1, line 3.

Replaced: ~~eertainties~~ with ~~uncertainties~~, on page 1, line 5.

Deleted: ~~In other words, probabilistic biases, which can be reduced by statistical post-processing methods, decrease over time.~~, on page 1, line 7.

## In final version

When the draft option is not on, `\listofchanges` will not produce anything,

`\added{<word or words>}` word will be printed,

`\deleted{<word or words>}` will not be printed,

`\replaced{<delete this word>}{<replace with this word>}` will print only the replacement word.

In the final version, `\explain{<text>}` will not print anything.

## Graphics Files

Insert graphics file with the command

```
\includegraphics[height=<dimen>, width=<dimen>]{<illustration>}
```

Generally, you should supply Either height or width, and the other dimension will accommodate, and your aspect ratio will be correct. (The aspect ratio describes the proportional relationship between the width of an image and its height.)

### Tip

You can call for the width of the graphic in terms of the width of the page.

Often this combination is used:

```
\centerline{\includegraphics[width=.8\textwidth]{<illustration>}}
```

### Use the right filename extension

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

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

### Conversion

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 translating .eps files to .pdf with the Acrobat program, or with Photoshop.

### Notes on Graphics Choices

- JPG:** widely used on 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's a lossless format and it's the best choice for diagrams (if you were not able to generate a vector version) and screenshots.
- PDF:** is widely used for documents but can be used to store images as well. It supports both vector and bit-map images, but it's not recommended for the latter, as JPG or PNG will provide the same result using less disk space (if this is an issue).



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Figures and Tables

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Figure and Table Tips

## Figures and Tables, AGU Requests

1. Enter Figures and Tables near as possible to where they are first mentioned.
2. Do not use `\psfrag` or `\subfigure` commands.
3. Remember that a cross-referencing label should be used within or after the caption, but not before it, in order to reference the correct figure or table number.
4. Figure captions go below the figure.  
Table titles go above tables.

Example figure:

```
\begin{figure}
<illustration>
\caption{<Caption text here>}
\label{<label keyword>}
\end{figure}
```

### Tables: AGU requests

1. Start the caption with a short description of your table.
2. Large tables especially presenting rich data should be presented as separate excel or .csv files, not as part of the main text.

### Example Table

```
\begin{table}
\caption{<Caption text here>}
\label{<label keyword>}
\begin{tabular}{<preamble>}
table&line\\
\end{tabular}
\end{table}
```

## Making the table

1. Caption goes on top of table.
2. For visual clarity, try to avoid vertical lines in the table.
3. Your table will look better if you use horizontal lines only at the top, underneath the column headers, and at the bottom of table.
4. To make more vertical space between lines in tables you can use `\vrule height 10pt depth 3pt width 0pt`, called a 'strut'. You can choose the height and depth dimensions, remembering to always make the 'width' = 0pt, so that it won't print.

For example, to make more vertical space between lines:

```
\vrule depth12pt width 0pt
```

5. Use `\centering` to make table center horizontally, ie,

```
\centering
\begin{tabular}{cc}
line one& here\\
line two&here
\end{tabular}
```

## Table Notes

Table notes should be placed in last line of the table, using

```
\multicolumn{<num columns>}{<alignment within column>}{<text>} ie,
\multicolumn{2}{l}{aThis is a table note.}
```

Notice that the 'a' is raised by going into math mode and using the superscript symbol '^'.

Here is an example:

```
\begin{table}
\caption{Time of the Transition Between Phase 1 and Phase 2a}
\centering
\begin{tabular}{lc}
\hline
Run & Time (min) \\
\hline
$11$ & 260 \\
...
\hline
\multicolumn{2}{l}{aTable note text here.}
\end{tabular}
\end{table}
```

## Sideways figure or table

See below for how to make sideways figures or tables. AGU prefers the use of `{sidewaystable}` over `{landscapetable}` as it causes fewer problems.

```

\begin{sidewaysfigure}
\includegraphics[width=20pc]{figsamp}
\caption{caption here}
\end{sidewaysfigure}

```

```

\begin{sidewaystable}
\caption{Caption here}
\begin{tabular}{ccc}
one&two&three\\
\end{tabular}
\end{sidewaystable}

```

### To make table fit in width of page

`\tabcolsep` The default distance between columns in a table is 6 pt, added on both sides of the `&`, `... \tabcolsep & \tabcolsep ...` so normally there is 12 points space between columns. You can reduce the width of your table by changing the size of `\tabcolsep`. For instance, `advance \tabcolsep-4pt` will subtract 8 points between table columns.

### Tip: Page Placement for Figures and Tables

Often authors have problems with keeping tables or figures close to their first mention in the text. A tool to help with this problem is putting more than one illustration and caption in the same figure; or caption and table in one table environment.

This may help position your illustrations closer to where they are mentioned in the text.

```

\begin{figure}
\includegraphics{figone}
\caption{here is caption}
\vskip12pt
\includegraphics{figtwo}
\caption{here is a caption for figtwo}
...
(repeat for more figures if desired)
\end{figure}

```

This works with tables as well, where you can put a group of captions and tables within one `\begin{table}... \end{table}`.

## End of Article

Optional Appendix; Optional Glossary, Notation or Acronym sections; and Acknowledgments go at the end of the article, before References.

```

Title Page
Body of Paper
Appendix
Optional Glossary, Notation, or Acronyms
Acknowledgments
References
    
```

## Appendices

The command `\appendix` resets counters and redefines section heads but doesn't print anything.

After typing `\appendix`

```

\section{Here Is Appendix Title}
Text...
    
```

```

\section{Second Appendix Title}
    
```

will make

```

A.1 Here Is Appendix Title
    
```

```

B.1 Second Appendix Title
    
```

Equations, table and figure captions will all include the appendix letter in their numbering.

## Acknowledgments and Data

The text ends with an acknowledgment section and statement that includes:

- All funding sources related to this work from all authors (funder and grant number)
- Any real or perceived financial conflicts of interests for any author
- Other affiliations for any author that may be perceived as having a conflict of interest with respect to the results of this paper.
- A statement that indicates to the reader where the data supporting the conclusions can be obtained (for example, in the references, tables, supporting information, and other databases).
- It is also the appropriate place to thank colleagues and other contributors. AGU does not normally allow dedications.

To format acknowledgments, you need only to enter `\acknowledgments`, for example:

```
\acknowledgments
```

```
The forecast data used in this study can be made available subject to
a handling charge. SYNOP observations are not available through ECMWF.
We are grateful to F. Rabier, D. S. Richardson, D. Lavers, and other
colleagues at ECMWF for helpful discussions and inputs. We thank David
M\{o}ller of the University of Heidelberg for his contribution.
Furthermore, we like to thank T. Gneiting of the Heidelberg Institute
...
```

```
The Editor thanks Pierre Pinson and an anonymous reviewer for their
assistance in evaluating this paper.
```

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## Glossary

Glossary is only allowed in Reviews of Geophysics. Make it like this:

```
\begin{glossary}
\term{Term}
  Term Definition here
...
\end{glossary}
```

---

## Acronyms

```
\begin{acronyms}
\acro{Acronym} Definition here
...
\end{acronyms}
```

---

## Notation

```
\begin{notation}
\notation{<math>} Notation Definition here
...
\end{notation}
```

## Citations

Please use ONLY `\citet` and `\citep` for reference citations.

DO NOT use other cite commands (e.g., `\cite`, `\citeyear`, `\nocite`, `\citealp`, etc.).

`\citet` will put parens around the year; `\citep` will put parens around the whole citation:

```

\citet{key}    ==>> Jones et al. (1990)
\citep{key}    ==>> (Jones et al., 1990)

```

Multiple citations as normal:

```

\citep{key1,key2} ==>> (Jones et al., 1990; Smith, 1989)
                        or (Jones et al., 1990, 1991)
                        or (Jones et al., 1990a,b)

```

Optional notes as:

```

\citep[chap. 2]{key}    ==>> (Jones et al., 1990, chap. 2)
\citep[e.g., ]{key}     ==>> (e.g., Jones et al., 1990)
\citep[see][pg. 34]{key} ==>> (see Jones et al., 1990, pg. 34)

```

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## References

You have two choices:

1. Either type in your references,  
Or
2. Use BibTeX to make your bibliography.

### Making your own bibliography items

Alphabetize your bib items, and follow this form:

```
\begin{thebibliography}{[10]}
\bibitem[{\textit{Bell and Munoz}}(2008)]{Boug10} Bell, A.~H., and
Munoz, D.~P. (2008). Activity in the superior colliculus reflects
dynamic interactions between voluntary and involuntary influences on
orienting behaviour. \textit{Eur. J. Neurosci.} 28, 1654--1660.
...
\end{thebibliography}
```



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## Using BibTeX

Follow these steps

1. Enter `\citep{}` and/or `\citet{}` commands in your `.tex` file. Run LaTeX on your LaTeX file.
2. Type in `\bibliography{<name of your .bib file>}`. Run LaTeX on your LaTeX file.
3. Run BibTeX on your LaTeX file.
4. Open the new `.bbl` file containing the reference list and copy all the contents into your LaTeX file at the end of your article.
5. Run LaTeX on your new file which will produce the citations.

AGU does not want a `.bib` or a `.bbl` file. Please copy in the contents of your `.bbl` file at the end of your article.

For instance, if your file is called `myarticle.tex`, BibTeX will produce a file called `myarticle.bbl`. You should copy the entire contents of `myarticle.bbl` and drop it into the end of your `myarticle.tex` file.)

## Supporting Info

Supporting information is optional, but if you would like to submit more in depth information than would fit in the body of your article, you should place it in its own file.

### OVERVIEW

Please note that all supporting information will be peer reviewed with your manuscript. In general, the purpose of the supporting information is to enable authors to provide and archive auxiliary information such as data tables, method information, figures, video, or computer software, in digital formats so that other scientists can use it.

The key criteria are that the data:

1. supplement the main scientific conclusions of the paper but are not essential to the conclusions (with the exception of including data so the experiment can be reproducible);
2. are likely to be usable or used by other scientists working in the field;
3. are described with sufficient precision that other scientists can understand them, and
4. are not exe files.

All Supporting text and figures should be included in this document.

Data sets, large tables, movie files, and audio files should be uploaded separately, following AGU naming conventions. Include their captions in this document and list the file name with the caption. You will be prompted to upload these files on the Upload Files tab during the submission process, using file type "Supporting Information (SI)"

## Sample file as model

Please see the sample file `AGUSuppInfoSample.tex/pdf` for more information and as an example that you can use as a model for your own Supplementary Information.