

AES Author Submission Guide: Setting Up Your $\text{\LaTeX} 2_{\epsilon}$ Files

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The $\text{\LaTeX} 2_{\epsilon}$ `aes2e` document class formats articles in the style of the AES journals. Users who have prepared their document with $\text{\LaTeX} 2_{\epsilon}$ can, with very little effort, produce camera-ready copy for these journals.

1 INTRODUCTION

This article is a description of the $\text{\LaTeX} 2_{\epsilon}$ `aes2e` document class for typesetting articles in the format of the AES journals—*Audio Engineering Science Society*. It has, of course, been typeset using this document class, so it is a self-illustrating article. The reader is assumed to be familiar with the \LaTeX system of typesetting.

This document also depicts the `aes2e` bibliography style.

$\text{\LaTeX} 2_{\epsilon}$ is a document preparation system implemented as a macro package in Donald Knuth's \TeX typesetting system. It is based upon the premise that the user should describe the logical structure of his document and not how the document is to be formatted. Formatting is under the direction of a *document class* chosen by the user. The user can dramatically change the way the document is formatted by simply choosing a different document class.

It is impossible to provide predefined logical structures to handle all situations that may arise in a document, so users must sometimes make their own formatting decisions. $\text{\LaTeX} 2_{\epsilon}$ provides a number of features to assist in this task and, if necessary, the user can call upon the full power of \TeX , which is probably the most powerful typesetting system currently available. However, very little user formatting is necessary for the majority of documents that appear in AES journals. Consequently, it is quite easy to convert an existing $\text{\LaTeX} 2_{\epsilon}$ input file to the `aes2e` style.

2 THE TITLE PAGE

2.1 The Title, Author(s), and Abstract

Following order is mandatory to generate a correct title page:

```
\documentclass{aes2e}
  \begin{document}
    \markboth{}{}
    \title{}
    \authorgroup{
      \author{}
      \role{}
      \email{}
      \affil{}}
    \abstract{...}
    \maketitle
```

The `\documentclass{aes2e}` will give the user a fair idea of total pages that the article will produce at the typeset stage.

To prepare a manuscript the file should begin with

```
\documentclass{aes2e}
```

The four commands

```
\jyear{YYYY}
\jmonth{XXXX}
\jvol{1}
\jnum{1}
```

are needed to generate footer information. The commands store the following information: volume number, issue number, year of publication, and month name, respectively.

2.1.1 Title and Author

The \LaTeX `\title` and `\maketitle` commands are employed as usual. However, the user must format the author names a little differently using `\authorgroup{...}` declaration to match the AES standard. The following example illustrates most of the features:

```
\authorgroup{
\author{}
\role{}
\email{}
\affil{}}
```

Note that authors' names are in uppercase letters; their role, email, and affiliations are coded inside `\role{...}`, `\email{...}`, `\affil{...}` commands, respectively, and successive authors with the same affiliation are separated by "and" (or commas and "and" if there are more than two).

In both the title and the author, you may have to insert `\\` commands if lines need to be broken.

2.1.2 Abstract

The abstract is typed using the `\abstract` command. However, this command must come before the `\maketitle` command.

2.2 The Page Headers

`\markboth{}{}` generates the left- and right-page headers. The first argument is the author's name(s):

- If there is one author, then use author's surname (e.g., LAMPORT);
- If there are two authors, then abbreviate each author's surname (e.g., LAMPORT AND KNUTH);
- If there are more than two authors, then the format is LAMPORT ET AL.

The second argument of `markboth` is the title; if the title is too long, contract it by omitting subtitles and phrases, not by abbreviating words.

3 ORDINARY TEXT

Most of the body of the text is typed just as in an ordinary document. This section lists the differences.

3.1 Sections

$\text{\LaTeX} 2_{\epsilon}$ provides three levels of section headings and they are all defined in the `aes2e` class file:

- 1) `\section`
- 2) `\subsection`
- 3) `\subsubsection`

3.2 Typesetting Mathematics

The `aes2e` class file will set displayed mathematics left aligned to the column width with a parindent, provided that you use the $\text{\LaTeX} 2_{\epsilon}$ standard of open- and closed-square brackets as delimiters.

The equation

$$\sum_{i=1}^p \lambda_i = (S)$$

was typeset using the `aes2e` class file with the commands

```
\[
\sum_{i=1}^p \lambda_i = (S)
\]
```

For display equations, cross-referencing is encouraged. For example:

```
\begin{equation}
(n-1)^{-1} \sum_{i=1}^n (X_i - \overline{X})^2.
\label{eq:samplevar}
\end{equation}
Equation~(\ref{eq:samplevar}) gives the formula for
sample variance.
```

The following output is generated with the above coding:

$$(n-1)^{-1} \sum_{i=1}^n (X_i - \bar{X})^2. \quad (1)$$

Equation (1) gives the formula for sample variance.

3.3 Lists

The `aes2e` class file provides unnumbered lists using the `unnumlist` environment, for example:

```
First unnumbered item that has no label, and is indented from the left margin. First unnumbered item that has no label,
and is indented from the left margin
Second unnumbered item
Third unnumbered item
```

The unnumbered list that has no label and is indented from the left margin was produced by:

```
\begin{unnumlist}
\item First unnumbered item...
\item Second unnumbered item...
\item Third unnumbered item...
\end{unnumlist}
```

The `aes2e` class file also provides itemized list using the `bulletlist` environment, for example:

- First unnumbered bulleted item that has no label and is indented from the left margin
- Second unnumbered bulleted item
- Third unnumbered bulleted item that has no label and is indented from the left margin

was produced by:

```
\begin{bulletlist}
\item First item...
\item Second item...
\item Third item...
\end{bulletlist}
```

Numbered list is also provided in `aes2e` class file using the `arabiclist` environment, for example:

- 1) The attenuated and diluted stellar radiation
- 2) Scattered radiation
- 3) Reradiation from other grains

was produced by:

```
\begin{arabiclist}
  \item The attenuated...
  \item Scattered radiation, and...
  \item Reradiation from other grains...
\end{arabiclist}
```

3.4 Extract

Extract environment should be coded within `\begin{extract}... \end{extract}`

3.5 Enunciations

The `aes2e` class file generates the enunciations with the help of the following commands:

```
\begin{theorem}... \end{theorem}
\begin{example}... \end{example}
\begin{lemma}... \end{lemma}
\begin{proposition}... \end{proposition}
\begin{proof}... \end{proof}
\begin{remark}... \end{remark}
```

The above mentioned coding can also include optional argument such as:

```
\begin{example}[Generalized Poincaré\{e} Conjecture]
Four score and seven ... created equal.
\end{example}
```

Example 1 Generalized Poincaré Conjecture. Four score and seven years ago, our fathers brought forth, upon this continent, a new nation, conceived in Liberty, and dedicated to the proposition that all men are created equal.

4 ILLUSTRATIONS

4.1 Figures

The `aes2e` class file will cope with most of the positioning of your illustrations, and you should not normally use the optional positional qualifiers on the `figure` environment that would override these decisions.

Figure captions should be *below* the figure itself, therefore the `\caption` command should appear after the figure or space left for an illustration. For example, Figure 1 is produced using the following commands:

```
\begin{figure}
\centering
\includegraphics{aes2e-mouse.eps}
\caption{This is an example of figure caption.}
\label{fig:ordinary}
\end{figure}
```

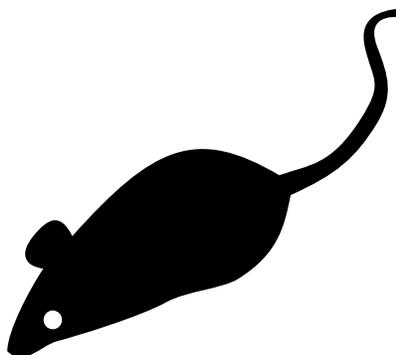


Fig. 1. This is an example of figure caption.

Figures can be resized using height and width argument of `\includegraphics[height=2pc,width5pc]{}{}` command. First argument is used for modifying figure height and the second argument is used for modifying figure width, respectively.

Cross-referencing of figures, tables, and numbered, displayed equations using the `\label` and `\ref` commands is encouraged. For example, in referencing Figure 1 above, we used `Figure~\ref{fig:ordinary}`

4.2 Tables

The standard \LaTeX table environment can be used to create a table, but the user should add formatting commands to match with the AES style. `aes2e` provides a command called `\tbl{}{}{}`, which should be used inside the table environment. The first argument of `\tbl` command is the caption and the second argument is the table body coded inside standard \LaTeX tabular environment. This command automatically calculates the width of the table and fits the caption and table notes accordingly.

```
\begin{table}%
\def~{\hphantom{0}}%
\tbl{This is an Example of Table Caption\label{tab:table}}{%
\begin{tabular}{@{}lccc@{}}\toprule
First head{$^a$} & Second head & Third head & $V_M(r)$ \\\colrule
Left & Word entries & ~0.2~ & 10.55 \\\
Left & Word entries & ~0.15 & 33.12 \\\
Left & Word entries & 10.58 & 45.10 \\\
Left & Word entries & 43.9~ & 12.34 \\\
Left & Word entries & ~0.15 & 60.50 \\\botrule
\end{tabular}}%
\begin{tabnote}%
Source: This is a table
sourcenote. This is a table sourcenote. This is a table
sourcenote.\\
Note: This is a table footnote.\\
$^a$This is a table footnote. This is a
table footnote. This is a table footnote.
\end{tabnote}%
\end{table}%
```

4.3 Acknowledgments

An optional acknowledgments section follows all the text of the article.

```
\section{ACKNOWLEDGMENTS}
```

4.4 Bibliography

The bibliography follows the acknowledgments, and is preceded by appendix (if present) in the article. It is produced by the usual \LaTeX commands.

Table 1. This is an Example of Table Caption

First head ^a	Second head	Third head	$V_M(r)$
Left	Word entries	0.2	10.55
Left	Word entries	0.15	33.12
Left	Word entries	10.58	45.10
Left	Word entries	43.9	12.34
Left	Word entries	0.15	60.50

Source: This is a table sourcenote. This is a table sourcenote. This is a table sourcenote.

Note: This is a table footnote.

^aThis is a table footnote. This is a table footnote. This is a table footnote.

```

\begin{thebibliography}{0}
\bibitem{gd:1}
D. T. Blackstock,...

\bibitem{gd:2}
A. D. Pierce,...

\bibitem{gd:3}
P. Klipsch,...
\end{thebibliography}

```

5 REFERENCES

- [1] D. T. Blackstock, *Fundamentals of Physical Acoustics* (Wiley, New York, 2000).
- [2] A. D. Pierce, *Acoustics: An Introduction to Its Physical Principles and Applications* (McGraw-Hill, New York, 1981).
- [3] P. Klipsch, A Note on Modulation Distortion: Coaxial and Spaced TweeterWoofers Loudspeaker Systems, *J. Audio Eng. Soc. (Project Notes/Engineering Briefs)*, vol. 24, pp. 186187 (1976 Apr.).
- [4] E. Dupont, The Effect of Time-Varying Boundary Conditions on the Generation of Sum and Difference Frequency Tones in a Coaxial Loudspeaker, Masters thesis, University of Waterloo, Waterloo, Ont., Canada (2009), <http://hdl.handle.net/10012/4496>.
- [5] A. L. Thuras, R. T. Jenkins, and H. T. O'Neil, Extraneous Frequencies Generated in Air Carrying Intense Sound Waves, *J. Acoust. Soc. Am.*, vol. 6, pp. 173180 (1935 Oct.).

References are most easily (and correctly) generated using the BIBTEX, which is easily invoked via

```

\bibliographystyle{...}
\bibliography{...}

```

When submitting the document source (.tex) file to external parties, it is strongly recommended that the BIBTEX .bbl file be manually copied into the document (within the traditional L^AT_EX bibliography environment) so as not to depend on external files to generate the bibliography and to prevent the possibility of changes occurring therein.

6 THE END OF THE DOCUMENT

6.1 Appendix

The appendix (if the article has one) should precede the author biography. You should add the following commands for generating appendix section the `\appendix` command:

```

\appendix
\section*{APPENDIX}

```

6.2 NOMENCLATURE

A nomenclature environment is also provided in the `aes2e` document class, which is represented using the below mentioned coding:

```

\begin{nomenclature}[PAMPs]
\nomentry{TLR}{Toll-like receptor}
\nomentry{PAMPs}{pathogen-associated molecular
patterns condensation coefficient condensation}
a long description.}
\end{nomenclature}

```

7 AUTHOR BIOGRAPHY

The author biography is typed as usual with the `\biography` command. However, this environment must be at the end of the article. The command is as follows

```

\biography{Author Name}{Author photo}{biography text}

```