Sample JASA-EL Article

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1   **Abstract:** Put your abstract here. Abstracts are limited to 100 words

2   for JASA-EL articles. Please no personal pronouns, also please do not

3   use the words "new" and/or "novel" in the abstract. An article usually

4   includes an abstract, a concise summary of the work covered at length

5   in the main body of the article.

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1. Introduction section

This sample document demonstrates the use of JASA-EL in manuscripts prepared for submission to the Journal of the Acoustical Society of America. See JASA-EL-TeXGuide.pdf, which is part of this package, for extensive documentation on using commands for JASA-EL.

You can compare the .tex version of this file with the resulting .pdf version to give you an idea of what commands are available and how they work. At the top of the .tex file you'll find a listing of the documentclass options, and an explanation of their results. Some additional suggestions are included in the body of this manuscript.

Beginner Latex users should refer to their favorite online documentation. An useful place to start is the primer from the TeX Users Group https://www.tug.org/twg/mactex/tutorials/ltxprimer-1.0.pdf

2. Examples follow

This is example text. This is example text. This is example text.

$$\Delta = \frac{f_H - f_L}{\frac{1}{2}(f_L + f_H)} \geq 0.1, \tag{1}$$

This is example text. This is example text. This is example text. This is example text.

The paper is organized as follows: Section 3 presents initial information, while Section 4 presents examples of mathematical expressions.
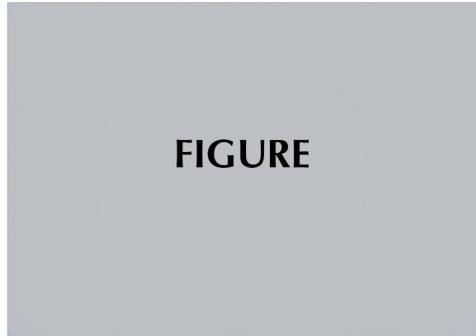
Fig. 1. Caption here.

Note: The only figure formats allowed are the following: .ps, .eps, .jpg or .pdf. Figure files must be named in this fashion: Figure#.xxx, where "#" is the figure number and "xxx" is the file format (Figure1.pdf, Figure2.jpg, Figure3a.ps, Figure3b.ps, etc).

[For these sample pages we have used only the figsamp file for illustrations, for convenience]

3. Section three

An example of another first-level Section with following example text that refers to subsections using \ref{subsec:XXX} ... EXAMPLE: Some background in section 3 and details in subsection 3.1.

3.1 Sample subsection

Here is a figure reference: is shown in Fig. 1.

4. Inline and display math samples

4.1 Math and equations $\alpha\beta\Delta\Gamma$

Inline math may be typeset using the $ delimiters. Bold math symbols may be achieved using the bm package and the \bm{#1} command it supplies. For instance, a bold α can

32 be typeset as $\mathtt{\$\backslash bm\{\backslash alpha\}\$}$ giving $\boldsymbol{\alpha}$. Fraktur and Blackboard (or open face or double

33 struck) characters should be typeset using the \mathfrak{#1} and \mathbb{#1} commands

34 respectively. Both are supplied by the amssymb package which is included in JASA-EL. For

35 example, $\mathtt{\$\backslash mathbb\{R\}\$}$ gives $\mathbb{R}$ and $\mathtt{\$\backslash mathfrak\{G\}\$}$ gives $\mathfrak{G}$.

36 In LaTeX there are many different ways to display equations; a few preferred ways are

37 noted below. Displayed math will center by default.

38 Below we have numbered single-line equations; this is the most common type of

39 equation.

$$\chi_+(p)[2|\mathbf{p}|(|\mathbf{p}|+p_z)]^{-1/2}\begin{pmatrix}|\mathbf{p}|+p_z\\\\px+ip_y\end{pmatrix}, \tag{2}$$

$$\left\{1234567890abc123\alpha\beta\gamma\delta1234556\alpha\beta\frac{1\sum_b^a}{A^2}\right\}. \tag{3}$$

40 Note the open one in Eq. (3).

41 The equation number will move down automatically if it cannot fit on the same line

42 with a one-line equation.

43 When the \label{#1} command is used [ie. input for Eq. (3)], the equation can be

44 referred to in text without knowing the equation number that TeX will assign to it. Just

45 use \ref{#1}, where #1 is the same name that used in the \label{#1} command.

46 Unnumbered single-line equations can be typeset using the \[, \] format:

$$g^+g^+ \to g^+g^+g^+g^+ \dots \, , \quad q^+q^+ \to q^+g^+g^+ \dots \, .$$

47   Note the equations can be lettered with the subequations environment:

$$A = mc, \tag{4a}$$

$$B = mc^2, \tag{4b}$$

$$C \gtrsim mc^3. \tag{4c}$$

48 Referenced: Eqs. (4a), (4b), and (4c).

49 **5. Floats, tables and figures**

50 Tables and figures are typically "floats" which means that their final position is determined

51 by LaTeX while the document is being typeset.

52 *5.1 Tables*

53 Tables generally should be surrounded with `\begin{ruledtabular}...\end{ruledtabular}`

54 This will guarantee that they are the width of the page or column, and have two ruled lines

55 at the top and bottom of the table.

56   `[ht]` in the code below instructs LaTeX to place the table where it appears in type, if

57 it will fit on the page; otherwise put it on the top of the next page.

58   Footnotes in a table are labeled a, b, c, etc. They can be specified by using the LaTeX

59 `\footnotemark[]` and `\footnotetext[]` commands. The footnotes for a table are typeset

60 at the bottom of the table, rather than at the bottom of the page or at the end of the

61 references. The arguments for `\footnotemark[]` and `\footnotetext[]` should be numbers

62 1, 2, ... The journal style will convert these to letters. This system allows multiple entries

63 to refer to the same footnote.

Table 1. A table with more columns still fits properly in a column. Note that several entries share the same footnote. Inspect the LaTeX input for this table to see exactly how it is done.

	r_c (Å)[a]	r_0 (Å)	κr_0		r_c (Å)	r_0 (Å)	κr_0
Cu	0.800	14.10	2.550	Sn[a]	0.680	1.870	3.700
Ag	0.990	15.90	2.710	Pb[b]	0.450	1.930	3.760

[a] Here's the first.

[b] Here's the second.

5.2 Plain Tables: When NOT to use 'ruledtabular'

There are a number of cases when 'ruledtablar' should not be used: basically for any table using complex content or commands.

When you'd like to use the multicolumn command in your table, you'll find that 'ruledtabular' will cause bad formatting. In that case, Don't Use Ruledtabular, and instead put in `\hline\hline` at the top and bottom of the table, as you see in the example table above.

5.3 Using dcolumn

`\usepackage{dcolumn}` is included in JASA-EL.cls so you don't need to add it. http://anorien.csc.warwick.ac.uk/mirrors/CTAN/macros/latex/required/tools/dcolumn.pdf will give you detailed information. A gentler introduction may be found in this informative and well illustrated article: https://www.tug.org/pracjourn/2007-1/mori/

Table 2. A table made without 'ruledtabular' needs to have two hlines added to the top and bottom of the table.

	r_c (Å)[a]	r_0 (Å)	κr_0		r_c (Å)	r_0 (Å)	κr_0
Cu	0.800	14.10	2.550	Sn[a]	0.680	1.870	3.700
Ag	0.990	15.90	2.710	Pb[b]	0.450	1.930	3.760
Au	1.150	15.90	2.710	Ca[c]	0.750	2.170	3.560

[a] This is the first table note.
[b] This is the second table note.
[c] This is the third table note.

mori.pdf, starting on page 20. (You may want to look at more examples in this quite comprehensive article on making tables in LaTeX.)

"If we do not want to break the fractional and the integral part in two columns, the dcolumn package provides a new type of column

D{sep -in}{sep -out}{ before.after}

The first argument {sep-in} is the symbol used in the .tex document to separate the integral and the fractional part (usually the decimal point . or the decimal comma ,), the second argument {sep-out} is the symbol that we want in the output, the third is the number of digits on the left (before) and on the right (after) this symbol. The numbers are aligned to the decimal point and, in case that the third argument is negative, the decimal point is aligned to the center of

87   the column. If the columns have a heading, it must be inserted into the command

88   `\multicolumn{1}{c}{...}`

89   An example using dcolumn:

90 `{\hsize= 2in`

91 `\begin{ruledtabular}`

92 `\begin{tabular}{cD {,}{.}{5.4}}`

93 `Expression           & \multicolumn {1}{c}{ Value }\\`

94 `\hline`

95 `$\pi$                 &     3,1416                \\`

96 `$\pi^{\pi}$           &     36,46                 \\`

97 `$\pi^{\pi^{\pi}}$    & 80662,7                   \\`

98 `\end{tabular}`

99 `\end{ruledtabular}`

100 `}`

Expression	Value
π	3.1416
π^{π}	36.46
$\pi^{\pi^{\pi}}$	80662.7

6. Sample figures, new commands available in this style

Note that the publisher determines the final layout, so your choice of figure alignment may not be reflected in the published article.

6.1 Using figline

\figline{} will center one or more figures on one line. If you want to refer to one part of the illustration, you can use \label{} following the \fig{}{}{} command:

\fig{<name of file>}{<width>}{<letter to put underneath>}

or, to add a label:

\fig{<name of file>}{<width>}{<letter to put underneath>}\label{figlabel}

Here are variations on \fig that you can use in \figline{} and label in the same way:

\leftfig{<name of file>}{<width>}{<letter to put underneath>}

\rightfig{<name of file>}{<width>}{<letter to put underneath>}

\boxedfig{<name of file>}{<width>}{<letter to put underneath>}

Note, \rotatefig{}{}{}{} takes four arguments, the first to determine the degree of rotation. After the four arguments you can add the \label{} command:

\rotatefig{<degrees of rotation>}{<name of file>}{<width>}

{<letter to put underneath>}\label{<label>}

The following illustrations show these commands in use.

`\figline{\fig{figsamp}{4cm}{(a)}\label{firstfiglabel}`

`\fig{figsamp}{4cm}{(b)}}`

`\figline{\fig{figsamp}{4cm}{(c)}`

`\fig{figsamp}{4cm}{(d)}}`

`\figline{\fig{figsamp}{4cm}{(e)}\label{secondfiglabel}}`

FIGURE

(a)

FIGURE

(b)

FIGURE

(c)

FIGURE

(d)

FIGURE

(e)
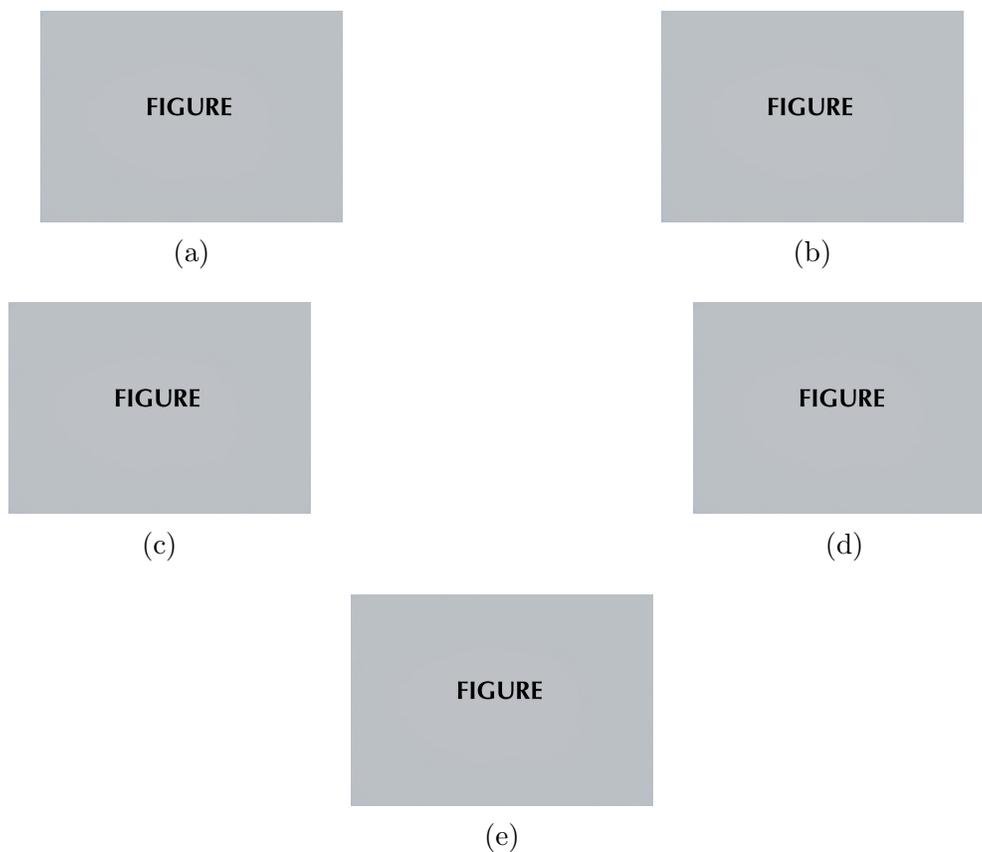
Fig. 2.   Multiple images on one figure example (a) image 1, (b-f).

References: 2(a), 2(e)

```
\figline{\boxedfig{figsamp}{2in}{(a)}\label{boxedfiglabel}}
\figline{\leftfig{figsamp}{2in}{(b)}\label{leftfiglabel}\rightfig{figsamp}{2in}{(c)}}
\figline{\rotatefig{90}{figsamp}{2in}{(d)}\label{rotatelabel}
\rotatefig{180}{figsamp}{2in}{(e)}\label{lastrotatelabel}}
```


(a)

(b)

(c)

(d)

(e)
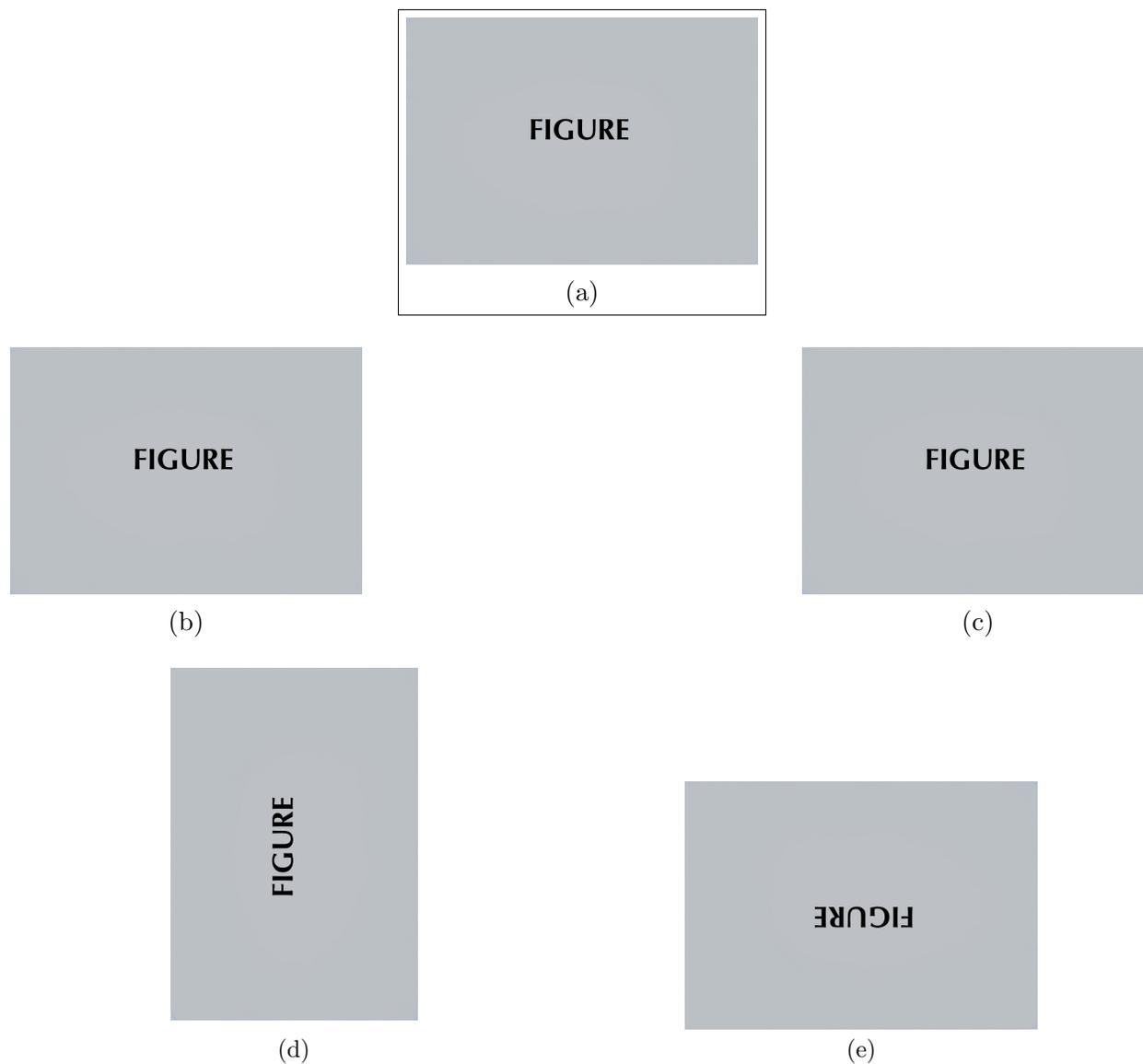
Fig. 3. More figure examples: (a) boxedfig, (b)leftfig; (c)right fig; (d) rotatefig 90 degrees; and finally, (e) rotatefig 180 degrees.

3(a), 3(b), 3(d), 3(e).

```
\sidebysidefigures{figsamp}{Describing the first
illustration.\label{sidebysideleft}}/{figsamp}{Describing the second
illustration.\label{sidebysideright}}
```
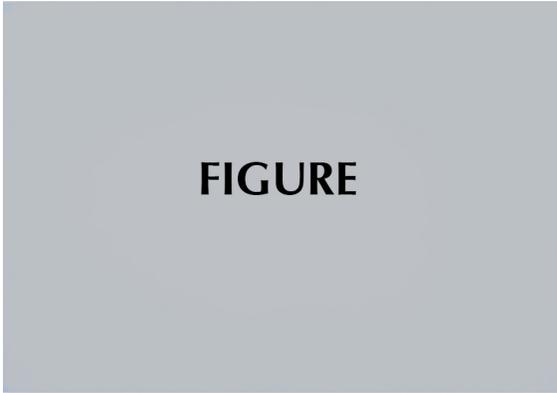

Fig. 4. Describing the first illustration.
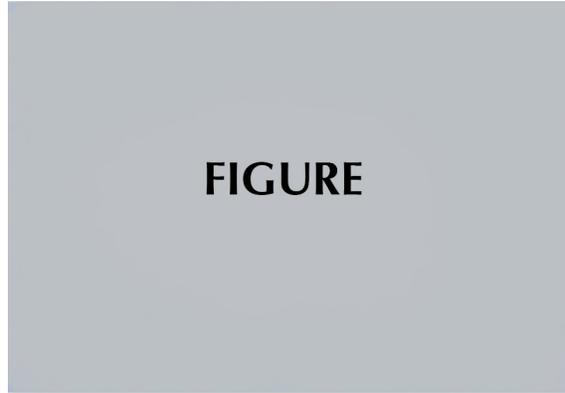
Fig. 5. Describing the second illustration.

Reference to the left side: Figure 4, and reference to the right side: Figure 5.

```
\figline{
\fig{figsamp}{.7\textwidth}{}
\narrowcaption{.2\textwidth}{Here is a narrow caption.}
}
```
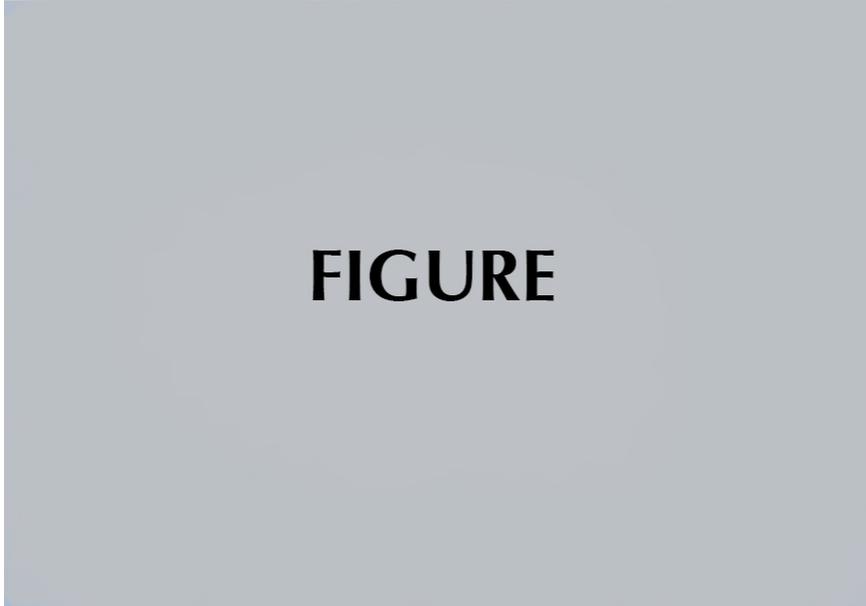

Fig. 6. Here is a narrow caption.

Here is the reference for the current caption: 6.

```
\figline{\fig{figsamp}{.2\textwidth}{(a)}
\fig{figsamp}{.2\textwidth}{(b)}
\fig{figsamp}{.2\textwidth}{(c)}
\narrowcaption{.25\textwidth}{Caption for three illustrations.
The caption may produce many lines, but only one paragraph.
}}
```


(a)   (b)   (c)
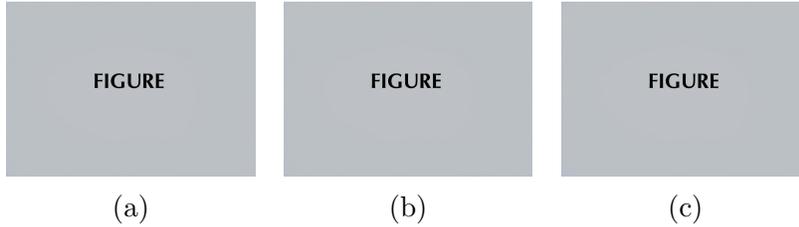
Fig. 7. Caption for three illustrations. The caption may produce many lines, but only one paragraph.

```
\vtop to 0pt{\vss
\figline{\leftfig{figsamp.jpg}{.2\textwidth}{(a)}
\leftfig{figsamp.jpg}{.2\textwidth}{(b)}\hfill}
\figline{\leftfig{figsamp.jpg}{.2\textwidth}{(c)}
\leftfig{figsamp.jpg}{.2\textwidth}{(d)}\hfill}
\vss}
\narrowcaption{.25\textwidth}{Here is a narrow caption that will can be
positioned to the right of four illustrations.
You cannot have more than one paragraph of text in a caption.
You cannot have more than one paragraph of text in a caption.
You cannot have more than one paragraph of text in a caption.
You cannot have more than one paragraph of text in a caption.
}
\vskip36pt % to give more space above the footline
```


(a)   (b)

(c)   (d)
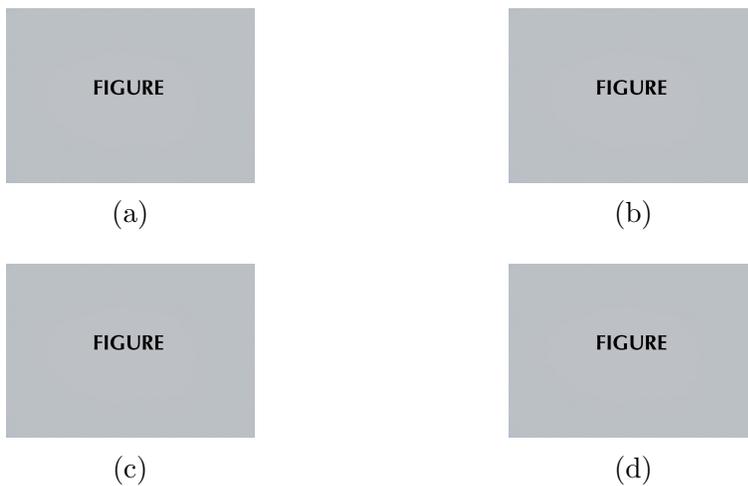
Fig. 8. Here is a narrow caption that will can be positioned to the right of four illustrations. You cannot have more than one paragraph of text in a caption. You cannot have more than one paragraph of text in a caption. You cannot have more than one paragraph of text in a caption. You cannot have more than one paragraph of text in a caption.

```
\figcolumn{
\fig{figsamp}{.2\textwidth}{(a)}
\fig{figsamp}{.2\textwidth}{(b)}
\fig{figsamp}{.2\textwidth}{(c)}
}
```

FIGURE

(a)

FIGURE

(b)

FIGURE

(c)
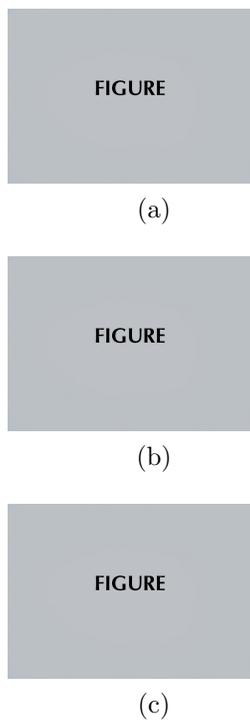
Fig. 9. Here are some stacking figures.

FIGURE

120

Fig. 10. Showing how you can have a caption that continues across pages or columns.

This is a caption in a no float figure. It is designed to continue across columns or pages if it is

123 particularly long.

124 This is a caption that will continue across pages if necessary. This is a caption that will continue

125 across pages if necessary. This is a caption that will continue across pages if necessary. This is

126 a caption that will continue across pages if necessary. This is a caption that will continue across

127 pages if necessary. This is a caption that will continue across pages if necessary. This is a caption

128 that will continue across pages if necessary. This is a caption that will continue across pages if

129 necessary. This is a caption that will continue across pages if necessary. This is a caption that will

130 continue across pages if necessary.

6.2 Using autoref

132 The \autoref{} command, produces the normal reference, plus the name of the current

133 environment when the label was made; in this case 'Figure'. Note that both the name and

134 number/letter are hyperref'ed.

135 Figure 3(a), Figure 3(b), Figure 3(d), Figure 3(e).

7. Algorithm example

This example uses `\usepackage{algopseudocode}` as you see above. If you would rather use

another algorithm package, please comment out algopseudocode (`%\usepackage{algopseudocode}`)

and type in the package name that you'd like to use (please just check that the package is

compatible with Editorial Manager; see JASA-EL-TeXGuide.pdf).

if $i \geq maxval$ **then**

$\qquad i \leftarrow 0$

else

$\quad$ **if** $i + k \leq maxval$ **then**

$\qquad\quad i \leftarrow i + k$

$\quad$ **end if**

end if

Documentation for the package is found at http://mirrors.rit.edu/CTAN/macros/

latex/contrib/algorithm2e/doc/algorithm2e.pdf which shows many other examples

and options.

For other algorithm packages, see https://en.wikibooks.org/wiki/LaTeX/Algorithms

7.1 Example of multimedia entry

Please note that this is for multimedia intended to appear inline within the published article.

Here is what a multimedia entry will look like:

Mm. 1. Corresponding pulse-compressed echo envelopes and video recordings from a fluttering luna moth. Echoes from the wings and body of the moth generally dominate the acoustic returns, which vary greatly over consecutive ensonifications across the wingbeat cycle. File of type "mp4" (15.3 MB)

Here we try cross referencing the multimedia entry: The multimedia above is Mm. 1.

7.2 Supplementary material

ASA prefers that authors to submit related/relevant article files as supplementary material with their submission.

7.3 Supplementary material for publication

Any archival supplemental materials to be published with the manuscript (eg., supplementary figures) should be cited in-text and a footnote provided.

An example of reference to supplementary material:

The sound files and videos for this and other figures are included as supplementary materials[1].

The contents of the footnote above will appear at the beginning of the bibliography made with BibTeX when the default 'author-year' documentclass option is used; BibTeX

output will have the footnote interleaved with other references if the NumberedRefs docu-

mentclass option is used.

7.4 File naming conventions

Here are the conventions for naming files:

- Supplementary Figure or Supplementary Figure or Text files should be named: Supp-Pub#.xxx, where "#" is a number and "xxx" is the file format extension (Supp-Pub1.docx, SuppPub2.jpg, etc)

- Supplementary Multimedia files: SuppPubmm#.xxx, where "#" is a number and "xxx" is the file format extension (SuppPubmm1.mp3, SuppPubmm2.gif, etc)

- Multimedia files must be named accordingly: MM#.xxx, where "#" is the number and "xxx" is the file format extension (MM1.wav, MM2.avi, etc).

- The only figure formats allowed are the following: .pdf, .ps, .eps, or .jpg. Figure files must be named in this fashion: Figure#.xxx, where "#" is the figure number and "xxx" is the file format (Figure1.pdf, Figure2.jpg, Figure3a.ps, Figure3b.ps, etc).

8. Footnotes

The contents of the footnotes will appear at the beginning of the bibliography when BibTeX produces the .bbl file using the default AuthorYear style; interleaved with other references if NumberedRefs option is used: `\documentclass[NumberedRefs]{JASA-EL}` and BibTeX has been used.

190 This example show where this cite (Hollman, 1997) will appear in the bibliography,

191 depending on whether we use default author-year style or call for the NumberedRefs docu-

192 mentclass option.

193 Here are some sample footnotes:[2,3]

194 **9. Making the bibliography using BibTeX**

195 Authors are highly recommended to use BibTeX to produce their bibliographies. The results

196 will be predictable and even if it might take some time to get comfortable with using BibTeX,

197 in the long run it will save you endless aggravation.

198 A resource for making your bibliography entries correctly is included in this pack-

199 age: JASA-ReferenceStyles.pdf. You will also find the files bibsamp1.tex/.pdf and bib-

200 samp2.tex/.pdf for examples of output; and sampbib.bib for an example of how to make

201 your .bib database entries.

202 There are two possible bibliography styles: the default, author-year,

203 `\documentclass{JASA-EL}`

204 and the optional style, NumberedRefs, which you would call using

205 `\documentclass[NumberedRefs]{JASA-EL}`

206 Every `\citep{}` or `\citet{}` will produce a citation and an entry in the bibli-

207 ography. Every citation must have a matching entry in the bibliography database file

208 (`<filename>.bib`).

209 Note that the citations are hyperlinked to their entries in the bibliography:

210   Using \citep{}: For journals, (Christian *et al.*, 1984), and book reference, (Hollman,

211   1997).

212   Using \citet{}: Christian *et al.* (1984). Notice how only the year has parens around

213   it (note: this is used with author-year style references).

214   Computer language documentation: (DISPERSE, 2001).

215   Make your bibliography by doing: pdflatex filename, bibtex filename, pdflatex file-

216   name, pdflatex filename.

217   ***Compare the results you get with***

218   \documentclass{JASA-EL}

219   ***vs.***

220   \documentclass[NumberedRefs]{JASA-EL}

221   **10. Conclusion**

222   And in conclusion...

223   **Acknowledgments**

224   This research was supported by ...

References and links

[1]See Supplementary materials at [URL will be inserted by AIP] for [give a brief description of the material].

[2]Here is the second footnote. It will appear before the beginning of the bibliography in Author-Year style (default) or it will be interleaved with other references when using the NumberedRefs option.

[3]Here is a third footnote.

Christian, R. S., Davies, R. E., Tubis, A. B., and Anderson, C. A. (**1984**). "Effects of air loading on tympani membrane vibrations," J. Acoust. Soc. Am. **76**, 1336–1345.

DISPERSE (**2001**). "A system for generating dispersion curves," User's Manual Version 2.0.16d, doi: 10.1177/1045389X16667559.

Hollman, J. P. (**1997**). *Heat Transfer*, 8th ed. (McGraw-Hill, New York), p. 55.