

## Chapter 1

### Using World Scientific's Review Volume Document Style

First Author and Second Author\*

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The abstract should summarize the context, content and conclusions of the paper in less than 200 words. It should not contain any references or displayed equations. Typeset the abstract in 9 pt Times roman with baselineskip of 11 pt, making an indentation of 1.5 pica on the left and right margins.

#### 1. Using Other Packages

The WSPC class file has already loaded the packages `amsmaths`, `amssymb`, `graphicx`, `rotating`, and `url` at the startup.

Please try to limit your use of additional packages. They frequently introduce incompatibilities. This problem is not specific to the WSPC styles, it is a general L<sup>A</sup>T<sub>E</sub>X problem. Check this manual whether the required functionality is already provided by the WSPC class file. If you do need third-party packages, send them along with the paper. In general, you should use standard L<sup>A</sup>T<sub>E</sub>X commands as much as possible.

`Check.tex` is an utility to test for all the files required by World Scientific review volume project are available in your present L<sup>A</sup>T<sub>E</sub>X installation.

**Usage:** `latex check.tex`

#### 2. Layout

In order to facilitate our processing of your article, please give easily identifiable structure to the various parts of the text by making use of the usual L<sup>A</sup>T<sub>E</sub>X commands or by your own commands defined in the preamble, rather than by using explicit layout commands, such as `\hspace`, `\vspace`, `\large`, `\centering`, etc. Also, do not redefine the page-layout parameters. For more information on layout and font specifications please refer our **Layout Guide**.

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\*Author footnote.

<sup>†</sup>Affiliation footnote.

### 3. User Defined Macros

User defined macros should be placed in the preamble of the article, and not at any other place in the document. Such private definitions, i.e. definitions made using the commands `\newcommand`, `\renewcommand`, `\newenvironment` or `\renewenvironment`, should be used with great care. Sensible, restricted usage of private definitions is encouraged. Large macro packages and Definitions that are not used in the article should be avoided.

### 4. Using ws-rv961x669

#### 4.1. *Input used to produce a chapter*

```
\documentclass{ws-rv961x669}
\usepackage{ws-rv-van}           % numbered citation/references
\usepackage{ws-rv-thm} % comment when other thm package is used
%\usepackage{ws-index}           % to produce multiple indexes
\makeindex
%\newindex{aindx}{adx}{and}{Author Index} % author index
%\renewindex{default}{idx}{ind}{Subject Index} % subject index
\begin{document}
\chapter[Short Title]{Full Title}
\author[F. Author]{First Author}
%\aindx{Author, F.} % author index entry
\address{World Scientific Publishing...}
\begin{abstract}
The abstract should ...
\end{abstract}
\body
\section{Using Other Packages}
The class file has...
\begin{appendix}[Optional Appendix Title]
\section{Sample Appendix}
Text...
\end{appendix}
%\begin{thebibliography}{9} % for non BIBTeX users
%\bibitem{ams04} \AmS, \emph{\AmS-\LaTeX{}} ...
%\end{thebibliography}
\bibliographystyle{ws-rv-van}
\bibliography{ws-rv-sample}
%\printindex{aindx} % to print author index
\printindex
\end{document}
```

## 4.2. Class options and extra packages

The class file, `ws-rv9x6.cls` provides the following options:

- `onethmnum` To number all theorem-like objects in a single sequence, e.g. Theorem 1, Definition 2, Lemma 3, etc.  
Default: individual numbering on different theorem-like objects, e.g. Theorem 1, Definition 1, Lemma 1, etc.
- `addchapnum` Appends chapter number, e.g. 1.1. Section, Theorem 1.1., Table 1.1., etc  
Default: 1. Section, Theorem 1., Table 1., etc.,
- `draft` To draw border line around text area.  
Default: no border line around text area.

Apart from the packages mentioned in Sec 1, the WSPC class also requires the following inhouse packages for customizing the citations and references.

- Vancouver (numbered)**
  - `\usepackage{ws-rv-van}` – Superscript<sup>1</sup> (Default style)
  - `\usepackage[square]{ws-rv-van}` – Bracketed [1]
- Harvard (author-date)**
  - `\usepackage{ws-rv-har}` – (Author, 1994)

The contributors are advised to consult the managing editor for the chosen style. You can obtain these files from our web pages at:

- <http://www.worldscientific.com/page/authors/review-style> and
- <http://www.icpress.co.uk/authors/stylefiles.shtml#review>.

## 5. Chapters

Each chapter should normally be in a separate file. The chapter title is typeset by using the `\chapter[#1]{#2}` command, where `[#1]` is an optional short title to be used as a running head if the title is too long and `#2` is the full title of the chapter. The short, edited version of the title appears in the table of contents and running head. The chapter title should be typed in a way such that only the initial character is in upper case and the rest is in lower case.

## 6. Sectional Units

Sectional units are obtained in the usual way, i.e. with the  $\text{\LaTeX}$  instructions `\section`, `\subsection`, `\subsubsection`, and `\paragraph`.

## 7. Section

Text...

### 7.1. Subsection

Text...

#### 7.1.1. Subsubsection

Text...

**Paragraph** Text...

**Subparagraph** Text...

### Unnumbered Section

Unnumbered sections can be obtained by `\section*`.

## 8. Lists of Items

Lists are broadly classified into four major categories that can randomly be used as desired by the author:

- (a) Numbered list.
- (b) Lettered list.
- (c) Unnumbered list.
- (d) Bulleted list.

### 8.1. Numbered and lettered list

- (1) The `\begin{arabiclist}[]` command is used for the arabic number list (arabic numbers appearing within or without parenthesis), e.g., (1), (2); 1., 2., etc.
- (2) The `\begin{romanlist}[]` command is used for the roman number list (roman numbers appearing within parenthesis), e.g., (i), (ii), etc.
- (3) The `\begin{Romanlist}[]` command is used for the capital roman number list (capital roman numbers appearing within parenthesis), e.g., (I), (II), etc.
- (4) The `\begin{alphalist}[]` command is used for the alphabetical list (alphabetical characters appearing within parenthesis), e.g., (a), (b), etc.
- (5) The `\begin{Alphalist}[]` command is used for the capital alphabetical list (capital alphabetical characters appearing within parenthesis), e.g., (A), (B), etc.

Note: For all the above mentioned lists (with the exception of alphabetic list), it is obligatory to enter the last entry's number in the list within the square bracket, to enable unit alignment.

Items numbered with lowercase Roman numerals:

- (i) item one
- (ii) item two
  - (a) item one
  - (b) lists within lists can be numbered with lowercase alphabets
- (iii) item three.

## 8.2. *Bulleted and unnumbered list*

The `\begin{itemlist}` command is used for the bulleted list.

The `\begin{unnumlist}` command is used for creating the unnumbered list with the turnovers hangindent by 1 pica.

Lists may be laid out with each item marked by a dot:

- item one
- item two
- item three.

## 8.3. *Proofs*

The WSPC document styles also provide a predefined proof environment for proofs. The proof environment produces the heading ‘Proof’ with appropriate spacing and punctuation. A ‘Q.E.D.’ symbol,  $\square$ , can be appended at the end of a proof with the command `\qed`, e.g.,

```
\begin{proof}
This is to test.
\end{proof}
```

produces

**Proof.** This is to test.  $\square$

The proof environment takes an argument in curly braces, which allows you to substitute a different name for the standard ‘Proof’. If you want to display, ‘Proof of Lemma’, then write

```
\begin{proof}[Proof of Lemma]
This is to test.
\end{proof}
```

produces

**Proof of Lemma.** This is to test.  $\square$

## 9. Theorems and Definitions

The WSPC document styles contain a set of pre-defined environments for theorems, definitions, proofs, remarks etc. All theorem-like objects use individual numbering scheme by default. To number them in a single sequence, load the class option `onethmnum` in the preamble, e.g., `\documentclass[onethmnum]{ws-rv961x669}`. The following environments are available by default with WSPC document styles:

Environment	Heading
<code>algorithm</code>	Algorithm
<code>answer</code>	Answer
<code>assertion</code>	Assertion
<code>assumption</code>	Assumption
<code>case</code>	Case
<code>claim</code>	Claim
<code>comment</code>	Comment
<code>condition</code>	Condition
<code>conjecture</code>	Conjecture
<code>convention</code>	Convention
<code>corollary</code>	Corollary
<code>criterion</code>	Criterion
<code>definition</code>	Definition
<code>example</code>	Example
<code>lemma</code>	Lemma
<code>notation</code>	Notation
<code>note</code>	Note
<code>observation</code>	Observation
<code>problem</code>	Problem
<code>proposition</code>	Proposition
<code>question</code>	Question
<code>remark</code>	Remark
<code>solution</code>	Solution
<code>step</code>	Step
<code>summary</code>	Summary
<code>theorem</code>	Theorem

```
\begin{theorem}[Longo, 1998]
```

```
For a given  $Q$ -system...
```

```
\[ N = \{x \in N; T x = \gamma(x) T, T x^* = \gamma(x^*) T\},
```

```
and  $E_{\Xi}(\cdot) = T^* \gamma(\cdot) T$  gives ...
```

```
\end{theorem}
```

generates

**Theorem 1 (Longo, 1998).** *For a given  $Q$ -system...*

$$N = \{x \in N; Tx = \gamma(x)T, Tx^* = \gamma(x^*)T\},$$

and  $E_{\Xi}(\cdot) = T^* \gamma(\cdot) T$  gives a conditional expectation onto  $N$ .

```
\begin{theorem}
We have  $\# H^2(M \supset N) < \infty$  for an inclusion ...
\end{theorem}
```

produces

**Theorem 2.** *We have  $\# H^2(M \supset N) < \infty$  for an inclusion  $M \supset N$  of factors of finite index.*

L<sup>A</sup>T<sub>E</sub>X provides `\newtheorem` to create new theorem environments. To add a new theorem-type environments to a chapter, use

```
\newtheorem{example}{Example}[section]
\let\Examplefont\upshape
\def\Exampleheadfont{\bfseries}
```

## 10. Mathematical Formulas

**Inline:** For in-line formulas use `\( ... \)` or `$ ... $`. Avoid built-up constructions, for example fractions and matrices, in in-line formulas. Fractions in inline can be typed with a solidus e.g.  $x+y/z=0$ .

**Display:** For numbered display formulas use the `displaymath` environment `\begin{equation}...\end{equation}`

And for unnumbered display formula use `\[ ... \]`. For numbered displayed one line formulas always use the `equation` environment. Do not use `$$ ... $$`. For example, the input for:

$$\mu(n, t) = \frac{\sum_{i=1}^{\infty} 1(d_i < t, N(d_i) = n)}{\int_{\sigma=0}^t 1(N(\sigma) = n) d\sigma} . \quad (1)$$

is:

```
\begin{equation}
\mu(n, t) = \frac{\sum\limits^{\infty}_{i=1} 1(d_i < t, N(d_i) = n)}
{\int\limits^t_{\sigma=0} 1(N(\sigma)=n) d\sigma} \, , \, . \label{ra_eq1}
\end{equation}
```

For displayed multi-line formulas use the `eqnarray` environment.

```
\begin{eqnarray}
\zeta \mapsto \hat{\zeta} &=& a\zeta + b\eta \label{ra_eq2} \\
\eta \mapsto \hat{\eta} &=& c\zeta + d\eta \label{ra_eq3}
\end{eqnarray}
```

$$\zeta \mapsto \hat{\zeta} = a\zeta + b\eta \quad (2)$$

$$\eta \mapsto \hat{\eta} = c\zeta + d\eta \quad (3)$$

Superscripts and subscripts that are words or abbreviations, as in  $\pi_{\text{low}}$ , should be typed as roman letters; this is done as `\( \pi_{\mathrm{low}} \)` instead of `\pi_{low}` done by `\( \pi_{\text{low}} \)`.

For geometric functions, e.g. `exp`, `sin`, `cos`, `tan`, etc. please use the macros `\sin`, `\cos`, `\tan`. These macros gives proper spacing in mathematical formulas.

It is also possible to use the  $\mathcal{A}\mathcal{M}\mathcal{S}$ - $\text{\LaTeX}$  package,<sup>1</sup> which can be obtained from the  $\mathcal{A}\mathcal{M}\mathcal{S}$ , from various  $\text{\TeX}$  archives.

## 11. Floats

### 11.1. Tables

Put the tables and figures in the text with the `table` and `figure` environments, and position them near the first reference of the table or figure in the text. Please avoid long caption texts in figures and tables. Do not put them at the end of the article.

```
\begin{table}[h]
\tbl{Sample table caption.}
{\begin{tabular}{@{}cccc@{}} \toprule
Piston mass\text{\textit{a}} & Analytical ...\\
& (Rad/s) & (Rad/s) \\
\colrule
1.000 & ...\\
0.010 & ...\\
0.001 & ...\\
\botrule
\end{tabular}}
\begin{tabnote}
\text{\textit{a}}Sample table footnote.
\end{tabnote}\label{ra_tbl1}
\end{table}
```

Table 1. Sample table caption.

Piston mass <sup>a</sup>	Analytical frequency (Rad/s)	TRIA6- $S_1$ model (Rad/s)	% Error
1.000	281.0	280.81	0.07
0.010	2441.0	2441.00	0.00
0.001	4130.0	4129.30	0.16

<sup>a</sup>Sample table footnote.



For most tables, the horizontal rules are obtained by:

**toprule** one rule at the top

**colrule** one rule separating column heads from data cells

**botrule** one bottom rule

**Hline** one thick rule at the top and bottom of the tables with multiple column heads

To avoid the rules sticking out at either end of the table add `@{}` before the first and after the last descriptors, e.g. `@lll@`. Please avoid vertical rules in tables. But if you think the vertical rule is must, you can use the standard L<sup>A</sup>T<sub>E</sub>X `tabular` environment.

By using `\tbl` command in table environment, long captions will be justified to the table width while the short or single line captions are centered. `\tbl{table caption}{tabular environment}`. If we need the fixed width for the tables, the command is `\begin{tabular*}{#1}{@{}l@{}}` and `\end{tabular*}`. In the argument `#1` the width of the table has to be given. For example if we need the table to be of 25pc width, then the command is `\begin{tabular*}{25pc}{@{\extracolsep{fill}}l@{}}`.

Headings which span for more than one column should be set using `\multicolumn{#1}{#2}{#3}` where `#1` is the number of columns to be spanned, `#2` is the argument for the alignment of the column head which may be either `c` — for center alignment; `l` — for left alignment; or `r` — for right alignment, as desired by the users. Use `c` for column heads as this is the WS style and `#3` is the heading. A simplified alternative version is `\centre{#1}{#2}` where `#1` is the number of columns to be spanned and `#2` the heading. There should be a rule spanning the same columns below the heading. Termed as spanner or bridge rule, it is generated using the command `\cline{n-m}` where `n` is the number of the first spanned column and `m` that of the last spanned column. `\cline` should not be part of a row but follow immediately after a `\\`.

If a table contains note(s), as a universal thumb-rule they should appear beneath the table set to its width and seldom at the foot of the page. For the footnotes in the table environment the command is `{\begin{tabnote}<text>\end{tabnote}}`. Appropriate symbols should be included in the body of the table matching their corresponding symbols in the footnotes where the footnotes are to be placed immediately after the `{\begin{tabnote}}` command and terminated before `\end{tabnote}}\end{table}` command.

The tables are designed to have a uniform style throughout the whole book. We prefer the border lines to be of the style as shown in our sample Tables. For the inner lines of the table, it looks better if they are kept to a minimum.

Landscape tables and figures can be typeset with following environments:

- `sidewaystable` and
- `sidewaysfigure`.

Table 2. Positive values of  $X_0$  by eliminating  $Q_0$  from Eqs. (15) and (16) for different values of the parameters  $f_0$ ,  $\lambda_0$  and  $\alpha_0$  in various dimension.

$f_0$	$\lambda_0$	$\alpha_0$	Positive roots ( $X_0$ )									
			4D	5D	6D	7D	8D	10D	12D	16D		
-0.033	0.034	0.1	6.75507,	4.32936,	3.15991,	2.44524,	1.92883,	0.669541,	—	—		
			1.14476	1.16321	1.1879	1.22434	1.29065	0.415056				
-0.1	0.333	0.2	3.15662,	1.72737,	—	—	—	—	—	—		
			1.24003	1.48602								
-0.301	0.302	0.001	2.07773,	—	—	—	—	—	—	—		
			1.65625									
-0.5	0.51	0.001	—	—	—	—	—	—	—	—		
			1.667,	1.1946	—	—	—	—	—	—		
0.1	0.1	2	0.806578	0.858211								
			0.463679	0.465426	0.466489	0.466499	0.464947	0.45438	0.429651	0.35278		
0.1	1	0.2	—	—	—	—	—	—	—	—		
			0.996033,	0.968869,	0.91379,	0.848544,	0.783787,	0.669541,	0.577489,	—		
1	0.001	2	0.414324	0.41436	0.414412	0.414489	0.414605	0.415056	0.416214	—		
			0.316014,	0.309739,	—	—	—	—	—	—		
	0.001	0.2	0.275327	0.275856								
			0.089435	0.089441	0.089435	0.089409	0.08935	0.089061	0.088347	0.084352		
0.1	1	3	0.128192	0.128966	0.19718,	0.169063,	0.142103,	—	—	—		
					0.41436	0.414412	0.414489					

**Example:**

```

\begin{sidewaystable*}
\tbl{Positive values of ...}
{\begin{tabular}{@{}cccccccccc@{}}
...
\end{tabular}}
\label{ra_tbl2}
\end{sidewaystable*}

```

**11.2. Figures**

The preferred graphics are tiff and Encapsulated PostScript, eps in short, for any type of graphic. Our  $\text{\TeX}$  installation requires eps, but we can easily convert tiff to eps. Many other formats, e.g. pict (Macintosh), wmf (Windows) and various proprietary formats, are not suitable. Even if we can read such files, there is no guarantee that they will look the same on our systems as on yours.

Next adjust the scaling of the figure until it's correctly positioned, and remove the declarations of the lines and any anomalous spacing.

If instead you wish to use some other method, then it's most important to leave the right amount of vertical space in the figure declaration to accommodate your figure (i.e. remove the lines and change the space in the example).

A figure is obtained with the following commands

```

\begin{figure}
\centerline{\includegraphics[width=4.5cm]{rv-fig1}}
\caption{ ... caption here ... }
\label{ra_fig1}
\end{figure}

```

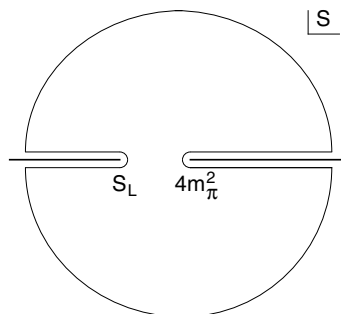


Fig. 1. ... caption here ...

Very large figures and tables should be placed on a page by themselves, e.g.,

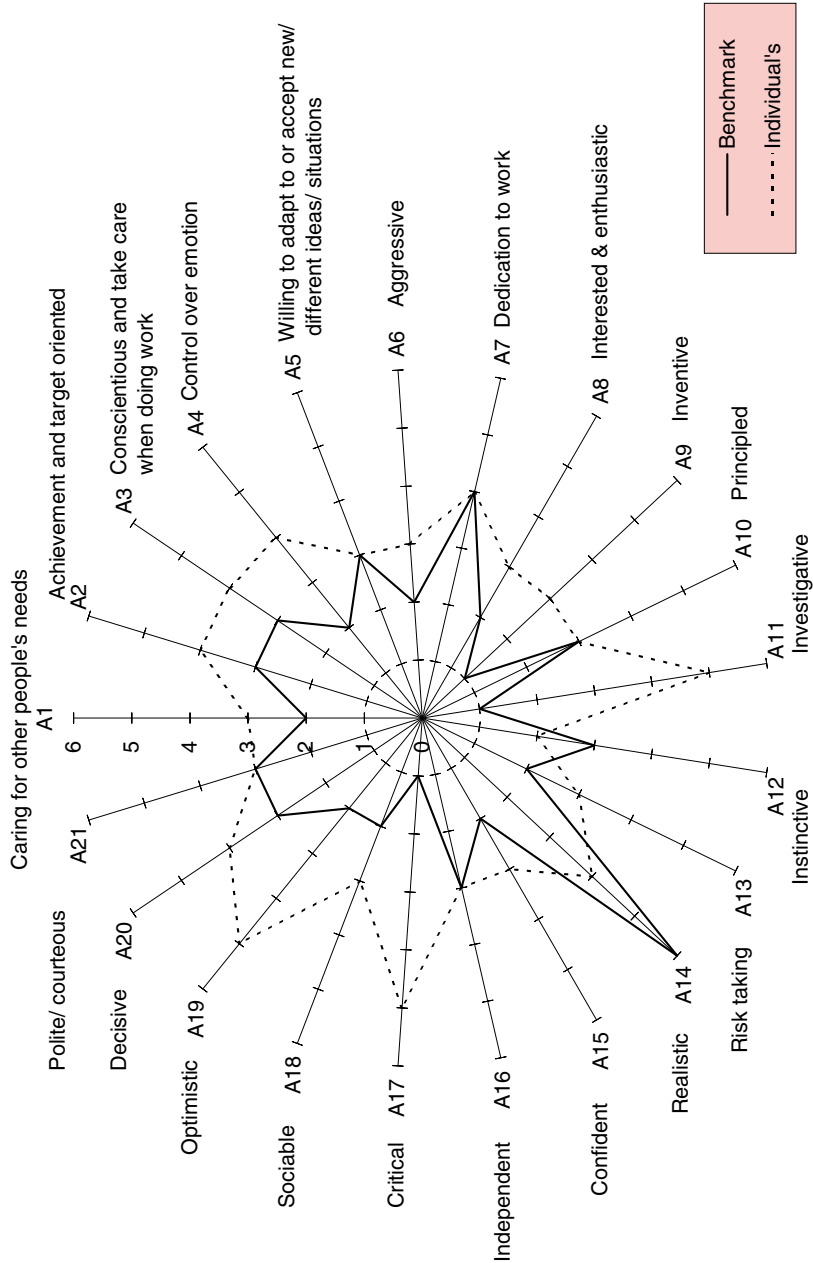


Fig. 2. The bifurcating response curves of system  $\alpha = 0.5$ ,  $\beta = 1.8$ ;  $\delta = 0.2$ ,  $\gamma = 0$ : (a)  $\mu = -1.3$ ; and (b)  $\mu = 0.3$ .

```

\begin{sidewaysfigure}
\centerline{\includegraphics[width=6.6in]{rv-fig2}}
\caption{The bifurcating response ...} \label{ra_fig2}
\end{sidewaysfigure}

```

Sub-figures are obtained with the following commands

```

\begin{figure}[ht]
\centerline{
\subfigure[]
{\includegraphics[width=2in]{rv-fig3a}\label{ra_fig3a}}
\hspace*{4pt}
\subfigure[Optional subcaption]
{\includegraphics[width=2in]{rv-fig3b}\label{ra_fig3b}}
}
\caption{Common caption here.} \label{ra_fig3} % common label
\end{figure}

```

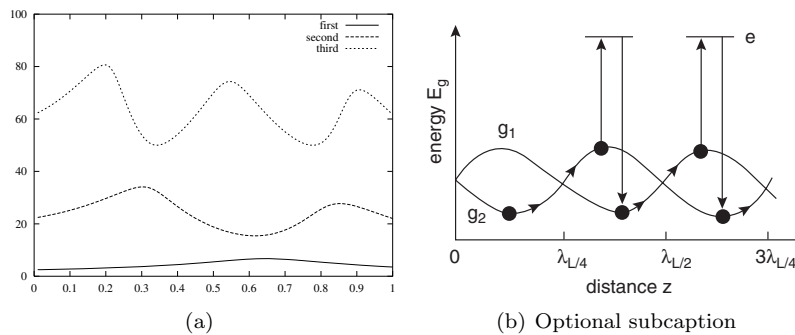


Fig. 3. Common caption here.

Sub-figures Fig. 3(a) and Fig. 3(b) are referred with `\fref{ra_fig3a}` and `\ref{ra_fig3b}` commands.

Side-by-side figures Fig. 4 and Fig. 5 are obtained with `\minifigure` commands.

```

\begin{figure}[ht]
\centerline{
\minifigure[Sample caption.]
{\includegraphics[width=2in]{rv-fig3a}\label{ra_fig4}}
\hspace*{4pt}
\minifigure[Sample caption.]
{\includegraphics[width=2in]{rv-fig3b}\label{ra_fig5}}
}
\end{figure}

```

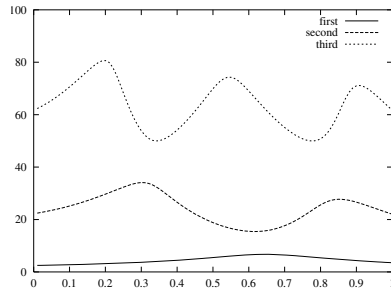


Fig. 4. Sample caption.

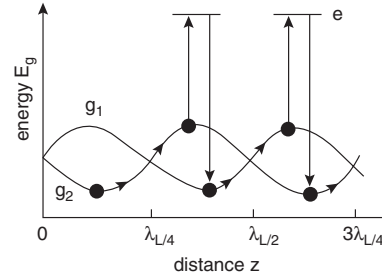


Fig. 5. Sample caption.

## 12. Cross-references

Use `\label` and `\ref` for cross-references to equations, figures, tables, sections, subsections, etc., instead of plain numbers. Every numbered part to which one wants to refer, should be labelled with the instruction `\label`. For example:

```
\begin{equation}
\mu(n, t) = \frac{\sum\limits^{\infty}_{i=1} 1 (d_i < t, N(d_i) = n)}
{\int\limits^t_{\sigma=0} 1 (N(\sigma)=n)d\sigma}\,, \label{ra_eq1}
\end{equation}
```

With the instruction `\ref` one can refer to a numbered part that has been labelled:

..., see also Eq. (`\ref{ra_eq1}`)

Some useful shortcut commands.

Shortcut command	Equivalent T <sub>E</sub> X command	Output
In the middle of a sentence:		
<code>\eref{ra_eq1}</code>	Eq. ( <code>\ref{ra_eq1}</code> )	Eq. (1)
<code>\sref{ra_sec1}</code>	Sec. <code>\ref{ra_sec1}</code>	Sec. 1
<code>\cref{ra_ch1}</code>	Chap. <code>\ref{ra_ch1}</code>	Chap. 1
<code>\fref{ra_fig1}</code>	Fig. <code>\ref{ra_fig1}</code>	Fig. 1
<code>\tref{ra_tbl1}</code>	Table <code>\ref{ra_tbl1}</code>	Table 1
At the starting of a sentence:		
<code>\Eref{ra_eq1}</code>	Equation ( <code>\ref{ra_eq1}</code> )	Equation (1)
<code>\Sref{ra_sec1}</code>	Section <code>\ref{ra_sec1}</code>	Section 1
<code>\Cref{ra_ch1}</code>	Chapter <code>\ref{ra_ch1}</code>	Chapter 1
<code>\Fref{ra_fig1}</code>	Figure <code>\ref{ra_fig1}</code>	Figure 1
<code>\Tref{ra_tbl1}</code>	Table <code>\ref{ra_tbl1}</code>	Table 1

- The `\label` instruction should be typed immediately after (or one line below), e.g., `\caption{ ... caption ... }\label{ra_fig1}`. Labels should not be typed inside the argument of a number-generating instruction such as `\section` or `\caption`,

- For chapters, labels should be placed inside `\chapter`, e.g.,  
`\chapter{Chapter Title\label{ra_ch2}}`.
- labels should not be repeated.

### 13. Citations

World Scientific's preferred style for Review Volume is the Vancouver (numbered) system, unless if the text is not very heavily referenced in which case the Harvard (author-date) system may be used.

System	Package
Vancouver (numbered)	
• Bracketed [1]	<code>\usepackage[square]{ws-rv-van}</code>
• Superscript <sup>1</sup>	<code>\usepackage{ws-rv-van}</code> (Default style)
Harvard (author-date)	<code>\usepackage{ws-rv-har}</code>

Citations in the text use the labels defined in the bibitem declaration, for example, the first paper by Jarlskog<sup>2</sup> is cited using the command `\cite{jarl88}`. The bibitem labels should not be repeated. For multiple citations do not use `\cite{1}\cite{2}`, but use `\cite{1,2}` instead.

#### 13.1. Vancouver Style

Reference citations in the text are to be numbered consecutively in Arabic numerals, in the order of first appearance. The numbered citations can appear in two ways:

- bracketed
- superscript (default style)

##### 13.1.1. Bracketed

References cited in the text are within square brackets, e.g.,

- ‘‘One can deduce from Ref.~\cite{benh93} that...’’  
 ‘‘One can deduce from Ref. [3] that...’’
- ‘‘See Refs.~\cite{ams04,bake72,benh93,brow88} and  
 \cite{davi93} for more details.’’  
 ‘‘See Refs. [1–3, 5] and [7] for more details.’’

##### 13.1.2. Superscript

References cited in the text appear as superscripts, e.g.,

- ‘‘...in the statement.\cite{ams04}’’  
 ‘‘...in the statement.<sup>1</sup>’’

- (2) ‘‘...have proven\cite{bake72} that this equation...’’  
 ‘‘...have proven<sup>2</sup> that this equation...’’

When the reference forms part of the sentence, it should appear with ‘‘Reference’’ or ‘‘Ref.’’, e.g.,

- (1) ‘‘One can deduce from Ref.\refcite{benh93} that...’’  
 ‘‘One can deduce from Ref. 3 that...’’
- (2) ‘‘See Refs.\refcite{ams04}--\refcite{benh93},  
 \refcite{brow88} and \refcite{davi93} for more details.’’  
 ‘‘See Refs. 1–3, 5 and 7 for more details.’’

When superscripted citations are used, there should not be a space before \cite{key}, e.g.,

citation: see\cite{zipf}  
 ↑  
 no character space here

Reference:

\bibitem{zipf} E. C. Zipf, {\it Bull. Am. Phys.Soc.} {\bf 15},  
 418 (1970).

#### Output:

citation: ...text.<sup>1</sup>

...

#### Reference

1. E. C. Zipf, *Bull. Am. Phys. Soc.* **15**, 418 (1970).

### 13.2. Harvard Style

Citations in the text use the labels defined in the `bibitem` declaration, for example, [Jarlskog (1988)] is cited using the command `\cite{jarl88}`. While `\citet{jarl88}` produces Jarlskog (1988). See Sec. 17 for more details on coding references in Vancouver and Harvard styles.

### 14. Footnote

Footnotes are denoted by a Roman letter superscript in the text. Footnotes can be used as

... total.\footnote{Sample footnote text.}

#### Output:

... in total.<sup>a</sup>

---

<sup>a</sup>Sample footnote text.



## 15. Acknowledgments

Acknowledgments to funding bodies etc. may be placed in a separate section at the end of the text, before the Appendices. This should not be numbered so use `\section*{Acknowledgements}`.

## 16. Appendix

Appendices should be used only when absolutely necessary. They should come before the References.

```
\begin{appendix}[Optional Appendix Title]
\section{Sample Appendix}
Text...
\subsection{Appendix subsection}
Text...
\begin{equation}
\mu(n, t) = ...
\label{appen1}
\end{equation}
\end{appendix}
```

## 17. Bibliography

### 17.1. *BIB<sub>T</sub>E<sub>X</sub> users*

BIB<sub>T</sub>E<sub>X</sub> users should use our bibliography style file `ws-rv-van.bst` or `ws-rv-har.bst`.

If you use the BIB<sub>T</sub>E<sub>X</sub> program to maintain your bibliography, you don't use the `thebibliography` environment. Instead, you include the lines

```
...
\usepackage{ws-rv-van}
...
\bibliographystyle{ws-rv-van}
\bibliography{bibfile}
```

where `ws-rv-van` refers to a file `ws-rv-van.bst`, which defines how your references will look. The argument to `\bibliography` refers to the file `bibfile.bib`, which should contain your database in BIB<sub>T</sub>E<sub>X</sub> format. Only the entries referred to via `\cite` will be listed in the bibliography.

To use Harvard (author-date) system `ws-rv-van.bst` is used with `\usepackage{ws-rv-har}`.

To complete the job, compile your file as follows:

- (1) latex ws-rv961x669
- (2) latex ws-rv961x669
- (3) bibtex ws-rv961x669
- (4) latex ws-rv961x669
- (5) latex ws-rv961x669

BIB <sub>T</sub> E <sub>X</sub>	
Database entry type	Sample citation
article	... text. <sup>3,4</sup>
proceedings	... text. <sup>5</sup>
inproceedings	... text. <sup>6</sup>
book	... text. <sup>2,7</sup>
edition	... text. <sup>8</sup>
editor	... text. <sup>9</sup>
series	... text. <sup>10</sup>
tech report	... text. <sup>11,12</sup>
unpublished	... text. <sup>13</sup>
phd thesis	... text. <sup>14</sup>
masters thesis	... text. <sup>15</sup>
incollection	... text. <sup>16</sup>
misc	... text. <sup>17</sup>

## 17.2. Non-BIB<sub>T</sub>E<sub>X</sub> users

Use `\bibitem` to produce the bibliography. The `bibitem` labels should not be repeated.

For Vancouver (numbered) style users, references are to be listed in the order cited in the text. Use the style shown in the following examples.

```
\begin{thebibliography}{9}
```

```
\bibitem{ams04}
```

```
\AmS, \emph{\AmS-\LaTeX{}} Version 2 User's Guide}. (American  
Mathematical Society, Providence, 2004).  
\url{http://www.ams.org/tex/amslatex.html}.
```

```
\bibitem{jarl88}
```

```
C.~Jarlskog, {\it CP Violation}. (World Scientific,  
Singapore, 1988).
```

```
\bibitem{best03}
```

```
B.~W. Bestbury, {\$\$}-matrices and the magic square,  
\emph{J. Phys. A}. {\bf 36} (7), 1947--1959, (2003).
```

`\bibitem{pier02}`

P.~X. Deligne and B.~H. Gross, On the exceptional series,  
and its descendants, `\emph{C. R. Math. Acad. Sci. Paris}`.  
`{\bf 335}` (11), 877--881, (2002).

`\bibitem{bake72}`

D.~W. Baker and N.~L. Carter, `\emph{Seismic Velocity Anisotropy  
Calculated for Ultramafic Minerals and Aggregates}`, In eds. H.~C.  
Heard, I.~V. Borg, N.~L. Carter, and C.~B. Raleigh, `\emph{Flow and  
Fracture of Rocks}`, vol.~16, `\emph{Geophys. Mono.}`, pp. 157--166.

`\end{thebibliography}`

For Harvard (author-date) style users, the references are to be listed in alphabetical order according to the surname of the first author. Use the style shown in the following examples.

`\begin{thebibliography}{9}`

`\bibitem[{Baker and Carter(1972)}]{bake72}`

Baker, D.~W. and Carter, N.~L. (1972). `\emph{Seismic Velocity  
Anisotropy Calculated for Ultramafic Minerals and Aggregates}`,  
`\emph{Geophys. Mono.}`, Vol.~16 (Am. Geophys. Union), pp. 157--166.

`\bibitem[{Benhamou and Colmerauer(1993)}]{benh93}`

Benhamou, F. and Colmerauer, A. (eds.) (1993). `\emph{Constraint  
Logic Programming, Selected Research}` (MIT Press).

`\bibitem[{Bestbury(2003)}]{best03}`

Bestbury, B.~W. (2003). `{\R$}`-matrices and the magic  
square, `\emph{J. Phys. A}` `\textbf{36}`, 7, pp. 1947--1959.

`\bibitem[{Brown(1988)}]{brow88}`

Brown, M.~E. (1988). `\emph{An Interactive Environment for Literate  
Programming}`, Ph.D. thesis, Texas A\&M University, TX, USA.

`\bibitem[{Churchill and Brown(1990)}]{chur90}`

Churchill, R.~V. and Brown, J.~W. (1990). `\emph{Complex  
Variables and Applications}`, 5th edn. (McGraw-Hill).

`\bibitem[{Deligne and Gross(2002)}]{pier02}`

Deligne, P.~X. and Gross, B.~H. (2002). On the exceptional series,  
and its descendants, `\emph{C. R. Math. Acad. Sci. Paris}`.  
`{\bf 335}` (11), 877--881.

`\end{thebibliography}`

## 18. Single Indexing

The first step in producing the index is to put the necessary `\index` commands in your document. The following example shows some simple `\index` commands and the index entries that they produce.

Page ii:	<code>\index{Alpha}</code>	Alpha, ii
Page viii:	<code>\index{alpha}</code>	alpha, viii, ix, 22
Page ix:	<code>\index{alpha}</code>	bites
Page 7:	<code>\index{gnat!size of}</code>	animal
Page 8:	<code>\index{bites!animal!gnats}</code>	gnats, 8, 10
Page 10:	<code>\index{bites!animal!gnats}</code>	gnus, 10
Page 10:	<code>\index{bites!animal!gnus}</code>	vegetable, 12
Page 12:	<code>\index{bites!vegetable}</code>	gnat, 32
Page 22:	<code>\index{alpha}</code>	anatomy, 35
Page 32:	<code>\index{gnat}</code>	size of, 7
Page 35:	<code>\index{gnat!anatomy}</code>	gnus
	<code>\index{gnus!good}</code>	bad, 38
Page 38:	<code>\index{gnus!bad}</code>	good, 35

You then run `LATEX` on your entire document, causing it to generate the file `ws-rv961x669.idx`. Next, run the `MakeIndex` program by typing the command, `makeindex ws-rv961x669`. This produces the file `ws-rv961x669.ind`. If `MakeIndex` generated no error messages, you can now rerun `LATEX` on your document and the index will appear. Compile your file as follows:

- (1) `latex ws-rv961x669`
- (2) `latex ws-rv961x669`
- (3) `bibtex ws-rv9x6` `% when bibtex is used`
- (4) `makeindex ws-rv9x6`
- (5) `latex ws-rv961x669`
- (6) `latex ws-rv961x669`

Reading the index, you may discover mistakes, which should be corrected by changing the appropriate `\index` commands in the document and regenerating the `ind` file. If there are problems that cannot be corrected in this way, you can edit the `ind` file directly. However, such editing is to be avoided because it must be repeated every time you generate a new version of the index. If you are making changes in the `.toc` or `.ind` files directly, then include `\nofiles` before `\begin{document}` to avoid overwriting. However, the command `\nofiles` should be used as the last option.

## 19. Multiple Indexes

To create a “subject” and an “author” index, the following packages and declarations should be included in the `TEX` file:

```

...
\usepackage{ws-index}
\makeindex
\newindex{aindx}{adx}{and}{Author Index}      % author index
\renewindex{default}{idx}{ind}{Subject Index} % subject index
...
\printindex[aindx]                            % to print author index
\printindex                                   % to print subject index

```

In text, the subject or default index entries are tagged with `\index{entry}`, and the author index entries are marked with `\index[aindx]{entry}` or `\aindx{entry}`.

To complete the job, compile your file as follows:

- (1) latex ws-rv961x669
- (2) latex ws-rv961x669
- (3) bibtex ws-rv961x669
- (4) makeindex ws-rv961x669
- (5) makeindex -o ws-rv961x669.and ws-rv961x669.adx
- (6) latex ws-rv961x669
- (7) latex ws-rv961x669

## Appendix A. Appendix Title

### A.1. Appendices

Appendices should be used only when absolutely necessary. They should come before the References.

Table A.1. Macros available for Tables/Figures.

Environment name	Purpose
<b>figure</b>	figures
<b>sidewaysfigure</b>	landscape figures
<b>table</b>	tables
<b>sidewaystable</b>	landscape tables
<b>\tbl{#1}{#2}</b>	#1 - table caption; #2 - tabular environment
Horizontal Rules for tables	
<b>\toprule</b>	one rule at the top
<b>\colrule</b>	one rule separating column heads from data cells
<b>\botrule</b>	one bottom rule
<b>\Hline</b>	one thick rule at the top and bottom of the tables with multiple column heads

Table A.2. Commonly used macros.

Macro name	Purpose
<code>\chapter{#1}{#2}</code>	Chapter title
<code>\author{#1}{#2}</code>	Author Name(S)
<code>\address{#1}</code>	Address
<code>\begin{abstract}</code>	Start Abstract
<code>\end{abstract}</code>	End Abstract
<code>\bigtoc</code>	For longer TOCs (e.g. 1.99. Section Title)
<code>\smalltoc</code>	For smaller TOCs (e.g. 1.9. Section Title)
<code>\tableofcontents</code>	Table of Contents
<code>\body</code>	Start Body Text
<code>\section{#1}</code>	Section heading
<code>\subsection{#1}</code>	Subsection heading
<code>\subsubsection{#1}</code>	Subsubsection heading
<code>\section*{#1}</code>	Unnumbered Section head
<code>\begin{itemlist}</code>	Start bulleted lists
<code>\end{itemlist}</code>	End bulleted lists
<code>\begin{arabiclist}</code>	Start arabic lists (1, 2, 3...)
<code>\end{arabiclist}</code>	End arabic lists
<code>\begin{romanlist}</code>	Start roman lists (i, ii, iii...)
<code>\end{romanlist}</code>	End roman lists
<code>\begin{Romanlist}</code>	Start roman lists (I, II, III...)
<code>\end{Romanlist}</code>	End roman lists
<code>\begin{alphalist}</code>	Start alpha lists (a, b, c...)
<code>\end{alphalist}</code>	End alpha lists
<code>\begin{Alphalist}</code>	Start alpha lists (A, B, C...)
<code>\end{Alphalist}</code>	End alpha lists
<code>\begin{proof}</code>	Start of Proof
<code>\end{proof}</code>	End of Proof
<code>\begin{theorem}</code>	Start of Theorem
<code>\end{theorem}</code>	End of Theorem (see Page 6 for detailed list)
<code>\begin{appendix}{#1}</code>	Start Appendix
<code>\end{appendix}</code>	End Appendix
<code>\begin{thebibliography}{#1}</code>	Start of reference list
<code>\end{thebibliography}</code>	End of reference list
<code>\bibitem[{#1}]{#2}</code>	reference item in author-date style
<code>\bibitem{#1}</code>	reference item in numbered style
<code>\bibliographystyle{#1}</code>	To include BIBTEX style file
<code>\bibliography{#1}</code>	To include BIBTEX database

### A.1.1. Appendix sectional units

If there is more than one appendix, number them alphabetically. Sectional units are obtained in the usual way, i.e. with the  $\text{\LaTeX}$  instructions `\section`, `\subsection`.

Number displayed equations occurring in the Appendix in this way, e.g. (A.1), (A.2), etc.

$$\zeta \mapsto \hat{\zeta} = a\zeta + b\eta \quad (\text{A.1})$$

$$\eta \mapsto \hat{\eta} = c\zeta + d\eta \quad (\text{A.2})$$

## References

1.  $\mathcal{A}\mathcal{M}\mathcal{S}$ ,  $\mathcal{A}\mathcal{M}\mathcal{S}$ - $\mathcal{L}\mathcal{A}\mathcal{T}\mathcal{E}\mathcal{X}$  Version 2 User's Guide. (American Mathematical Society, Providence, 2004). <http://www.ams.org/tex/amslatex.html>.
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