INSTRUCTIONS FOR PRODUCING A CAMERA-READY COPY (CRC) USING WORLD SCIENTIFIC PUBLISHING STYLE FILES

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This is where the abstract should be placed. It should consist of one paragraph and give a concise summary of the material in the article below. Replace the title, authors, and addresses within the curly brackets with your own title, authors, and addresses; please use capital letters for the title and the authors. You may have as many authors and addresses as you wish. Do not use footnotes in the abstract or the title; the acknowledgments for funding bodies etc. are placed in a separate section at the end of the text.

Keywords: Keyword1; Keyword2; Keyword3.

1. Guidelines

1.1. *Producing the Hard Copy*

The hard copy may be produced using the instructions given in the file *procs-readme10x7_2e.txt*, which are repeated in this section. You should have three files in total.[a] *procs-readme10x7_2e.txt* — the preliminary guide. *ws-procs10x7.cls* — the style file that provides the higher level latex commands for the proceedings. Don't change these parameters. *ws-procs10x7.tex* — the main text. You can delete our sample text and replace it with your own contribution to the volume, however we recommend keeping an initial version of the file for reference. Strip off any mail headers and then latex the tex file. The command for latexing is `latex ws-procs10x7`, do this twice to sort out the cross-referencing.

If you wish to use some other form of word-processor, some guidelines are given in Sec. 1.2 below. These files will work with LaTeX 2$_\varepsilon$. If there is an abbreviation defined in the new definitions at the top of the file *ws-procs10x7.tex* that conflicts with one of your own macros, then delete the appropriate command and revert to longhand. Failing that, please consult your local TeXpert to check for other conflicting macros that may be unique to your computer system. Page numbers are included at the top of the page for your guidance. Do not worry about the final pagination of the volume which will be done after you submit the paper.

1.2. *Using Other Word-Processing Packages*

If you want to use some other form of word-processor to construct your output, and are using the final hard copy version of these files as guidelines, then please follow the style given here for headings, table and figure captions, and the footnote and citation marks. For this size of volume, the final page dimensions will be 10 by 7 inches however you should submit the copy on standard A4 paper. The text area (excluding the page numbers) should be 8.25 by 5.5 inches and

[a] You can obtain these files from our web pages at: http://www.wspc.com.sg/style/proceedings_style.shtml

the separation between the columns is 10pts. The text should be in 10pt Roman for the title, section heads and the body of the text, using capitals for the title and authors, bold face for the title and headings, and italics for the subheadings. The abstract, footnotes, figure and table captions should be in 8pt.

It is also important to reproduce the spacing of the text and headings as shown here. Text should be slightly more than single-spaced; use a baselineskip (which is the average distance from the base of one line of text to the base of an adjacent line) of 13 pts and 10 pts for footnotes. All headings should be separated from the text preceding it by a baselineskip of about 26 pts and use a baselineskip of about 18 pts for the following text. Paragraphs should have a first line indented by about 0.25in, except where the paragraph is preceded by a heading, and the abstract should be indented on both sides by 0.25in from the main body of the text.

1.3. *Headings and Text*

Please preserve the style of the headings, text fonts and line spacing to provide a uniform style for the proceedings volume. In a two column format there are more difficulties when finding suitable line and page breaks. We recommend that you leave such problems until preparing the final draft and after you have checked the placing of the two-column wide tables etc. (See Sec. 1.8 below).

1.4. *Equations*

Equations should be confined to one column wherever possible, as in Eq. (1), and the `eqnarray` environment may be used to split equations into several lines, for example in Eq. (2), or to align several equations. An alternative method is given in Eq. (3) for long sets of equations where only one referencing equation number is wanted.

$$\frac{4\pi}{3}r_{ij}^3.\frac{4\pi}{3}p_{ij}^3 = \frac{h^3}{4}. \tag{1}$$

$$\begin{aligned} T = & Im[V_{11}V_{12}{}^*V_{21}{}^*V_{22}] \\ & + Im[V_{12}V_{13}{}^*V_{22}{}^*V_{23}] \\ & - Im[V_{12}V_{13}{}^*V_{22}{}^*V_{23}] \\ & - Im[V_{33}V_{31}{}^*V_{13}{}^*V_{11}]. \end{aligned} \tag{2}$$

$$\begin{aligned} \mathbf{K} = & \Im[V_{j,\alpha}V^*_{j,\alpha+1}V^*_{j+1,\alpha}V_{j+1,\alpha+1}] \\ & + \Im[V_{k,\alpha+2}V^*_{k,\alpha+3}V^*_{k+1,\alpha+2}V_{k+1,\alpha+3}] \\ & + \Im[V_{j+2,\beta}V^*_{j+2,\beta+1}V^*_{j+3,\beta}V_{j+3,\beta+1}] \\ & + \Im[V_{k+2,\beta+2}V^*_{k+2,\beta+3}V^*_{k+3,\beta+2}] \\ \\ \mathbf{L} = & \Im[V_{j+1,\alpha}V^*_{j+1,\alpha+1}V^*_{k,\alpha+2}V_{k,\alpha+3}] \\ & - \Im[V_{j,\alpha}V^*_{j,\alpha+1}V^*_{k+1,\alpha+2}V_{k+1,\alpha+3}] \\ & + \Im[V_{j+3,\beta}V^*_{j+3,\beta+1}V^*_{k+2,\beta+2}V_{k+2,\beta+3}] \\ & - \Im[V_{j+2,\beta}V^*_{j+2,\beta+1}V^*_{k+3,\beta+2}V_{k+3,\beta+3}] \\ \\ \mathbf{M} = & \Im[V_{j,\alpha+1}V^*_{j,\alpha}V^*_{j+1,\alpha+1}V_{j+1,\alpha}] \\ & + \Im[V_{k,\alpha+2}V^*_{k,\alpha+3}V^*_{k+1,\alpha+2}V_{k+1,\alpha+3}] \\ & + \Im[V_{j+2,\beta+1}V^*_{j+2,\beta}V^*_{j+3,\beta+1}V_{j+3,\beta}] \\ & + \Im[V_{k+2,\beta+2}V^*_{k+2,\beta+3}V^*_{k+3,\beta+2}], \end{aligned} \tag{3}$$

If it's essential to have a two-column wide equation then follow the Eq. (4). The surrounding environment is important here. In the TEX file *ws-procs10x7.tex* make sure that you keep the equation label within the inner equation environment.

For problems of placement of a wide equation, see Sec. 1.8 below. Please note, do not use square brackets in two-column wide figures, tables and equations. This is a bug due to the declaration `\twocolumn[...]` which is hidden in the definition of `table*` and `figure*`.

1.5. *Lists*

- item one,
- item two,
- item three.

$$U = D(\delta_1, \delta_2, \delta_3, \delta_4)R_{12}(a, \delta_5)R_{13}(b, \delta_6)R_{14}(c, \delta_7)R_{23}(d, \delta_8)R_{24}(e, \delta_9)R_{34}(f, \delta_{10}) \quad (4)$$

Items may also be numbered in lowercase Roman numerals:

(i) item one,
(ii) item two,
(iii) item three

(a) Lists within lists can be numbered with lowercase Roman letters,
(b) second item,
(c) item three.

1.6. *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 captions in figures and tables.

The tables are designed to have a uniform style throughout the proceedings volume. It doesn't matter how you choose to place the inner lines of the table, but we would prefer the border lines to be of the style shown in Table 1. For either a single or a double column table, the top and bottom horizontal lines should be single as in Table 1. For the inner lines of the table, it looks better if they are kept to a minimum.

Table 1. ... table caption ...

ID	m	R^2	x_2	Times
11	100	3135	1138	$<$ 98 sec
12	100	3135	1138	$<$ 99 sec
13	100	3135	1138	$<$ 100 sec

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. @llll@. Please avoid vertical rules in tables. But if you think the vertical rule is a must, you can use the standard LaTeX `tabular` environment.

We recommend the use of single column-wide tables wherever possible. Two column wide tables can be obtained with the environment `\begin{table*}` and `\end{table*}`. The caption heading for a table should be placed at the top of the table.

1.7. *Figures*

We recommend the use of single column-wide figures wherever possible, as shown in the example Fig. 1. If this is not possible, for two column wide figures use the commands `\begin{figure*}` and `\end{figure*}`, as shown in the example Fig. 2.

Very large figures and tables should be placed on a page by themselves. We recommend the use of single column-wide tables and figures wherever possible.

If you wish to 'embed' a postscript figure in the file, then remove the % mark from the declaration of the postscript figure within

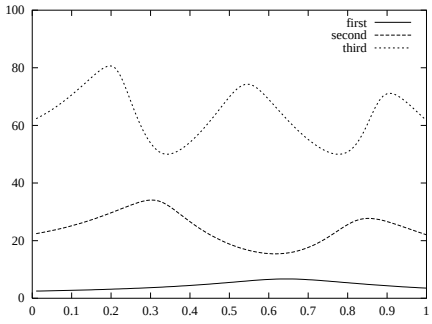

Fig. 1. ... figure caption here ...

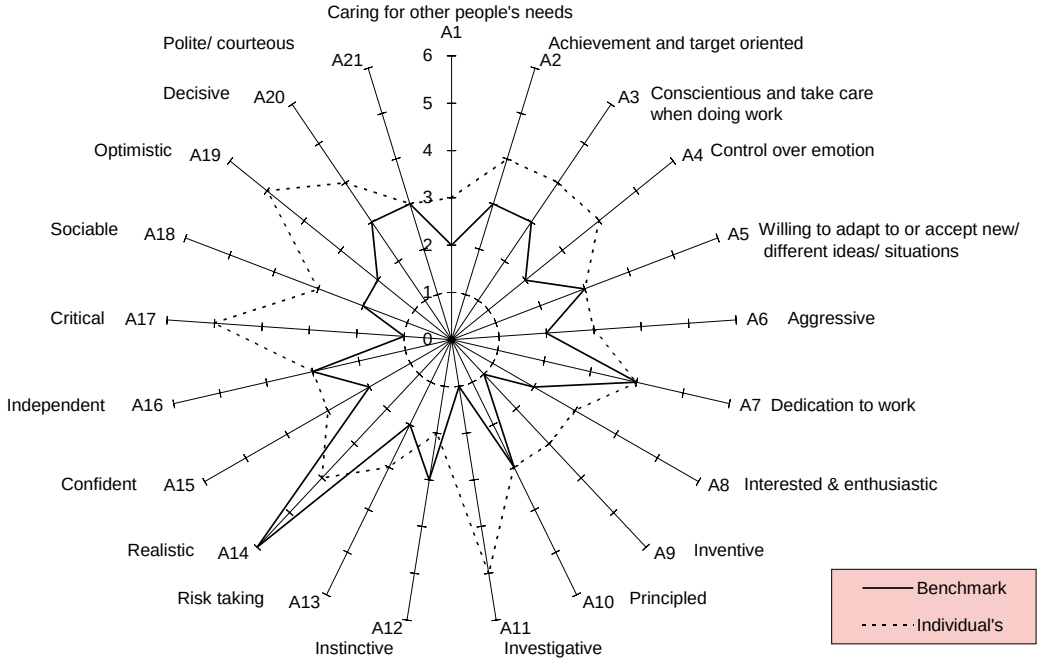

Fig. 2. ... figure caption here ...

the figure description and change the filename to an appropriate one. Also remove the comment mark from one of the two *input psfig* commands at the top of the file. You may need to play around with this as different computer systems appear to use different commands.

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 accomodate your figure (i.e. remove the lines and change the space in the example). Send the hard copy figure on a separate page, clearly identifying where it should be placed on the final hard copy. The hard copy figure you send should be correctly scaled as this ensures that the details will be visible in the final version.

The caption heading for a figure should be placed below the figure.

Landscape tables and figures can be typeset with following environments:

- `sidewaystable` (e.g. see Table 3) and
- `sidewaysfigure`.

1.8. *Limitations on the Placement of Equations, Tables and Figures*

In the final stages of preparing the document, try to declare the two-column wide figures, tables or equations at a point in *ws-procs10x7.tex* that is prior to the top of the column of hard-copy text where you would like the item to appear. Very large figures and tables should be placed on a seperate page by themselves. Again, we would recommend making any necessary adjustments to the layout of the figures and tables only in the final draft. It is also simplest to sort out line and page breaks in the last stages.

Table 2. Positive values of X_0 by eliminating Q_0 from Eqs. (15) and (16) for different values of the parameters f_0, λ_0 and α_0 in various dimension.

f_0	λ_0	α_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	—	—	—	—	—	—	—	—
0.1	0.1	2	1.667	1.1946	—	—	—	—	—	—
			0.806578	0.858211						
0.1	0.1	10	0.463679	0.465426	0.466489	0.466499	0.464947	0.45438	0.429651	0.35278
0.1	1	0.2	—	—	—	—	—	—	—	—
0.1	5	5	—	—	—	—	—	—	—	—
1	0.001	2	0.996033	0.968869	0.91379	0.848544	0.783787	0.669541	0.577489	—
			0.414324	0.41436	0.414412	0.414489	0.414605	0.415056	0.416214	
	0.001	0.2	0.316014	0.309739	—	—	—	—	—	—
			0.275327	0.275856						
	0.1	5	0.089435	0.089441	0.089435	0.089409	0.08935	0.089061	0.088347	0.084352
	1	3	0.128192	0.128966	0.19718	0.169063	0.142103	—	—	—
					0.41436	0.414412	0.414489			

Table 3. Positive values of X_0 by eliminating Q_0 from Eqs. (15) and (16) for different values of the parameters f_0, λ_0 and α_0 in various dimension.

f_0	λ_0	α_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	—	—	—	—	—	—	—	—
0.1	0.1	2	1.667	1.1946	—	—	—	—	—	—
			0.806578	0.858211						
0.1	0.1	10	0.463679	0.465426	0.466489	0.466499	0.464947	0.45438	0.429651	0.35278
0.1	1	0.2	—	—	—	—	—	—	—	—
0.1	5	5	—	—	—	—	—	—	—	—
1	0.001	2	0.996033	0.968869	0.91379	0.848544	0.783787	0.669541	0.577489	—
			0.414324	0.41436	0.414412	0.414489	0.414605	0.415056	0.416214	
	0.001	0.2	0.316014	0.309739	—	—	—	—	—	—
			0.275327	0.275856						
	0.1	5	0.089435	0.089441	0.089435	0.089409	0.08935	0.089061	0.088347	0.084352
	1	3	0.128192	0.128966	0.19718	0.169063	0.142103	—	—	—
					0.41436	0.414412	0.414489			

2. Theorems and Definitions

The WSPC document styles contain a set of pre-defined environments for theorems, definitions, proofs, remarks, etc.

Theorem 2.1 (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.

LaTeX provides `\newtheorem` to create new theorem environments. For a new theorem-type environment which is not defined in the style file, use

```
\newtheorem{remark}{Remark}[section]
\let\Remarkfont\upshape
\def\Remarkheadfont{\bfseries}

\begin{remark}
We have $\# H^2 (M \supset N) < ...
\end{remark}
```

Remark 2.1. We have $\#H^2(M \supset N) < \infty$ for an inclusion $M \supset N$ of factors of finite index.

2.1. *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, □, can be appended at the end of a proof with the command `\qed`.

Proof. This is just an example. □

Proof. [Proof of Lemma] This is just an example. □

2.2. *Footnotes, the Bibliography, Appendices and 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*{Acknowledgement}`.

It's preferable to have no appendices in a brief article, but if more than one is necessary then simply copy the `\section*{Appendix}` heading and type in Appendix A, Appendix B etc. between the brackets.

Footnotes are denoted by a letter superscript in the text, and references are denoted by a number superscript. Footnotes should be numbered sequentially in superscript lowercase Roman letters.[b] We have used `\bibitem` to produce the bibliography. Citations in the text use the labels defined in the bibitem declaration, for example, the first paper by Jarlskog[1] is cited using the command `\cite{ja}`.

If you more commonly use the method of square brackets in the line of text for citation than the superscript method, please note that you need to adjust the punctuation so that the citation command appears after the punctuation mark.

2.3. *Final Manuscript*

The final hard copy that you send must be absolutely clean and unfolded. It will be printed directly without any further editing. Use a printer that has a good resolution (300 dots per inch or higher). There should not be any corrections made on the printed pages, nor should adhesive tape cover any lettering. Photocopies are not acceptable.

The manuscript will not be reduced or enlarged when filmed so please ensure that indices and other small pieces of text are legible.

Acknowledgments

This is where one places acknowledgments for funding bodies etc. Note that there are no

[b] Footnotes should be typeset in 8 pt Times Roman at the bottom of the page.

section numbers for the Acknowledgments, Appendix or References.

Appendix A. First Appendix

Appendices should be used only when absolutely necessary. They should come before the References. If there is more than one appendix, number them alphabetically. Number displayed equations occurring in the Appendix in this way, e.g. (A.1), (A.2), etc.

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

Appendix B. Second Appendix

References in the text are to be numbered consecutively in Arabic numerals, in the order of first appearance. They are to be typed in superscripts after punctuation marks, e.g.

(i) "... in the statement.[1]"
(ii) "... have proven[1] that this equation ..."

This is done using the command: "`\cite{name}`".

When the reference forms part of the sentence, superscripts should not be used, e.g.

(i) "One can deduce from Ref. 7 that ..."
(ii) "See Refs. 1 and 8 for more details."
(iii) "We refer the readers to Ref. 4."

This is done using the command: "`Ref.~\refcite{name}`".

(Alternatively you may opt to use the default square bracket [ ] citation throughout.)

Appendix C. Standard Abbreviations

(a) Do not abbreviate the first word of any sentence:

"Figure 2 shows us ...."

(b) Some abbreviations:
(i) 'Figure' = 'Fig.'
(ii) 'Figures' = 'Figs.'
(iii) 'Equation' = 'Eq.'
(iv) 'Equations' = 'Eqs.'
(v) 'Section 5' = 'Sec. 5'
(vi) 'Sections 5 and 6' = 'Secs. 5 and 6'
(vii) 'for example' = 'e.g.'

Note that the first letter is capitalized. There is also a dot.

(c) When it is not appropriate, DO NOT abbreviate. Hence the word 'Table' is not abbreviated. We also do not write 'Eq. of motion'.

(d) Depending on author preference, sometimes 'Eq.' and 'Eqs.' are not used at all because it is understood that it is an equation. For example,

We can see a summation and an integration in (A.1).

References

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