

The `aip` substyle for REVTeX*

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This file embodies the implementation of the AIP journal substyles for APS's REVTeX 4.2 document class for electronic submissions to AIP journals.

The distribution point for this work is <http://publishing.aip.org/authors/preparing-your-manuscript>. The archive contains ready-to-Install files, documentation, and full source.

This package is also distributed via CTAN: <http://www.ctan.org/pub/tex-archive/macros/latex/contrib/aip>, and as a ready-to-install image as <http://www.ctan.org/pub/tex-archive/install/macros/latex/contrib/aip.tds.zip>.

The `aip` package was commissioned by the American Institute of Physics and is distributed under the terms of the L^AT_EX Project Public License, the same license under which all the portions of L^AT_EX itself is distributed. Please see <http://ctan.tug.org/macros/latex/base/lppl.txt> for details.

To use this document class, you must have a working T_EX installation equipped with L^AT_EX 2_ε and possibly pdf_{te}x and Adobe Acrobat Reader or equivalent.

To install, retrieve the distribution, unpack it into a directory on the target computer, and move the file `aip.rtx` into a location in your filesystem where it will be found by L^AT_EX.

To use, read the user documentation `auguide.pdf`.

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6.24.9	bmf	34
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1 Overview

REVTeX is a L^AT_EX 2_ε document class, somewhat like a hybrid of the standard L^AT_EX book and article classes.

This document class implements the AIP society and journal substyles: the journals represent a set of mutually exclusive class options that, in this case, allow the document class to address multiple journals within the AIP family. This society is obtained with class option aip.

2 Processing Instructions

The package file aip.rtx is generated from this file, aip4-2.dtx, using the DOC-STRIP facility of L^AT_EX via tex aip4-2.dtx. The typeset documentation that you are now reading is generated from the same file by typesetting it with L^AT_EX or pdftex via latex aip4-2.dtx or pdflatex aip4-2.dtx.

2.1 Build Instructions

You may bootstrap this suite of files solely from `aip4-2.dtx`. Prepare by installing L^AT_EX 2_ε (and either `tex` or `pdftex`) on your computer, then carry out the following steps:

1. Within an otherwise empty directory, typeset `aip4-2.dtx` with L^AT_EX or `pdflatex`; you will obtain the typeset documentation you are now reading, along with the installer `aip.ins`, and the file `README-AIP`.

Note: you will have to run L^AT_EX twice, then `makeindex`, then L^AT_EX again in order to obtain a valid index and table of contents.

2. Now typeset `aip4-2.dtx` with T_EX(not L^AT_EX), thereby generating the package file `aip.rtx`.
3. Install `aip.rtx` by moving it to a location in your filesystem where it will be found by L^AT_EX, like `tex/latex/aip`.
4. Install `aip.pdf` by moving it to `doc/latex/aip`.
5. Using the `.dbj` information herein, generate the needed `.bst` files and install them in `bibtex/bst/aip`.

2.2 Bill of Materials

Following is a list of the files in this distribution arranged according to provenance.

2.2.1 Primary Source

One single file generates all.

```
%aip4-2.dtx
%
```

2.2.2 Generated by `latex aip4-2.dtx`

Typesetting the source file under L^AT_EX generates the readme and the installer.

```
%README aip.ins
%
```

2.2.3 Generated by `tex aip4-2.dtx`

Typesetting the installer generates the package files.

```
%aip.rtx
%
```

2.2.4 Documentation

The following are the online documentation:

```
%aip.pdf
%
```

2.2.5 Auxiliary

The following are auxiliary files generated in the course of running L^AT_EX:

```
%aip.aux aip.idx aip.ind aip.log aip.toc
%
```

3 Code common to all modules

The following may look a bit klutzy, but we want to require only one place in this file where the version number is stated, and we also want to ensure that the version number is embedded into every generated file.

Now we declare that these files can only be used with L^AT_EX 2_ε. An appropriate message is displayed if a different T_EX format is used.

```
1 %<*driver|package|aapm|sor>
2 \NeedsTeXFormat{LaTeX2e}[1996/12/01]%
3 %</driver|package|aapm|sor>
```

As desired, the following modules all take common version information:

```
4 %<package>\ProvidesFile{aip4-2.rtx}%
5 %<aapm>\ProvidesFile{aapm4-2.rtx}%
6 %<sor>\ProvidesFile{sor4-2.rtx}%
7 %<*driver>
8 \expandafter\ProvidesFile\expandafter{\jobname.dtx}%
9 %</driver>
```

The following line contains, for once and for all, the version and date information. By various means, this information is reproduced consistently in all generated files and in the typeset documentation.

```
10 %<*driver|package>
11 %<version>
12 [2014/12/31/20:33:00 4.2a AIP substyle for REVTeX]% \fileversion
13 %</driver|package>
```

4 The driver module driver

This module, consisting of the present section, typesets the programmer's documentation, generating the .ins installer and README-AIP as required.

Because the only uncommented-out lines of code at the beginning of this file constitute the **driver** module itself, we can simply typeset the .dtx file directly, and there is thus rarely any need to generate the “driver” DOCSTRIP module.

Module delimiters are nonetheless required so that this code does not find its way into the other modules.

The `\end{document}` command concludes the typesetting run.

```
14 %<*driver>
```

4.1 The Preamble

The programmers documentation is formatted with the `ltxdoc` class with local customizations, and with the usual code line indexing.

```
15 \documentclass{ltxdoc}
16 \RequirePackage{ltxdocext}%
17 \let\url\undefined
18 \RequirePackage[colorlinks=true,linkcolor=blue]{hyperref}%
19 \gdef\lquote{'}\gdef\rquote{'}%
20 \CodelineIndex\EnableCrossrefs % makeindex -s gind.ist aip
21 \RecordChanges % makeindex -s gglo.ist -o aip.gls aip.glo
```

4.1.1 Docstrip and info directives

We use so many `DOCSTRIP` modules that we set the `StandardModuleDepth` counter to 1.

```
22 \setcounter{StandardModuleDepth}{1}
```

The following command retrieves the date and version information from this file.

```
23 \expandafter\GetFileInfo\expandafter{\jobname.dtx}%
```

4.2 The “Read Me” File

As promised above, here is the contents of the “Read Me” file. That file serves a double purpose, since it also constitutes the beginning of the programmer’s documentation. What better thing, after all, to have appear at the beginning of the typeset documentation?

A good discussion of how to write a ReadMe file can be found in Engst, Tonya, “Writing a ReadMe File? Read This” *MacTech* October 1998, p. 58.

Note the appearance of the `\StopEventually` command, which marks the dividing line between the user documentation and the programmer documentation.

The usual user will not be asked to do a full build, not to speak of the bootstrap. Instructions for carrying these processes begin the programmer’s manual.

```
24 \begin{filecontents*}{README-AIP}
25 \title{%
26 The \classname{aip} substyle for REV\TeX%
27 \protect\thanks{%
28 \fileversion\ \copyright 2009 American Institute of Physics
29 % For version number and date,
30 % search on "\fileversion" in the .dtx file,
31 % or see the end of the README file.
32 }%
```

```

33 }%
34
35 \author{%
36 Arthur Ogawa\thanks{mailto:arthur\_ogawa at sbcglobal.net}%
37 }%
38 \date{Version \fileversion, dated \filedate}%
39 \maketitle
40
41 This file embodies the implementation of the
42 AIP journal substyles for APS's \revtex\ 4.2 document class
43 for electronic submissions to AIP journals.
44
45 The distribution point for this work is
46 \url{http://publishing.aip.org/authors/preparing-your-manuscript}.
47 The archive contains ready-to-Install files, documentation, and full source.
48
49 This package is also distributed via CTAN:
50 \url{http://www.ctan.org/pub/tex-archive/macros/latex/contrib/aip}, and as a ready-to-install i
51 \url{http://www.ctan.org/pub/tex-archive/install/macros/latex/contrib/aip.tds.zip}.
52
53 The \classname{aip} package was commissioned by the American Institute of Physics
54 and is distributed under the terms of the \LaTeX\ Project Public License,
55 the same license under which all the portions of \LaTeX\ itself is distributed.
56 Please see \url{http://ctan.tug.org/macros/latex/base/lppl.txt} for details.
57
58 To use this document class, you must have a working
59 \TeX\ installation equipped with \LaTeXe\
60 and possibly pdftex and Adobe Acrobat Reader or equivalent.
61
62 To install, retrieve the distribution,
63 unpack it into a directory on the target computer,
64 and move the file \file{aip.rtx}
65 into a location in your filesystem where it will be found by \LaTeX.
66
67 To use, read the user documentation \file{auguide.pdf}.
68
69 \tableofcontents
70
71 \section{Overview}%
72 \revtex\ is a \LaTeXe\ document class, somewhat like a hybrid of
73 the standard \LaTeX\ \classname{book} and \classname{article} classes.
74
75 This document class implements the AIP society and journal substyles:
76 the journals represent a set of mutually exclusive class options that, in this case, allow the
77 document class to address multiple journals within the AIP family.
78 This society is obtained with class option \classoption{aip}.
79
80 \section{Processing Instructions}
81
82 The package file \file{aip.rtx}

```

```

83 is generated from this file, \file{aip4-2.dtx},
84 using the {\sc docstrip} facility of \LaTeX
85 via |tex aip4-2.dtx|.
86 The typeset documentation that you are now reading is generated from
87 the same file by typesetting it with \LaTeX\ or pdftex
88 via |latex aip4-2.dtx| or |pdflatex aip4-2.dtx|.
89
90 \subsection{Build Instructions}
91
92 You may bootstrap this suite of files solely from \file{aip4-2.dtx}.
93 Prepare by installing \LaTeXe\ (and either tex or pdftex) on your computer,
94 then carry out the following steps:
95 \begin{enumerate}
96 \item
97 Within an otherwise empty directory,
98 typeset \file{aip4-2.dtx} with \LaTeX\ or pdflatex;
99 you will obtain the typeset documentation you are now reading,
100 along with
101 the installer \file{aip.ins},
102 and the file \file{README-AIP}.
103
104 Note: you will have to run \LaTeX\ twice, then \file{makeindex}, then
105 \LaTeX\ again in order to obtain a valid index and table of contents.
106 \item
107 Now typeset \file{aip4-2.dtx} with \TeX (not \LaTeX),
108 thereby generating the package file \file{aip.rtx}.
109 \item
110 Install \classname{aip.rtx}
111 by moving it to a location
112 in your filesystem where it will be found by \LaTeX,
113 like \file{tex/latex/aip}.
114 \item
115 Install \classname{aip.pdf}
116 by moving it to
117 \file{doc/latex/aip}.
118 \item
119 Using the \file{.dbj} information herein,
120 generate the needed \file{.bst} files and install them in
121 \file{bibtex/bst/aip}.
122 \end{enumerate}
123 \end{filecontents*}

```

4.3 The Document Body

Here is the document body, containing only a \DocInput directive—referring to this very file. This very cute self-reference is a common `ltxdoc` idiom.

```

124 \begin{document}%
125 \newcommand\revtex{REV\TeX}%
126 \expandafter\DocInput\expandafter{\jobname.dtx}%

```



```

127 % ^^A\PrintChanges
128 \end{document}
129 %</driver>

```

5 AIP: A set of journal-specific extensions to REVTeX

To create a journal substyle, you create a .rtx file, in our case aip.rtx. Within that file, you override procedures and parameter assignments as you see fit. Ideally they will be generally applicable to all of that society's journals (see the file aps.rtx for a realization of this scheme). Also within that file, you include a section of code for each journal, that for JMP looks like:

```

% \ifx{\@journal\journal@jmp}{%
% code specific to the JMP
% }{}%
%

```

6 The aip class option: the aip module

The file aip.rtx is read in by the revtex4 document class if \@society has the value aip.

Here, code specific to AIP journals appears.

We first give some text entities (amounting to journal abbreviations), then some AIP-specific initialisations, then code for particular AIP journals. In the latter case, the choice is keyed off the macro \@journal.

Note on \@AtEndOfClass: this file, like all journal substyles, is read in at \@AtEndOfClass time, so you should not use this command in this file. Note for L^AT_EX developers: It would be an improvement in L^AT_EX to \let\@AtEndOfClass to something like \@firstofone. This change would be effected in \@onefilewithoptions.

```

130 %<*package>

```

6.1 Defend Against Forseeable Errors

Protect this file from being read in by anything but REVTeX.

```

131 \ifx\undefined\substyle@ext
132 \def\@tempa{%
133 \endinput
134 \GenericWarning{I must be read in by REVTeX! (Bailing out)}%
135 }%
136 \expandafter\else
137 \def\@tempa{%
138 \expandafter\fi\@tempa
139 \class@info{RevTeX society AIP selected}%

```

6.2 Substyle Options

Here are the class options relating to the AIP:

```
140 \DeclareOption{jcp}{\change@journal{jcp}}%
141 \DeclareOption{pop}{\change@journal{pop}}%
142 \DeclareOption{rsi}{\change@journal{rsi}}%
143 \DeclareOption{jap}{\change@journal{jap}}%
144 \DeclareOption{apl}{\change@journal{apl}}%
145 \DeclareOption{apm}{\change@journal{apm}}%
146 \DeclareOption{cha}{\change@journal{cha}}%
147 \DeclareOption{pof}{\change@journal{pof}}%
148 \DeclareOption{bmf}{\change@journal{bmf}}%
149 \DeclareOption{rse}{\change@journal{rse}}%
150 \DeclareOption{jmp}{\change@journal{jmp}}%
151 \DeclareOption{adv}{\change@journal{adv}}%
152 \DeclareOption{sd}{\change@journal{sd}}%
153 \DeclareOption{jor}{\change@journal{jor}}%
154 \DeclareOption{cp}{\change@journal{cp}}%
```

6.3 Abbreviations

The following macros constitute typing shortcuts for certain journal names.

```
155 \def\adv{AIP Advances}%
156 \def\ao{Appl.\ Opt.}%
157 \def\ap{Appl.\ Phys.}%
158 \def\apl{Appl.\ Phys.\ Lett.}%
159 \def\apm{Appl.\ Phys.\ Lett.\ Mater.}%
160 \def\apj{Astrophys.\ J.}%
161 \def\bell{Bell Syst.\ Tech.\ J.}%
162 \def\bmf{Biomicrofluidics}%
163 \def\cha{Chaos}%
164 \def\jqe{IEEE J.\ Quantum Electron.}%
165 \def\assp{IEEE Trans.\ Acoust.\ Speech Signal Process.}%
166 \def\aprop{IEEE Trans.\ Antennas Propag.}%
167 \def\mtt{IEEE Trans.\ Microwave Theory Tech.}%
168 \def\iovs{Invest.\ Ophthalmol.\ Vis.\ Sci.}%
169 \def\jcp{J.\ Chem.\ Phys.}%
170 \def\jap{J.\ Appl.\ Phys.}%
171 \def\jmp{J.\ Math.\ Phys.}%
172 \def\jmo{J.\ Mod.\ Opt.}%
173 \def\josa{J.\ Opt.\ Soc.\ Am.}%
174 \def\josaa{J.\ Opt.\ Soc.\ Am.\ A}%
175 \def\josab{J.\ Opt.\ Soc.\ Am.\ B}%
176 \def\jpp{J.\ Phys.\ (Paris)}%
177 \def\jpr{J.\ Phys.\ Chem.\ Ref.\ Data}%
178 \def\ltp{Low.\ Temp.\ Phys.}%
179 \def\nat{Nature (London)}%
180 \def\oc{Opt.\ Commun.}%
181 \def\ol{Opt.\ Lett.}%

```

```

182 \def\pl{Phys.\ Lett.}%
183 \def\pop{Phys.\ Plasmas}%
184 \def\pof{Phys.\ Fluids}%
185 \def\pra{Phys.\ Rev.\ A}%
186 \def\prb{Phys.\ Rev.\ B}%
187 \def\prc{Phys.\ Rev.\ C}%
188 \def\prd{Phys.\ Rev.\ D}%
189 \def\pre{Phys.\ Rev.\ E}%
190 \def\prl{Phys.\ Rev.\ Lett.}%
191 \def\rmp{Rev.\ Mod.\ Phys.}%
192 \def\rsi{Rev.\ Sci.\ Instrum.}%
193 \def\rse{J.\ Renewable Sustainable Energy}%
194 \def\pspie{Proc.\ Soc.\ Photo-Opt.\ Instrum.\ Eng.}%
195 \def\sjqe{Sov.\ J.\ Quantum Electron.}%
196 \def\vr{Vision Res.}%
197 \def\sd{Structural\ Dynamics}%
198 \def\jor{J.\ Rheol.}%
199 \def\cp{AIP\ Conference\ Proceedings}%

```

Option allowing for “numerical author-year” bibliography.

```

200 \DeclareOption{author-numerical}{%
201   \@booleantrue\authoryear@sw
202   \@booleantrue\authornum@sw
203 }%

```

Optionally allow article title in bibliography entries. A new switch is defined here: `\aip@jtitx@sw` signifies that the numbered style bibliography is to be prepared without article titles in `@ARTICLE` entries. Otherwise, such titles are incorporated if present in the `.bib` entry. By default, exclude the article titles.

```

204 \DeclareOption{article-title}{%
205   \@booleanfalse\aip@jtitx@sw
206 }%
207 \@booleantrue \aip@jtitx@sw

```

Establish default options for this society.

```

208 \@booleanfalse\authoryear@sw
209 \@booleanfalse\authornum@sw
210 \@booleanfalse\onecolumn@sw
211 \@booleanfalse\newonecolumn@sw

```

`\@bibdataout@init` Procedure `\@bibdataout@aip` has the job of writing the control record into the job's `\jobnameaip4-2.dtx.bib` file, where it will adjust the options to `aip4-2.dtx.bst` processing. It is installed into the initialization procedure `\@bibdataout@init`, and its meaning is set by the society (AIP) and journal.

```

212 \appdef\@bibdataout@rev{\@bibdataout@aip}%
213 \def\@bibdataout@aip{%
214   \immediate\write\@bibdataout{%

```

An entry that controls processing of the `aip4-2.dtx.bst` file has entry type `@CONTROL`.

```

215 @CONTROL{%
216   aip41Control%

```

Say whether we want long bibliography style (the default), or the abbreviated style.

```

217   \longbibliography@sw{\true@sw}{\aip@jtitx@sw{\false@sw}{\true@sw}}%
218   {%
219     ,pages="1",title="0"%
220   }{%
221     ,pages="0",title=""%
222   }%
223 }%
224 }%

```

Place a `\citation` into the auxiliary file corresponding to this entry.

```

225 \if@filesw
226   \immediate\write\@auxout{\string\citation{aip41Control}}%
227 \fi
228 }%

```

For AIP, the preprint style `preprint` is the default.

```

229 \@booleantrue\preprintsty@sw

```

```

\showPACS@sw If \showPACS@sw is true, print the PACS information in the title block, otherwise
\showKEYS@sw not. Similarly for \showKEYS@sw and the keywords.
230 \@booleantrue\showPACS@sw
231 \@booleantrue\showKEYS@sw

```

`\refname` In reprint style only, we eliminate the head above the bibliography.

```

232 % TeXSupport
233 \let\old@refname\refname
234 \appdef\setup@hook{%
235   \preprintsty@sw}{%
236   \let\refname\empty
237 }%
238 }%

```

6.4 AIP Setup

Here we define the default procedures for AIP journals. Individual AIP journals may override these definitions.

6.4.1 Running header and footer

Page style for all AIP journals. We assert our own page style only if nobody else has done so. Users wishing to customize their documents will be able to invoke a `\pagestyle` command anywhere in the preamble. FIXME: `\preprintsty@sw` is defined?

```

239 \appdef\setup@hook{%

```

```

240 \preprintsty@sw{%
241 \ps@preprint
242 }{%
243 \ps@article
244 }%
245 }%

```

The spc says: “Running title must be provided on title page”, and that journal classes 1b and 2 have no running title.

```

246 \def\ps@preprint{%
247   \def\@oddhead{\@runningtitle\hfil}%
248   \def\@evenhead{\@runningtitle\hfil}%
249   \def\@oddfoot{\hfil\thepage\quad\checkindate\hfil}%
250   \def\@evenfoot{\hfil\thepage\quad\checkindate\hfil}%
251   \let\@mkboth\@gobbletwo
252   \let\sectionmark\@gobble
253   \let\subsectionmark\@gobble
254 }%
255 \def\ps@article{%
256   \def\@evenhead{\let\\\heading@cr\thepage\quad\checkindate\hfil\@runningtitle}%
257   \def\@oddhead{\let\\\heading@cr\@runningtitle\hfil\checkindate\quad\thepage}%
258   \def\@oddfoot{}%
259   \def\@evenfoot{}%
260   \let\@mkboth\@gobbletwo
261   \let\sectionmark\@gobble
262   \let\subsectionmark\@gobble
263 }%
264 \def\@runningtitle{\@shorttitle}%

```

6.4.2 Title block

The specifics of the title block. Apply to all AIP journals; individual journals may override these settings.

```

\titlename
265 \renewenvironment{titlepage}{%
266   \let\wastwocol@sw\twocolumn@sw
267   \onecolumngrid
268   \newpage
269   \thispagestyle{titlepage}%
270   \c@page\z@ article sets this to one not zero???
271 }{%
272   \wastwocol@sw\twocolumngrid\newpage}%
273 }%

```

\@fnsymbol On the title page, footnotes are lettered with right parenthesis: “a”).

```

274 \let\@fnsymbol@latex\@fnsymbol
275 \let\@fnsymbol\@alph

```

`\adjust@abstractwidth` This procedure is used by many titlepage elements to indent on the left by a particular amount. The author list uses `\frontmatter@authorformat` to accomplish the same.

```

276 \def\adjust@abstractwidth{%
277   \parindent1em\relax
278   \advance\leftskip.5in\relax
279   \@totalleftmargin\leftskip
280   \@afterheading\@afterindentfalse
281 }%
```

`\frontmatter@abstractheading` AIP Journals all set the abstract head the same way, with no head.

```

282 \def\frontmatter@abstractheading{}
```

`\frontmatter@abstractfont` All AIP journals set the abstract body the same way.

```

283 \def\frontmatter@abstractfont{%
284   %\small
285   \adjust@abstractwidth
286 }%
```

All AIP journal preprints use separate titlepage and full-width abstract.

```

287 \appdef\setup@hook{%
288   \preprintsty@sw{%
289     \@booleantrue\titlepage@sw
290   }% \def\frontmatter@affiliationfont{\it}%
291   \let\section\section@preprintsty
292   % \let\changfrom\section\changfrom@preprintsty
293   \let\subsection\subsection@preprintsty
294   \let\subsubsection\subsubsection@preprintsty
295 }{}%
296 }%
```

`\frontmatter@authorformat` All AIP journals set the author list the same. The leading is 11.5 points, and there is 11.5 points of extra space above the first author line (which amounts to the same thing as 11.5 points extra below the title) for a total of 23 points base-to-base.

```

297 \def\frontmatter@@indent{%
298   \skip@ \@flushglue
299   \@flushglue\z@ plus.3\hsize\relax
300   \raggedright
301   \advance\leftskip.5in\relax
302   \@totalleftmargin\leftskip
303   \@flushglue\skip@
304 }%
305 \def\frontmatter@authorformat{%
306   \frontmatter@@indent
307   \sffamily
308   %\advance\baselineskip\p@
309   %\parskip11.5\p@\relax
310 }%
311 \renewcommand*{\email[1][Electronic mail: ]{\begingroup\sanitize@url\@email{#1}}%
```

`\frontmatter@above@affilgroup` The default amount of space above affiliation.

```

312 \def\frontmatter@above@affilgroup{%
313 }%

```

`\frontmatter@above@affiliation` The default amount of space above affiliation.

```

\frontmatter@above@affiliation@script 314 \def\frontmatter@above@affiliation@script{%
315 \frontmatter@@indent
316 %\addvspace{3.5\p@}%
317 }%
318 \def\frontmatter@above@affiliation{%
319 }%

```

`\frontmatter@affiliationfont` All AIP journals set the affiliation the same. Like the author, but in italic.

```

320 \def\frontmatter@affiliationfont{%
321 \frontmatter@@indent
322 \preprintsty@sw{}\small}%
323 \it
324 }%

```

`\frontmatter@collaboration@above`

```

325 \def\frontmatter@collaboration@above{%
326 }%

```

Set up the default AIP style for title block authors and affiliations.

`\frontmatter@setup` All AIP journals set the title page using the same font and size. However, justification varies for the title block elements, so we assert none here.

```

327 \def\frontmatter@setup{%
328 \normalfont
329 }%

```

`\frontmatter@title@above` All AIP journals set the article title 12 point Times Roman, bold, flush left.

```

\frontmatter@title@format 330 \def\frontmatter@title@above{\addvspace{6\p@}}%
\frontmatter@title@below 331 \def\frontmatter@title@format{%
332 \preprintsty@sw{}\Large}%
333 \sffamily
334 \bfseries
335 \raggedright
336 \parskip\z@skip
337 }%
338 \def\frontmatter@title@below{\addvspace{3\p@}}%

```

`\frontmatter@makefnmark` All AIP journals share this procedure for setting the titlepage footnote text: superior lowercase letter, with right parenthesis.

```

339 \def\@author@parskip{3\p@}%
340 \@booleantrue\altaffilletter@sw
341 \def\frontmatter@makefnmark{%
342 \@textsuperscript{%

```

```

343 \normalfont\@thefnmark%(
344 )%
345 }%
346 }%
347 \def\frontmatter@authorbelow{%
348 \addvspace{3\p@}%
349 }%

\affil@cutoff We override \affil@cutoff to enforce the rule that, if a single affiliation appears
on the title page, then no affiliation superscript at all is produced.
350 \let\affil@cutoff\tw@
De awa.

\frontmatter@RRAP@format All AIP journals use the same format for the “Received, Revised, etc.” block on
the title page.
Change note: 11.5 points b-b from author/affiliation down to date.
351 \def\frontmatter@RRAP@format{%
352 \addvspace{5\p@}%
353 \small
354 \raggedright
355 \advance\leftskip.5in\relax
356 \@totalleftmargin\leftskip
357 % \preprintsty@sw{}\parskip.5ex\relax}%
358 \everypar{%
359 \hbox\bgroup(\@gobble@leavemode@uppercase%)
360 }%
361 \def\par{%
362 \@ifvmode{}\{%(
363 \unskip)\egroup\@par
364 }%
365 }%
366 }%
367 \def\punct@RRAP{;\egroup\ \hbox\bgroup}%
368 \def\@gobble@leavemode@uppercase#1#2{\expandafter\MakeTextUppercase}%

\frontmatter@PACS@format
369 \def\frontmatter@PACS@format{%
370 \addvspace{11\p@}%
371 % \footnotesize
372 \adjust@abstractwidth
373 \parskip\z@skip
374 \samepage
375 }%

\frontmatter@keys@format
376 \def\frontmatter@keys@format{%
377 % \footnotesize
378 \adjust@abstractwidth
379 \samepage

```



```

380 }%

\ps@titlepage Title page style. Currently empty except for preprint header, which consists of all
               the \preprint arguments, stacked flush right at the right margin.

381 \def\ps@titlepage{%
382   \def\@oddhead{%
383     \@runningtitle
384     \hfill
385     \produce@preprints\@preprint
386   }%
387   \let\@evenhead\@oddhead
388   \def\@oddfoot{%
389     \hb@xt@\z@\byrevtex\hss}%
390     \hfil
391     \preprintsty@sw{\thepage}{}%
392     \quad\checkindate
393     \hfil
394   }%
395   \let\@evenfoot\@oddfoot
396 }%
397 \def\byrevtex{\byrevtex@sw{Typeset by REV\TeX and AIP}{}}%

\produce@preprints

398 \def\produce@preprints#1{%
399   \preprint@sw{%
400     \vtop to \z@{%
401       \def\baselinestretch{1}%
402       \small
403       \let\preprint\preprint@count
404       \count@\z@#1\@ifnum{\count@>\tw@}{%
405         \hbox{%
406           \let\preprint\preprint@hlist
407           #1\setbox\z@\lastbox
408         }%
409       }{%
410         \let\preprint\preprint@cr
411         \halign{\hfil##\cr#1\cr}%
412         \par
413         \vss
414       }%
415     }%
416   }{%
417   }%
418   \def\preprint@cr#1{#1\cr}%
419   \def\preprint@count#1{\advance\count@\@ne}%
420   \def\preprint@hlist#1{#1\hbox{, }}%

```

6.4.3 Lead-in paragraph

The `Lead-in paragraph` environment formats the AIP “lead paragraph”. To avoid introducing new syntax, we take over the `quotation` environment until the first `\section` (or other sectioning command) appears.

```
421 \newenvironment{Lead@inParagraph}{%
422   \par
423   \bfseries
424   \@afterheading\@afterindentfalse
425 }{%
426   \par
427   \hb@xt@\hsize{\hfil\leaders\hrule\hfil\leaders\hrule\hfil\hfil}%
428 }%
```

At the beginning of the document temporarily change the meaning of the `quotation` environment, restoring it once the first sectioning command is given.

```
429 \appdef\frontmatter@init{%
430   \let@environment{quotation@ltx}{quotation}%
431   \let@environment{quotation}{Lead@inParagraph}%
432 }%
433 \appdef\@startsection@hook{%
434   \let@environment{quotation}{quotation@ltx}%
435 }%
```

6.4.4 Stacked Heads

All AIP journals put a period (.), followed by quad space, after the section number. Also, no hanging section number.

```
436 \def\@seccntformat#1{\csname the#1\endcsname.\quad}%
437 \def\@hangfrom#1#2#3{#1#2#3}%
```

Note that in the following, we wish to set the section head uppercase, so we use David Carlisle’s `\MakeTextUppercase`. However, because this procedure effectively parses its argument (looking for things to *not* translate), it has to be invoked in such a way that the argument of the `\section` command is passed to it as its own argument.

To accomplish this, we use the `\@hangfrom@` hook, which was developed for this purpose.

```
438 \def\section{%
439   \@startsection
440   {section}%
441   {1}%
442   {\z@}%
443   {0.8cm \@plus1ex \@minus .2ex}%
444   {0.5cm}%
445   {%
446     \normalfont
447     \small
448     \sffamily
```

```

449     \bfseries
450     \raggedright
451 }%
452 }%
453 \def\@hangfrom@section#1#2#3{\@hangfrom{#1#2}\MakeTextUppercase{#3}}%
454 \def\@hangfroms@section#1#2{#1\MakeTextUppercase{#2}}%

```

See, e.g., BMF_044101_1 (1) or BMF_044103_1 (1)

```

455 \def\subsection{%
456   \@startsection
457   {subsection}%
458   {2}%
459   {\z@}%
460   {.8cm \@plus1ex \@minus .2ex}%
461   {.5cm}%
462   {%
463     \normalfont
464     \small
465     \sffamily
466     \bfseries
467     \raggedright
468   }%
469 }%

```

See, e.g., BMF_044104_1 (1), JMP_123520_1 (48),

```

470 \def\subsubsection{%
471   \@startsection
472   {subsubsection}%
473   {3}%
474   {\z@}%
475   {.8cm \@plus1ex \@minus .2ex}%
476   {.5cm}%
477   {%
478     \normalfont
479     \small
480     \sffamily
481     \bfseries
482     \itshape
483     \raggedright
484   }%
485 }%

```

6.4.5 Runin Heads

```

486 \def\paragraph{%
487   \@startsection
488   {paragraph}%
489   {4}%
490   {\parindent}%
491   {\z@}%

```

```

492 {-1em}%
493 {\normalfont\normalsize\itshape}%
494 }%
495 \def\subparagraph{%
496 \startsection
497 {subparagraph}%
498 {5}%
499 {\parindent}%
500 {3.25ex \@plus1ex \@minus .2ex}%
501 {-1em}%
502 {\normalfont\normalsize\bfseries}%
503 }%

```

```

\section@preprintsty Here are the formatting procedures specific to the preprint style; the only difference
\subsection@preprintsty is that the heads are flush left instead of centered.
\subsubsection@preprintsty
504 \def\section@preprintsty{%
505 \startsection
506 {section}%
507 {1}%
508 {\z@}%
509 {0.8cm \@plus1ex \@minus .2ex}%
510 {0.5cm}%
511 {%
512 \normalfont
513 \bfseries
514 \raggedright
515 }%
516 }%
517 %\def\@hangfrom@section@preprintsty#1#2#3{\@hangfrom{#1#2}\MakeTextUppercase{#3}}%
518 \def\subsection@preprintsty{%
519 \startsection
520 {subsection}%
521 {2}%
522 {\z@}%
523 {.8cm \@plus1ex \@minus .2ex}%
524 {.5cm}%
525 {%
526 \normalfont
527 \bfseries
528 \raggedright
529 }%
530 }%
531 \def\subsubsection@preprintsty{%
532 \startsection
533 {subsubsection}%
534 {3}%
535 {\z@}%
536 {.8cm \@plus1ex \@minus .2ex}%
537 {.5cm}%

```

```

538    {%
539    \normalfont
540 %    \small
541    \itshape\bfseries
542    \raggedright
543    }%
544 }%

```

For examples of **theorem**, **proposition**, **lemma**, **remark**, **corollary**, **example**, and **proof** (with optional title), using independent numbering for each class, and with numbered and roman lists therein, see JMP_122901.1 (48).

For theorems, etc, numbered by section, (and with theorems in the appendix) but equations numbered throughout, see JMP_123301.1 (48).

For a (roman) list in text, theorem, and proof, see JMP_123514.1 (48).

For numbered list in text, and equations numbered by section, see JMP_123518.1 (48).

All AIP journals use frontmatter footnotes by default.

```

545 \let\frontmatter@footnote@produce\frontmatter@footnote@produce@footnote

```

6.4.6 Table of Contents

The toc will itself make an entry in the toc, but we temporarily turn off toc formatting for the duration.

```

546 \def\@pnumwidth{1.55em}
547 \def\@tocrmarg {2.55em}
548 \def\@dotsep{2}
549 \def\ltxu@dotsep{4.5pt}
550 \setcounter{tocdepth}{3}

551 \def\tableofcontents{%
552 \addtocontents{toc}{\string\tocdepth@munge}%
553 \print@toc{toc}%
554 \addtocontents{toc}{\string\tocdepth@restore}%
555 }%

556 \def\tocdepth@munge{%
557 \let\l@section@saved\l@section
558 \let\l@section\@gobble@tw@
559 }%
560 \def\@gobble@tw@#1#2{%

561 \def\tocdepth@restore{%
562 \let\l@section\l@section@saved
563 }%

564 \def\l@part#1#2{\addpenalty{\@secpenalty}%
565 \begin@group
566 \set@tocdim@pagenum{#2}%
567 % \@tempdima 3em %
568 \parindent \z@
569 \rightskip\tocleft@pagenum plus 1fil\relax

```

```

570 \skip@\parfillskip\parfillskip\z@
571 \addvspace{2.25em plus\p@}%
572 \large \bf %
573 \leavevmode\ignorespaces#1\unskip\nobreak\hskip\skip@
574 \hb@xt@\rightskip{\hfil\unhbox\z@}\hskip-\rightskip\hskip\z@skip
575 \par
576 \nobreak %
577 \endgroup
578 }%

```

\l@section Determine which TOC elements are automatically indented.

```

579 \def\tocleft@{\z@}%
580 \def\tocdim@min{5\p@}%
581 \def\l@section{%
582 \l@sections{}{section}% Implicit #3#4
583 }%
584 \def\l@f@section{%
585 \addpenalty{\@secpenalty}%
586 \addvspace{1.0em plus\p@}%
587 \bf
588 }%
589 \def\l@subsection{%
590 \l@sections{section}{subsection}% Implicit #3#4
591 }%
592 \def\l@subsubsection{%
593 \l@sections{subsection}{subsubsection}% Implicit #3#4
594 }%
595 \def\l@paragraph#1#2{%
596 \def\l@subparagraph#1#2{%

```

Activate the auto TOC processing.

```

597 \let\toc@pre\toc@pre@auto
598 \let\toc@post\toc@post@auto

599 \def\listoffigures{\print@toc{lof}}%
600 \def\l@figure{\@dottedtocline{1}{1.5em}{2.3em}}

601 \def\listoftables{\print@toc{lot}}%
602 \let\l@table\l@figure

```

6.4.7 Default column bottom

All AIP journal styles have flush bottoms.

```
603 \@booleanfalse\raggedcolumn@sw
```

6.4.8 Table alignment style

All AIP publications have the same table specification: Scotch rules above and below, centered in column.

```

\tableleft@skip@float
\tabmid@skip@float
\tabright@skip@float
\array@row@pre@float
\array@row@pst@float

```

```
604 \def\tableleft@skip@float{\z@ plus\hsize}%

```

```

605 \def\tabmid@skip@float{\@flushglue}%
606 \def\tabright@skip@float{\z@ plus\hsize}%
607 \def\array@row@pre@float{\hline\hline\noalign{\vskip\doublerulesep}}%
608 \def\array@row@pst@float{\noalign{\vskip\doublerulesep}\hline\hline}%

```

6.4.9 Footnote formatting

We customize the formatting of footnotes for all AIP journals.

```

\@makefntext
609 \def\@makefntext#1{%
610   \def\baselinestretch{1}%
611   \leftskip1em%
612   \parindent1em%
613   \noindent
614   \nobreak\hskip-\leftskip
615   \hb@xt@\leftskip{%
616     \hss\@makefnmark\ %
617   }%
618   #1%
619   \par
620 }%

```

6.4.10 Appendix

```

\appendix
\@hangfrom@appendix 621 \prepdef\appendix{%
\@hangfroms@appendix 622 \par
\@appendixcntformat 623 \let\@hangfrom@section\@hangfrom@appendix
624 %\let\@hangfroms@section\@hangfroms@appendix
625 \let\@sectioncntformat\@appendixcntformat
626 }%
627 \def\@hangfrom@appendix#1#2#3{%
628   #1%
629   \@ifempty{#2}{%
630     #3%
631   }{%
632     #2\@ifempty{#3}{\ : \ #3}%
633   }%
634 }%
635 \def\@hangfroms@appendix#1#2{%
636   #1#2%
637 }%
638 \def\@appendixcntformat#1{\appendixname\ \csname the#1\endcsname}%

```

6.4.11 Bibliography

Customize the REVTeX for the AIP society. this task requires three components: the BibTeX aipnum.bst and aipauth.bst style files, customizing code for natbib, and customizations of the thebibliography environment.

`\@bibstyle` Define the argument of the `\bibliographystyle` command. The user must have installed a `.bst` file of the corresponding name. This file will then be used by `BIBTEX` when compiling the document's `.bbl` file.

The default bibliography style for the AIP journal substyles are `aipnum.bst` and `aipauth.bst`. To generate them, use `custom-bib` version 4.21 or later. Run the `.bst` generator, `makebst.tex`, and accept all defaults, with the following exceptions:

1. ORDERING OF REFERENCES: c: seq-no (references in order of Citation);
2. AUTHOR NAMES: i: nm-init,ed-au (Initials + surname);
3. NUMBER OF AUTHORS: l: max 12, min 12 (there will be three prompts total);
4. TYPEFACE FOR AUTHORS IN LIST OF REFERENCES: u: nmft,nmft-def (User defined author font);
5. FONT FOR FIRST NAMES: u: fnm-def (First names in user defined font);
6. EDITOR NAMES IN INCOLLECTION ETC: a: nmfted (Editors in collection like authors);
7. DATE FORMAT: p: yr-par (Date in parentheses);
8. SUPPRESS MONTH: x: xmth (Date is year only);
9. TITLE OF ARTICLE: i: tit-it (Title italic)
10. ARTICLE TITLE PRESENT: x: jtit-x (No article title);
11. JOURNAL NAME FONT: r: jttl-rm (Journal title normal);
12. TECHNICAL REPORT TITLE: b: trtit-b (Tech. report title like books);
13. JOURNAL VOLUME: b: vol-bf (Volume bold);
14. VOLUME PUNCTUATION: c: volp-com (Volume with comma);
15. PAGE NUMBERS: f: jpg-1 (Only start page number);
16. JOURNAL NAME PUNCTUATION: x: jnm-x (Space after journal);
17. PUBLISHER IN PARENTHESES: d: pub-date (Publisher and date in parentheses);
18. PUBLISHER POSITION: p: pre-pub (Publisher before chapter, pages);
19. ISBN NUMBER: isbn: (Include ISBN for books, booklets)
20. ISSN NUMBER: issn: (Include ISSN for periodicals)
21. EDITOR IN COLLECTIONS: b: edby (Booktitle, edited by ...);

22. PUNCTUATION BETWEEN SECTIONS (BLOCKS): c: blk-com (Comma between blocks);
23. ABBREVIATE WORD 'PAGES': a: pp ('Page' abbreviated);
24. ABBREVIATE WORD 'EDITORS': a: ed ('Editor' abbreviated);
25. OTHER ABBREVIATIONS: a: abr (Abbreviations);
26. ABBREVIATION FOR 'EDITION': a: ednx ('Edition' abbreviated as 'ed');
27. EDITION NUMBERS: n: ord (Numerical editions);
28. STORED JOURNAL NAMES: a: jabr (Abbreviated journal names);
29. FONT OF 'ET AL': i: etal-it (Italic et al);
30. ADDITIONAL REVTeX DATA FIELDS: r: revdata, eprint, url, url-blk (Include REVTeX data fields collaboration, eid, eprint, numpages, url)
31. NEW FONT SELECTION SCHEME: n: nfss (NFSS);
32. ADDITIONAL REVTeX DATA FIELDS: y: revdata (additional data fields);
33. REFERENCE COMPONENT TAGS: y: reference component tags;
34. URL ADDRESS: n: URL as note;

A file `aipnum.dbj` file equivalent to the following should result:

```
%\input docstrip
%\preamble
%-----
%*** REVTeX-compatible aipnum4-1.bst 2009-10-08 ***
%\endpreamble
%\postamble
%End of customized bst file
%\endpostamble
%\keepsilent
%\askforoverwritefalse
%\def\MBopts{\from{merlin.mbs}{%
%  head,\MBopta}
%\from{physjour.mbs}{\MBopta}
%\from{geojour.mbs}{\MBopta}
%\from{photjour.mbs}{\MBopta}
%\from{merlin.mbs}{tail,\MBopta}}
%\def\MBopta{%
%  lang,%: Use language field to switch hyphenation patterns for title
%  pres,pres-bf,%: Presentation, speaker bold face
%  seq-no,%: Citation order (unsorted, like unsrt.bst)
%  vonx,%: Sort without von part (de la Maire after Mahone)
```

```

% nm-init,ed-au, %: Initials + surname (J. F. Smith)
% nmft,nmft-def, %: User defined author font (\bibnamefont)
% fnm-def, %: First names in user defined font (\bibfnamefont)
% nmfted, %: Editors incollection like authors font
% nmand-rm, %: 'And' in normal font (JONES and JAMES)
% lab,lab-def, %: User defined citation font (\citenamefont)
% and-rm, %: Cited 'and' in normal font
% yr-par, %: Date in parentheses as (May 1993)
% date-nil-x, %: If date is empty, then do not produce the surrounding punctuation (parens, brackets)
% tit-qq, %: Title and punctuation in double quotes (''Title,'')
% inproceedings-chapter, %: produce pages after chapter, just as in InBook
% jtit-x, %: Title is ignored
% inproceedings-chapter, %: produce pages after chapter just as in InBook
% article-booktitle, %: format booktitle
% article-series, %: article can has series
% jttl-rm, %: Journal name normal font
% journal-address, %: Include address field (in parentheses) along with journal name
% book-bt, %: Field 'booktitle', or if absent field 'title', is book title
% thesis-title-o, %: Title is optional: no warning issued if empty
% techreport-institution-par, %: format tech report institution like book publisher
% vol-bf, %: Volume bold as {\bf vol}(num)
% vnum-x, %: Journal vol, without number as 34
% volp-com, %: Volume with comma as vol(num), ppp
% jpg-1, %: Only start page number
% book-editor-booktitle, %: Book permits empty author, produces title before editor in this case
% inbook-editor-booktitle, %: Allow using both title/booktitle, both author/editor
% bookaddress, %: Italic booktitle followed by bookaddress in roman
% num-xser, %: Allows number without series and suppresses word "number"
% number-cap, %: Capitalize word 'number' as: "Number 123"
% chapter-cap, %: Capitalize word 'chapter' as: 'Chapter 42'
% series-number, %: Series number as: 'Springer Lecture Notes No. 125'
% numser-booktitle, %: After book title and conference address, and before editors
% ser-vol, %: Series, vol. 23
% ser-rm, %: format series roman , even when used with volume
% volume-cap, %: Capitalize word 'volume', as: 'Volume 7 in Lecture Series'
% ser-ed, %: Series and volume after booktitle and before editors
% jnm-x, %: Space after journal name
% pg-bk,book-chapter-pages, %: As chapter and page: chapter 42, page 345
% pub-date, %: Publisher with address and date in parentheses (Oxford, 1994)
% ay-empty-pub-parens-x, %: eliminate parentheses altogether if nothing inside
% pre-pub, %: Publisher before volume, chapter, pages
% pre-edn, %: Edition before publisher
% pre-pub,pre-edn, %: Edition, publisher, volume, chapter, pages
% isbn, %: Include ISBN for books, booklets, etc.
% issn, %: Include ISSN for periodicals
% doi-link,doi, %: Doi forms a link to the publication, anchored to the volume or title
% edby, %: In booktitle, edited by .. (where .. is names)
% blk-com, %: Comma between blocks
% fin-endbibitem, %: Command at end instead of period
% pp, %: 'Page' abbreviated as p. or pp.

```

```

% ed,%: 'Editor' abbreviated as ed. or eds.
% abr,%: Abbreviations of such words
% ednx,%: 'Edition' abbreviated as 'ed'
% ord,%: Numerical editions as 1st, 2nd, 3rd, etc
% jabr,%: Abbreviated journal names
% etal-it,%: Italic et al
% revdata,eprint,url,url-blk,translation,%: Include REVTeX data fields collaboration, eid, eprint
% SLACcitation,%: Produce SLACcitation field
% numpages-x,%: Do not include numpages field
% url,url-prefix-x,%: URL without prefix (default: 'URL ')
% bibinfo,%: Reference component tags like \bibinfo in the content of \bibitem
% bibfield,%: Element tags like \bibfield in the content of \bibitem
% nfss,%: Use LaTeX commands which may not work with Plain TeX
%,{%
%   }}
%\generate{\file{aipnum4-1.bst}{\MBopts}}
%\endbatchfile
%
```

Between the two files `aipnum.dbj` and `aipauth.dbj`, the differences are limited: `aipnum.dbj` has two lines lacking in `aipauth.dbj`:

```

% seq-no,%: Citation order (unsorted, like unsrt.bst)
% nm-init,ed-au,%: Initials + surname (J. F. Smith)
%
```

thus, the “numbered citation” bibliography is sorted by citation order, and the names are give first initial, then last name.

Likewise, `aipauth.dbj` has one line lacking in `aipnum.dbj`:

```

% nm-rev,%: Surname + comma + initials (Smith, J. F.)
%
```

Thus, the “author-year” bibliography is sorted by author name, and names are given last name first, followed by initials.

We ensure that the journal substyle has the first word in the matter by installing the (default) AIP code later on (see Section 6.25).

`\pre@bibdata` Set up to write endnotes to a .bib file; its data will be incorporated into the bibliography.

```
639 \def\pre@bibdata{\jobname\bibdata@app}%
```

`\bibsection` We define the sectioning command to use when starting the bibliography (we use `\refname`).

```

640 \def\refname{References}%
641 \def\rtx@bibsection{%
642   \@ifx@empty\refname{%
643     \par\vspace{6\p@ plus 6\p@}%
644   }%
```

The following line has been commented out:

```
% \let\@hangfroms@section\@hang@froms
%

645 \expandafter\section\expandafter*\expandafter{\refname}%
646 \@nobreaktrue
647 }%
648 }%

\bibpreamble
  \bibsep 649 \let\bibpreamble\@empty
  \newblock 650 \appdef\setup@hook{%
    651 \bibsep\z@\relax
    652 }%
    653 \def\newblock{\ }%

\bibfont We define the font switch that applies to the body of the bibliography.
654 \appdef\setup@hook{%
655 \def\bibfont{%
656 \preprintsty@sw{}\footnotesize}%
657 \@clubpenalty\clubpenalty
658 \labelsep\z@
659 }%
660 }%
661 \let\place@bibnumber\place@bibnumber@sup
```

6.4.12 Index

```
662 \newenvironment{theindex}{%
663 \columnseprule \z@
664 \columnsep 35\p@
665 \c@secnumdepth-\maxdimen
666 \onecolumngrid@push
667 \section{indexname}%
668 \thispagestyle{plain}%
669 \parindent\z@
670 \parskip\z@ plus.3\p@\relax
671 \let\item\@idxitem
672 \onecolumngrid@pop
673 }{%
674 }%
675 %
676 \def\@idxitem{\par\hangindent 40\p@}
677 %
678 \def\subitem{\par\hangindent 40\p@ \hspace*{20\p@}}
679 %
680 \def\subsubitem{\par\hangindent 40\p@ \hspace*{30\p@}}
681 %
682 \def\indexspace{\par \vskip 10\p@ plus5\p@ minus3\p@\relax}
```

6.4.13 Typesize Processing

The formatting specification for the preprint option is: Times Roman 12 pt, double spacing, with 1-inch margins on letter paper. Paragraphs indented “five spaces”. Display math on standard indent, with equation number flush right in parenthesis, with subequations roman.

That for reprint option is to format similar to the printed journal; with most journals set (approximately analyzed) 10-point, 2-column grid, letter paper.

```
683 \expandafter\def\csname rtx@aip10pt\endcsname{%
684 \let\@currname@class\@currname
685 \def\@currname{aps10pt\substyle@post}%
686 \class@info{Reading file \@currname.\substyle@ext}%
687 \input{\@currname.\substyle@ext}%
688 \let\@currname\@currname@class
689 \class@info{Overriding 10pt}%
690 \aipreprint
691 }%
692 \expandafter\def\csname rtx@aip11pt\endcsname{\csname rtx@aip12pt\endcsname}%
693 \expandafter\def\csname rtx@aip12pt\endcsname{%
694 \let\@currname@class\@currname
695 \def\@currname{aps12pt\substyle@post}%
696 \class@info{Reading file \@currname.\substyle@ext}%
697 \input{\@currname.\substyle@ext}%
698 \let\@currname\@currname@class
699 \class@info{Overriding 12pt}%
700 \aippreprint
701 }%
```

`\today` Procedure `\today` is used in the article class, but not in this document class.

```
702 \def\today{%
703 \number\day\space
704 \ifcase\month
705 \or January\or February\or March\or April\or May\or June%
706 \or July\or August\or September\or October\or November\or December%
707 \fi\space
708 \number\year
709 }%
```

6.5 A. Running Title

User-provided running title `\@shorttitle` to be set.

6.6 B. Equation numbering, figure and table numbering

Equations can be numbered throughout, or by section, with appendix equations prepended by the appendix label. Figures and tables are numbered throughout.

6.7 C. Title

Title page may break above abstract, within author list. Title notes are signified by superior letter followed by right parenthesis.

6.8 D. Author footnote

Set short line above these footnotes.

6.9 E. Author

Class option `superscriptaddress` is standard.

710 `\clo@superscriptaddress`

6.10 F. Affiliations

Set italic.

6.11 G. Received date

6.12 H. Abstract

Single paragraph, no indent.

6.13 J. Lead Paragraph

Set boldface, flush left before main text, single paragraph. Separated from text by a short centered rule.

6.14 K. Headings

Use labels: ROMAN, LETTER, arabic, letter. Set ALLCAPS, boldface; Initial cap, boldface; Initial cap, bold-italic; Initial cap, italic.

Theorem, proof title followed by colon. Follow author.

6.15 L. Text Footnotes

Not permitted; use endnotes.

6.16 M. Citations and Bibliography

Numerical `aip4-2.dtxaipnum.bst`, author-year `aip4-2.dtxaipauth.bst`, and numbered author-year `aip4-2.dtxaipnumauth.bst` are the available choices. Numerical is standard, with all styles permitted in journal classes 3a and 4b.

6.17 N. References

Article Title usage:

Article title required in all journals with "unpublished", "to be published", "in press" and "submitted" refs.

Exceptions:

Journal classes 1a,1b,2,4a:

Article title not allowed in published references, except in the case of "in press" or submitted" (see sample references below).

Journal class 3a:

Article title allowed but not required in author-year references (use must be consistent within a single manuscript).

Journal class 3b:

Article title required in all journal references and report references.

Journal class 4b:

Article title allowed in journal references in author-year mode.

6.18 O. Examples of Numerical References

6.19 P. References in Author-year mode

6.20 Q. Numbered Author-year References

6.21 R. Tables

Placed within text (floated), labeled with Roman numeral.

Table caption placed above table, followed by space, two double lines, space, table column headings, space, single line, table contents, two double lines.

Footnotes labeled with superior lower-case letter, set below table contents.

6.22 S. Figures

Placed within text (floated), labeled with arabic numbers.

Caption set below figure. A citation to be set inline, not superscripted.

6.23 Society defaults

After this society file is read in, we will process the \@journal- and \@pointsize-specific code. Here we define the defaults.

We select **Chaos** as the default journal substyle, because it is the most permissive in terms of bibliography and citation style, and it is formatted in two column in the reprint style.

```
711 \def\@journal@default{cha}%  
712 \def\@pointsize@default{12}%  
713 \@booleanfalse\pagerestrict@sw%
```

6.24 Journal-Specific Code

For AIP journals, we supply code specific to JCP, POP, RSI, JAP, APL, CHA, POF, BMF, RSE, JMP.

6.24.1 jcp

A member of the journal class 1a.

```
714 \def\rtx@aipjcp{%  
715 \typeout{Using journal substyle \@journal.}%  
Journal class 1a uses the (superscript) numerical citation style by default.  
716 \@booleanfalse\authoryear@sw  
End of jcp code.  
717 }%
```

6.24.2 pop

A member of the journal class 1a.

```
718 \def\rtx@aippop{%  
719 \typeout{Using journal substyle \@journal.}%  
Journal class 1a uses the (superscript) numerical citation style by default.  
720 \@booleanfalse\authoryear@sw  
End of pop code.  
721 }%
```

6.24.3 rsi

A member of the journal class 1a.

```
722 \def\rtx@aiprsi{%  
723 \typeout{Using journal substyle \@journal.}%  
Journal class 1a uses the (superscript) numerical citation style by default.  
724 \@booleanfalse\authoryear@sw  
End of rsi code.  
725 }%
```

6.24.4 jap

Sole member of the journal class 1b.

No running title.

```
726 \def\rtx@aipjap{%  
727 \typeout{Using journal substyle \@journal.}%  
Journal class 1b uses the (superscript) numerical citation style by default.  
728 \@booleanfalse\authoryear@sw  
729 \let\@runningtitle\@empty  
End of jap code.  
730 }%
```


6.24.5 apl

Sole member of the journal class 2.

No running title.

```
731 \def\rtx@aipapl{%  
732 \typeout{Using journal substyle \@journal.}%
```

Journal class 2 uses the (superscript) numerical citation style by default.

```
733 \@booleanfalse\authoryear@sw  
734 \let\@runningtitle\@empty
```

End of apl code.

```
735 }%
```

6.24.6 apm

```
736 \def\rtx@aipapm{%  
737 \typeout{Using journal substyle \@journal.}%  
738 \@booleanfalse\authoryear@sw  
739 \let\@runningtitle\@empty  
740 }%
```

6.24.7 cha

Sole member of the journal class 3a.

```
741 \def\rtx@aipcha{%  
742 \typeout{Using journal substyle \@journal.}%
```

Article titles are allowed.

```
743 \@booleanfalse\aip@jtitx@sw
```

End of cha code.

```
744 }%
```

6.24.8 pof

Sole member of the journal class 3b.

```
745 \def\rtx@aippof{%  
746 \typeout{Using journal substyle \@journal.}%
```

Journal class 3b uses the (superscript) numerical citation style by default. Article titles are required, so we include them if available, but if absent, we can do no more than make a warning in the .blg.

```
747 \@booleanfalse\authoryear@sw  
748 \@booleanfalse\aip@jtitx@sw
```

End of pof code.

```
749 }%
```

6.24.9 bmf

A member of the journal class 4a, the Biomicrofluidics journal is single column.

```
750 \def\rtx@aipbmf{%  
751 \typeout{Using journal substyle \@journal.}%
```

Journal class 4a uses the (superscript) numerical citation style by default. Journal is formatted in a single column.

```
752 \@booleanfalse\authoryear@sw
```

End of bmf code.

```
753 }%
```

6.24.10 sd

```
754 \def\rtx@aipsd{%  
755 \typeout{Using journal substyle \@journal.}%  
756 \@booleanfalse\authoryear@sw  
757 }%
```

6.24.11 cp

```
758 \def\rtx@aipcp{%  
759 \typeout{Using journal substyle \@journal.}%  
760 \@booleanfalse\authoryear@sw%  
761 % \@booleantrue\authoryear@sw  
762 \@booleanfalse\twocolumn@sw%  
763 % \@booleantrue\longbibliography@sw%  
764 % \@booleanfalse\aip@jtitx@sw  
765 }%
```

6.24.12 jor

```
766 \def\rtx@aipjor{%  
767 \typeout{Using journal substyle \@journal.}%  
768 \@booleantrue\authoryear@sw%  
769 \@booleantrue\twoside@sw\@mparswitchfalse%  
770 }%
```

6.24.13 rse

A member of the journal class 4a.

```
771 \def\rtx@aiprse{%  
772 \typeout{Using journal substyle \@journal.}%
```

Journal class 4a uses the (superscript) numerical citation style by default.

```
773 \@booleanfalse\authoryear@sw
```

End of rse code.

```
774 }%
```

6.24.14 jmp

Sole member of the journal class 4b, Journal of Mathematical Physics is single column. For an example of `itemize`, see JMP_122901_1 (48).

```
775 \def\rtx@aipjmp{%
776 \typeout{Using journal substyle \@journal.}%
```

Article titles are allowed. Journal is formatted in a single column.

```
777 \@booleanfalse\aip@jtitx@sw
778 \@booleanfalse\twocolumn@sw
779 \@booleantrue\onecolumn@sw
```

End of jmp code.

```
780 }%
```

6.24.15 adv

```
781 \def\rtx@aipadv{%
782 \typeout{Using journal substyle \@journal.}%
783 \@booleanfalse\authoryear@sw
784 \let\@runningtitle\@empty
785 }%
```

6.25 Establish AIP Defaults

`\footinbib@sw` All AIP journals invoke the `footinbib` option.

```
786 \@booleantrue\footinbib@sw
```

`\place@bibnumber` We install code that will govern the style in which `\cite` commands are formatted, select the presentation for `\bibitems` and control the `BIBTEX` processing.

`\@bibstyle` Note that a journal substyle may override these settings. Likewise, document preamble may itself invoke `\bibpunct` or `\bibliographystyle`, thereby overriding these settings and those of the journal substyle.

`\bibpunct` The numbered citations of `aipnum` and `aipauthnum` are compatible with `footinbib` and the compression and coalescing features of `natbib`, while `aipauth`'s author-year citations are not. Therefore, we de-select such options if we are selecting author-year citations.

The numbered citations of `aipnum` and `aipauthnum` are compatible with `footinbib` and the compression and coalescing features of `natbib`, while `aipauth`'s author-year citations are not. Therefore, we de-select such options if we are selecting author-year citations.

Note on `natbib` presets: `aipnum` and `aipauthnum` uses the Chicago `\bibpunct` style; while `aipauth` uses that of Nature.

Note on `\NAT@mcite`: if not using numerical citations, we set `\NAT@mcite` to a lower value, to turn off the `mcite` semantics of `natbib`.

```
787 \let\old@place@bibnumber\place@bibnumber
788 \let\place@bibnumber\place@bibnumber@sup
789 \appdef\setup@hook{%
790 \authoryear@sw{%
791 \aip@jtitx@sw{%
792 \def\@bibstyle{aipauth\substyle@post}}%
793 }{%
794 \def\@bibstyle{aipauth\substyle@post}}%
795 }%
```

```

796 \authornum@sw{%
797 \bibpunct{}{}{,}{s}{}{\textsuperscript{,}}%
798 \let\onlinecite\rev@citealpnum
799 }{%
800 \bibhang10\p@
801 \bibpunct{(%}
802         }{%(
803         )}{; }{a}{,}{f,}%
804 \@booleanfalse\footinbib@sw
805 \let\NAT@mcite\@ne
806 \let\NAT@sort\z@
807 \def\NAT@cmprs{\z@}%
808 \let\NAT@def@citea\rtx@def@citea
809 \let\NAT@def@citea@close\rtx@def@citea@close
810 }%
811 }{%
812 \aip@jtitx@sw{%
813 \def\@bibstyle{aipnum\substyle@post}%
814 }{%
815 \def\@bibstyle{aipnum\substyle@post}%
816 }%
817 \bibpunct{}{}{,}{s}{}{\textsuperscript{,}}%
818 \let\onlinecite\rev@citealpnum
819 }%
820 }%
821 \def\make@footnote@endnote{%
822 \footinbib@sw{%
823 \authoryear@sw{\authornum@sw{\false@sw}{\true@sw}}{\false@sw}%
824 }{}{%
825 \ltx@footnote@push
826 \def\thempfn{Note\thefootnote}%
827 \let\ltx@footmark\rev@citemark
828 \let\ltx@foottext\rev@endtext
829 \appdef\class@enddocumenthook{\auto@bib}%
830 \let\printendnotes\relax
831 }%
832 }{}%
833 }%

```

\aipreprint We want to override aip4-2.dtxaps10pt.rtx.

```

834 \def\aipreprint{%
835 }%

```

\aipreprint We want to override aip4-2.dtxaps12pt.rtx.

```

836 \def\aipreprint{%
837 }%

```

6.25.1 Fixing the bug for single author/affiliation

In case of single author/affiliation no need to produce the affiliation number after the author name.

```

838 %%
839 \xdef\t@talAU{0}% TeXSupport
840 \def\frontmatter@author@produce@script{%
841   \begingroup
842     \let\@author@present\@author@present@script
843     \frontmatterverbose@sw{\typeout{\string\frontmatter@author@produce@script:}\say\@AAC@list\s
844     \let\AU@temp\@empty
845     \@tempcnta\z@
846     \let\AF@opr \@gobble
847     \def\AU@opr{\@author@count\@tempcnta}%
848     \def\CO@opr{\@collaboration@count\AU@temp\@tempcnta}%
849     \@AAC@list%
850     \xdef\t@talAU{\the\@tempcnta}% TeXSupport
851     \expandafter\CO@opr\@author@cleared
852     \begingroup
853       \frontmatter@authorformat
854       \let\AF@opr \@affilID@def
855       \let\AU@opr \@author@present
856       \def\CO@opr{\@collaboration@present\AU@temp}%
857       \set@listcomma@list\AU@temp
858       \@AAC@list
859       \unskip\unskip
860       \par
861     \endgroup
862     \begingroup
863       \frontmatter@above@affiliation@script
864       \let\AFF@opr \@affil@script
865       \@AFF@list
866       \frontmatter@footnote@produce
867       \par
868     \endgroup
869   \endgroup
870 }%
871 \def\doauthor#1#2#3{% TeXSupport
872   \ignorespaces#1\unskip\@listcomma
873   \begingroup
874     \ifnum\t@talAU=1\else\ifnum\c@affil=\@ne\relax\else#3\fi\fi% TeXSupport
875     \if@empty{#2}{\endgroup{}}{\endgroup{\ifnum\t@talAU=1\else\ifnum\c@affil=\@ne\relax\else\c
876     \space \@listand
877   }%
878   %%

```

6.25.2 Page restriction for APL (currently deactivated)

This macro was installed to calculate page-length for APL articles. Currently this option is deactivated.

```

879 %% XXXXXXXXXXXXXXXXXXXXXXXXXXXX CURRENTLY DEACTIVATED XXXXXXXXXXXXXXXXXXXXXXXXXXXX
880 %% To activate, please add "\@booleantrue\pagerrestrict@sw" in the
881 %% respective journal option
882 %% XXXXXXXXXXXXXXXXXXXXXXXXXXXX
883 %% Appended by Ms. Sehar Tahir (Aptara) for American Institute of Physics.
884 %% To impose page restrictions for APL journal at MSP stage.
885 %%
886 %% HISTORY
887 %% Revised page restriction to 4 pages: 05/10/2011
888 %% Tweaked the page over length message: 31/10/2011
889 \begingroup%
890   \catcode'P=12%
891   \catcode'T=12%
892   \lowercase{%
893     \def\x{\def\local@rem@pt##1.##2PT{##1.##2}}}%
894   \expandafter\endgroup\x%
895 \def\local@strip@pt{\expandafter\local@rem@pt\the}%
896 %%
897 \DeclareOption{no-pagerrestrict}{%
898   \@booleanfalse\pagerrestrict@sw
899 }%
900 \appdef\rtx@require@packages{%
901 \pagerrestrict@sw% For imposing page restrictions
902   \typeout{AIP Info: Appending Manuscript Pages caculations, 2011/05/30}%
903   % Default values
904   \def\page@allowed{4}% APL Article size limit
905   \def\text@ht@allowed{5324pt}% APL Total text height for allowed 4 pages
906   \def\page@calc@count{0}% APL Article size limit
907   % Message to authors
908   \def\msg@text{According to our initial programmatic calculations, your article may exceed APL
909   \def\msg@runningtitle{% Message definition
910 \preprintsty@sw{%
911   \@tempdimc\textwidth\advance\@tempdimc-11pt%
912   \vtop{\vspace*{-3pc}\fboxsep0pt\fboxrule.5pt\fbox{\fboxsep5pt\colorbox{grayten}{%
913     \vtop{\hsize\@tempdimc{\reset@font\fontsize{9}{11}\def\baselinestretch{1}\leftskip0pt\righs
914     }{%
915     \@tempdimc\textwidth\advance\@tempdimc-7pt%
916     \vtop{\vspace*{-2.5pc}\fboxsep0pt\fboxrule.5pt\fbox{\fboxsep3pt\colorbox{grayten}{%
917     \vtop{\hsize\@tempdimc{\reset@font\fontsize{8}{10}\def\baselinestretch{1}\leftskip0pt\righs
918     }%
919     %
920     \RequirePackage{graphicx}%
921     \RequirePackage{color}%
922     \definecolor{grayten}{gray}{.80}%
923     %
924     % Taken from refcount.sty

```

```

925 \def\setrefcountdefault#1{\def\rc@default{#1}}%
926 \setrefcountdefault{0}%
927 %
928 \def\rc@cartwo#1#2#3\@nil{#2}%
929 \newcommand*{\rev@getpagerefnumber}[1]{%
930 \expandafter\ifx\csname r@#1\endcsname\relax
931 \rc@default
932 \else
933 \expandafter\expandafter\expandafter\rc@cartwo
934 \csname r@#1\endcsname\rc@default\rc@default\@nil
935 \fi
936 }
937 \newcommand*{\rev@getrefnumber}[1]{%
938 \expandafter\ifx\csname r@#1\endcsname\relax
939 \rc@default
940 \else
941 \expandafter\expandafter\expandafter\@car
942 \csname r@#1\endcsname\@nil
943 \fi
944 }
945 % Count determined from \label{...}
946 \newcommand\calc@run@count[2][0]{%
947 \ifundefined{r@#2}{\ifnum#1=z@\@tempcnta\c@page\advance\@tempcnta\m@ne\else\@tempcnta\z@\fi
948 {\@tempcnta\rev@getpagerefnumber{#2}\relax}}%
949 %
950 % Taken from everypage.sty
951 \newif\iffloats@end\global\floats@endfalse
952 \newif\ifextra@rule\global\extra@rulefalse
953 %
954 \newcommand{\sc@everypage@hook}{}
955 \newcommand{\sc@thispage@hook}{}
956 \newcommand*{\AddEverypageHook}[1]{%
957 \g@addto@macro\sc@everypage@hook{#1}}
958 \newcommand*{\AddThispageHook}[1]{%
959 \g@addto@macro\sc@thispage@hook{#1}}
960 \newcommand*{\sc@ep@init}{%
961 \let\sc@op@saved\@outputpage
962 \def\@outputpage{%
963 \sc@op@preamble
964 \sc@op@saved
965 \sc@op@postamble}}
966 \newcommand*{\sc@op@preamble}{%
967 \let\sc@begindvi\@begindvi
968 \def\@begindvi{%
969 \sc@everypage@hook
970 \sc@thispage@hook
971 \gdef\sc@thispage@hook{}
972 \sc@begindvi}}
973 \newcommand*{\sc@op@postamble}{%
974 \let\@begindvi\sc@begindvi}

```

```

975 \AtBeginDocument{\sc@ep@init}
976 % Taken from draftwatermark.sty
977 \newcommand\sc@colortext[1]{%
978 \setlength{\@tempdimb}{0pt}%
979 \setlength{\@tempdimc}{-\paperheight}%
980 \put(\strip@pt\@tempdimb,\strip@pt\@tempdimc){%
981 \textcolor{red}{\rule{30pt}{#1}}}
982 }}
983 % Calculating shift in red side-bar according to pages
984 \def\page@mark@shift{%
985 \@ifundefined{page@height\romannumeral\the\c@page}{}%{
986 \@tempdimc\c@page\page@height\romannumeral\the\c@page\endcsname\relax%
987 \ifdim\@tempdimc>\c@page\page@mark\romannumeral\the\c@page\endcsname\relax%
988 \@tempdimb\textheight\advance\@tempdimb-\c@page\page@height\romannumeral\the\c@page\endcsname\relax%
989 \else%
990 \@tempdimb\textheight\advance\@tempdimb-\c@page\page@mark\romannumeral\the\c@page\endcsname\relax%
991 \fi%
992 \advance\@tempdima\@tempdimb}}%
993 \newcommand\sc@wm@print[1]{\preprintsty@sw{%
994 \@tempdima\paperheight\advance\@tempdima-\textheight%
995 \divide\@tempdima by 2\advance\@tempdima-7pt\advance\@tempdima1in%
996 \floats@sw%
997 {\iffloats@end%
998 \@ifundefined{r@LastBibItem}{}%{
999 {\ifnum\c@page<\rev@getpagerefnumber{LastBibItem}\relax%
1000 \else%
1001 \page@mark@shift
1002 \fi}%
1003 \else%
1004 \@ifundefined{r@LastPage}{}%{
1005 {\ifnum\c@page=\rev@getpagerefnumber{LastPage}\relax%
1006 \page@mark@shift
1007 \fi}%
1008 \fi}%
1009 {\@ifundefined{r@EndText}{}%{
1010 {\ifnum\c@page<\rev@getpagerefnumber{EndText}\relax%
1011 \else%
1012 \page@mark@shift
1013 \fi}}}%
1014 {\@tempdima\paperheight\advance\@tempdima-\textheight%
1015 \divide\@tempdima by 2\advance\@tempdima9pt\advance\@tempdima1in}%
1016 \setbox\@tempboxa\vbox to \z@{%
1017 \vskip-\@tempdima \moveleft 1in \vbox{%
1018 \hbox to \z@{%
1019 #1\hss}}\vss}
1020 \dp\@tempboxa\z@
1021 \box\@tempboxa}%
1022 % Printing the red side-bar
1023 \AddEveryPageHook{\def\special@paper{\the\paperwidth,\the\paperheight}\special{papersize=\the\paperwidth,\the\paperheight}}
1024 \preprintsty@sw% Preprint

```



```

1025 \@ifundefined{page@mark\romannumeral\the\c@page}{\%
1026 \def\tempa{\csname page@mark\romannumeral\the\c@page\endcsname}%
1027 \sc@wm@print{\sc@colortext{\tempa\relax}}%
1028 %
1029 \floats@sw{%
1030 \iffloats@end\calc@run@count[1]{LastBibItem}\else\calc@run@count[1]{LastPage}\fi%
1031 }\{ \ifextra@rule\calc@run@count[1]{LastPage}\else\calc@run@count[1]{EndText}\fi}%
1032 \ifnum\c@page=\@tempcnta%
1033 \ifdim\page@calc@count pt>\page@allowed pt\relax%
1034 \def\@oddhead{\msg@runningtitle}%
1035 \def\@evenhead{\msg@runningtitle}%
1036 \fi%
1037 \fi}}{\% Reprint
1038 \ifnum\c@page>\page@allowed%
1039 \sc@wm@print{\sc@colortext{\textheight}}%
1040 \calc@run@count[1]{LastPage}%
1041 \ifnum\c@page=\@tempcnta%
1042 \def\@oddhead{\msg@runningtitle}%
1043 \def\@evenhead{\msg@runningtitle}%
1044 \fi%
1045 \fi%
1046 }}%
1047 %
1048 % Print pages = 2*[(MSP Title portion height)/1.98] + (MSP Text height)/1.32 + (MSP Float hei
1049 %
1050 %
1051 \@booleantrue\tally@box@size@sw % Activated to get hold of various dimensions
1052 %
1053 \newif\ifwrite@title\global\write@titletrue%
1054 %
1055 \newdimen\val@calc@dim% dimen used to translate MSP height to TSP height
1056 \newdimen\make@title@dim% dimen storing height of maketitle portion
1057 \newdimen\tsp@floatheight% dimen storing extra height for large floats
1058 \newdimen\curr@figbox@ht% dimen storing current figure box height
1059 \newdimen\curr@floatht%
1060 \newdimen\curr@floatwidth%
1061 \newdimen\curr@tot@float@ht%
1062 \newdimen\curr@page@ht% dimen storing current page height
1063 %
1064 \newsavebox{\figbox}%
1065 %
1066 \def\name@fig{figure}%
1067 \def\same@fig{none}%
1068 \def\in@flt{none}%
1069 \def\max@pg@ht{0}%
1070 \def\ptm{ptm}%
1071 %
1072 \gdef\@restrict@error#1#2{%
1073 \GenericError{%
1074 \space\space\space\@spaces\@spaces\@spaces

```

```

1075 }{%
1076 LaTeX Error: #1%
1077 }{%
1078 A red side-bar will appear along the extra text on the PDF pages. Press 'Enter' to continue.%
1079 }{#2}%
1080 }%
1081 \preprintsty@sw{% For Preprint
1082 % Adding Float height to the height of each page
1083 \def\add@flt@pght{%
1084 \@ifundefined{flt@on@page\romannumeral\the\c@page}{}%
1085 {\@tempdimc\curr@page@ht\advance\@tempdimc\csname flt@on@page\romannumeral\the\c@page\endcsname
1086 \ifdim\@tempdimc>\textheight%
1087 \global\curr@page@ht\textheight%
1088 \else%
1089 \global\advance\curr@page@ht\csname flt@on@page\romannumeral\the\c@page\endcsname\relax%
1090 \fi}%
1091 \expandafter\xdef\csname page@height\romannumeral\the\c@page\endcsname{\the\curr@page@ht}}
1092 % Storing height of each page
1093 \appdef\@outputpage@head{%
1094 \floats@sw{%
1095 \iffloats@end%
1096 \ifundefined{r@LastBibHt}%
1097 {\add@flt@pght}
1098 {\ifnum\c@page=\rev@getpagerefnumber{LastBibHt}\relax%
1099 \@tempdima\rev@getrefnumber{LastBibHt}\relax%
1100 \expandafter\xdef\csname page@height\romannumeral\the\c@page\endcsname{\the\@tempdima}}
1101 \else%
1102 \add@flt@pght%
1103 \fi}%
1104 \else%
1105 \add@flt@pght%
1106 \fi%
1107 }{%
1108 \@ifundefined{r@EndText}%
1109 {\expandafter\xdef\csname page@height\romannumeral\the\c@page\endcsname{\the\curr@page@ht}
1110 }{\ifnum\c@page=\rev@getpagerefnumber{EndText}\relax%
1111 \@tempdima\rev@getrefnumber{EndText}\relax%
1112 \expandafter\xdef\csname page@height\romannumeral\the\c@page\endcsname{\the\@tempdima}}
1113 \else%
1114 \expandafter\xdef\csname page@height\romannumeral\the\c@page\endcsname{\the\curr@page@ht}
1115 \fi}%
1116 }%
1117 \global\curr@page@ht\z@%
1118 }%
1119 % Calculating and adding Maketitle portion size (ratio=1.98)
1120 % Redefined
1121 \def\show@box@size#1#2{%
1122 % \show@box@size@sw{%
1123 \begingroup
1124 \setbox\z@\vbox{\unvcopy#2\hrule}%

```

```

1125 \show@box@size@sw{%
1126 \class@info{Show box size: #1^^J%
1127 (\the\ht\z@\space X \the\wd\z@)
1128 \the\c@page\space\space\the\pagegrid@cur\space\the\pagegrid@col
1129 }}{%
1130 \global\advance\curr@page@ht\ht\z@%
1131 \ifwrite@title%
1132 \@ifundefined{r@FirstPage}{\@tempcnta\the\c@page}%
1133 {\@tempcnta\rev@getpagerefnnumber{FirstPage}\relax}%
1134 \ifnum\c@page=\@tempcnta
1135 \global\make@title@dim\ht\z@
1136 \@tempdima\make@title@dim
1137 \divide\@tempdima by 198\relax
1138 \multiply\@tempdima by 100\relax
1139 \global\advance\val@calc@dim\@tempdima%
1140 \global\advance\val@calc@dim\@tempdima%
1141 \global\write@titlefalse%
1142 \fi%
1143 \fi%
1144 \endgroup
1145 % }{%
1146 }%
1147 % Calculating and adding Float portion size
1148 % Redefined
1149 \let\oldincludegraphics\includegraphics%
1150 \def\includegraphics{%
1151 \@ifnextchar[%]
1152 {\two@includegraphics}{\one@includegraphics}}%
1153 \def\one@includegraphics#1{\savebox{\figbox}{\oldincludegraphics{#1}}\oldincludegraphics{#1}%
1154 \ifx\in@flt\name@fig%
1155 \ifx\same@fig\name@fig%
1156 \@tempdimc\curr@floatwidth\advance\@tempdimc\wd\figbox%
1157 \ifdim\@tempdimc>\textwidth%
1158 \ifdim\wd\figbox>\curr@floatwidth%
1159 \global\curr@floatwidth\wd\figbox%
1160 \fi%
1161 \global\advance\curr@figbox@ht\ht\figbox%
1162 \global\advance\curr@figbox@ht\dp\figbox%
1163 \else%
1164 \ifdim\ht\figbox>\curr@figbox@ht%
1165 \global\curr@figbox@ht\ht\figbox%
1166 \global\advance\curr@figbox@ht\dp\figbox%
1167 \fi%
1168 \global\advance\curr@floatwidth\wd\figbox%
1169 \fi%
1170 \else%
1171 \global\curr@floatwidth\wd\figbox%
1172 \global\curr@figbox@ht\ht\figbox%
1173 \global\advance\curr@figbox@ht\dp\figbox%
1174 \gdef\same@fig{figure}%

```

```

1175 \fi%
1176 \fi}%
1177 \def\two@includegraphics[#1]#2{\savebox{\figbox}{\oldincludegraphics[#1]{#2}}\oldincludegraph
1178 \ifx\in@flt\name@fig%
1179 \ifx\same@fig\name@fig%
1180 \@tempdimc\curr@floatwidth\advance\@tempdimc\wd\figbox%
1181 \ifdim\@tempdimc>\textwidth%
1182 \ifdim\wd\figbox>\curr@floatwidth%
1183 \global\curr@floatwidth\wd\figbox%
1184 \fi%
1185 \global\advance\curr@figbox@ht\ht\figbox%
1186 \global\advance\curr@figbox@ht\dp\figbox%
1187 \else%
1188 \ifdim\ht\figbox>\curr@figbox@ht%
1189 \global\curr@figbox@ht\ht\figbox%
1190 \global\advance\curr@figbox@ht\dp\figbox%
1191 \fi%
1192 \global\advance\curr@floatwidth\wd\figbox%
1193 \fi%
1194 \else%
1195 \global\curr@floatwidth\wd\figbox%
1196 \global\curr@figbox@ht\ht\figbox%
1197 \global\advance\curr@figbox@ht\dp\figbox%
1198 \gdef\same@fig{figure}%
1199 \fi%
1200 \fi}%
1201 % Redefined
1202 \def\@xfloat#1[#2]{\def\temp{#1}\ifx\temp\name@fig\gdef\in@flt{figure}\fi%
1203 \@xfloat@prep
1204 \@nameuse{fp@proc#2}%
1205 \floats@sw{\@xfloat@LaTeX{#1}[#2]}\@xfloat@anchored{#1}[]}%
1206 }%
1207 % Autolabelling of floats to get their exact page placement
1208 \appdef\@floatboxreset{%
1209 \ifundefined{float\romannumeral\the\c@page}%
1210 {\expandafter\xdef\csname float\romannumeral\the\c@page\endcsname{\@ne}%
1211 \xdef\flt@pg@label{float\romannumeral\the\c@page-\romannumeral\@ne}}%
1212 {\@tempcnta=\csname float\romannumeral\the\c@page\endcsname\advance\@tempcnta\@ne%
1213 \expandafter\xdef\csname float\romannumeral\the\c@page\endcsname{\the\@tempcnta}%
1214 \xdef\flt@pg@label{float\romannumeral\the\c@page-\romannumeral\the\@tempcnta}}%
1215 \label{\flt@pg@label}}%
1216 % Defining a pagewise fix for TSP height wherever a float occurs
1217 \def\tsp@float@fix{%
1218 \ifundefined{r@\flt@pg@label}{}%
1219 {\@tempcnta=\rev@getpagerefnumber{\flt@pg@label}\relax%
1220 \ifundefined{flt@ht@fix\romannumeral\the\@tempcnta}%
1221 {\expandafter\xdef\csname flt@ht@fix\romannumeral\the\@tempcnta\endcsname{\the\@tempdimc}}%
1222 {\advance\@tempdimc\csname flt@ht@fix\romannumeral\the\@tempcnta\endcsname\relax%
1223 \expandafter\xdef\csname flt@ht@fix\romannumeral\the\@tempcnta\endcsname{\the\@tempdimc}}%
1224 %

```

```

1225 \floats@sw{%
1226 % Normal Floats
1227 \appdef\check@currbox@count{%
1228 \@ifnum{\count\@currbox>\z@}{%
1229 % Float height calculation to be added in page height
1230 \@tempdimb\ht\@currbox\advance\@tempdimb\dp\@currbox%
1231 \@tempcnta=\rev@getpagerefnumber{\flt@pg@label}\relax%
1232 \@ifundefined{flt@on@page\romannumeral\the\@tempcnta}%
1233 {\expandafter\xdef\csname flt@on@page\romannumeral\the\@tempcnta\endcsname{\the\@tempdimb}}%
1234 {\advance\@tempdimb\csname flt@on@page\romannumeral\the\@tempcnta\endcsname\relax%
1235 \expandafter\xdef\csname flt@on@page\romannumeral\the\@tempcnta\endcsname{\the\@tempdimb}}%
1236 %
1237 \ifx\@capttype\name@fig%
1238 \ifdim\curr@floatwidth>20.5pc%
1239 \ifdim\curr@floatwidth>30pc% Everything added 2 times for calculating column width
1240 \@tempdimc\ht\@currbox\advance\@tempdimc\dp\@currbox
1241 \global\advance\tsp@floatheight\@tempdimc%
1242 % Calculating equivalent TSP height of each figure
1243 \tsp@float@fix
1244 \else%
1245 \@tempdima\ht\@currbox\advance\@tempdima\dp\@currbox%
1246 \advance\@tempdima-\curr@figbox@ht%
1247 \global\advance\curr@tot@float@ht-\@tempdima%
1248 %
1249 \global\advance\tsp@floatheight\ht\@currbox%
1250 \global\advance\tsp@floatheight\dp\@currbox%
1251 \global\advance\tsp@floatheight-\@tempdima%
1252 % Calculating equivalent TSP height of each figure
1253 \@tempdimc\curr@figbox@ht%
1254 \tsp@float@fix
1255 \fi%
1256 \fi%
1257 \else%
1258 \@tempdimc\ht\@currbox\advance\@tempdimc\dp\@currbox
1259 \global\advance\tsp@floatheight\@tempdimc%
1260 % Calculating equivalent TSP height of each figure
1261 \tsp@float@fix
1262 \fi%
1263 \gdef\in@flt{none}\gdef\same@fig{none}%
1264 }{}%
1265 \def\total@float#1{%
1266 \expandafter\let
1267 \expandafter\@tempa
1268 \csname fbox@\csname ftype@#1\endcsname\endcsname
1269 \@ifnotrelax\@tempa{%
1270 \@ifhbox\@tempa{%
1271 \@tempdima\the\ht\@tempa\divide\@tempdima\@twopowertwo\@tempcnta\@tempdima
1272 \@tempdimb\the\dp\@tempa\divide\@tempdimb\@twopowertwo\@tempcntb\@tempdimb
1273 \class@info{Total #1: Column(\the\@tempcnta pt), Page(\the\@tempcntb pt)}%
1274 \global\advance\curr@tot@float@ht\@tempcnta pt\global\advance\curr@tot@float@ht\@tempcntb

```

```

1275     }{}%
1276     }{}%
1277     }%
1278     }{
1279     % End of document Floats
1280     \def\strt@flt#1#2#3{\edef\flt@page{#1}\edef\flt@pgtot{#2}\edef\flt@pggoal{#3}}
1281     % Redefined
1282     \let\old@xfloat@anchored\@xfloat@anchored
1283     \def\@xfloat@anchored#1[#2]{\old@xfloat@anchored#1[#2]%
1284     \floatp@sw}{\strt@flt{\the\c@page}{\the\pagetotal}{\the\pagegoal}\curr@floatht\pagetotal}}%
1285     \appdef\end@float@anchored{%
1286     \floatp@sw{%
1287     \curr@floatht\pagetotal%
1288     \ifx\@capttype\name@fig%
1289         \ifdim\curr@floatwidth>20.5pc%
1290             \ifdim\curr@floatwidth>30pc%
1291                 \global\advance\tsp@floatheight\curr@floatht%
1292                 % Calculating equivalent TSP height of each figure
1293                 \@tempdimc\curr@floatht%
1294                 \tsp@float@fix
1295             \else%
1296                 \@tempdima\curr@floatht\advance\@tempdima-\curr@figbox@ht%
1297                 \global\advance\curr@tot@float@ht-\@tempdima%
1298                 %
1299                 \global\advance\tsp@floatheight\curr@floatht%
1300                 \global\advance\tsp@floatheight-\@tempdima%
1301                 % Calculating equivalent TSP height of each figure
1302                 \@tempdimc\curr@figbox@ht%
1303                 \tsp@float@fix
1304             \fi%
1305         \fi%
1306     \else%
1307         \global\advance\tsp@floatheight\curr@floatht%
1308         % Calculating equivalent TSP height of each figure
1309         \@tempdimc\curr@floatht%
1310         \tsp@float@fix
1311     \fi%
1312     }{%
1313     \ifnum\c@page=\flt@page%
1314         \@tempdima\pagetotal\advance\@tempdima-\curr@floatht%
1315         \global\curr@floatht\@tempdima%
1316         \ifx\@capttype\name@fig%
1317             \ifdim\curr@floatwidth>20.5pc%
1318                 \ifdim\curr@floatwidth>30pc%
1319                     \global\advance\tsp@floatheight\curr@floatht%
1320                     % Calculating equivalent TSP height of each figure
1321                     \@tempdimc\curr@floatht%
1322                     \tsp@float@fix
1323                 \else%
1324                     \@tempdimb\curr@floatht\advance\@tempdimb-\curr@figbox@ht%

```

```

1325      \global\advance\curr@tot@float@ht-\@tempdimb%
1326      %
1327      \global\advance\tsp@floatheight\curr@floatht%
1328      \global\advance\tsp@floatheight-\@tempdimb%
1329      % Calculating equivalent TSP height of each figure
1330      \@tempdimc\curr@figbox@ht%
1331      \tsp@float@fix
1332 \fi%
1333 \fi%
1334 \else%
1335      \global\advance\tsp@floatheight\curr@floatht%
1336      % Calculating equivalent TSP height of each figure
1337      \@tempdimc\curr@floatht%
1338      \tsp@float@fix
1339      \fi%
1340 \else%
1341      \ifx\@capttype\name@fig%
1342      \@tempdima\flt@pggoal\relax\advance\@tempdima-\flt@pgtot\relax
1343      \ifdim\pagetotal>\@tempdima
1344      \global\curr@floatht\@tempdima%
1345      \else%
1346      \global\curr@floatht\pagetotal%
1347      \fi%
1348      \else%
1349      \@tempdima\flt@pggoal\relax\advance\@tempdima-\flt@pgtot\relax
1350      \advance\@tempdima\pagetotal%
1351      \global\curr@floatht\@tempdima%
1352      \fi%
1353      \@tempcnta\c@page\advance\@tempcnta-\flt@page\relax%
1354      \ifnum\@tempcnta>\z@%
1355      \advance\@tempcnta\m@ne%
1356      \@whilenum\@tempcnta>\z@\do
1357      {\global\advance\curr@floatht\pagegoal%
1358      \advance\@tempcnta\m@ne}
1359      \fi%
1360      \ifx\@capttype\name@fig%
1361      \ifdim\curr@floatwidth>20.5pc%
1362      \global\advance\tsp@floatheight\curr@floatht%
1363      % Calculating equivalent TSP height of each figure
1364      \@tempdimc\curr@floatht%
1365      \tsp@float@fix%
1366      \fi%
1367      \else%
1368      \global\advance\tsp@floatheight\curr@floatht%
1369      % Calculating equivalent TSP height of each figure
1370      \@tempdimc\curr@floatht%
1371      \tsp@float@fix%
1372      \fi%
1373 \fi%
1374 }%

```

```

1375 \global\advance\curr@tot@float@ht\curr@floatht%
1376 \gdef\in@flt{none}\gdef\same@fig{none}}%
1377 }% floats
1378 % Calculating and adding Text portion size
1379 \def\no@dim@exceed{% TSP dimen should not exceed maxdimen
1380 \ifx\f@family\ptm%
1381 \@tempdimc13002.380952pt\relax % 16383pt represented in terms of TSP
1382 \else%
1383 \@tempdimc12411.36322pt\relax % 16383pt represented in terms of TSP
1384 \fi%
1385 \advance\@tempdimc-\val@calc@dim%
1386 \ifdim\@tempdima>\@tempdimc%
1387 \@tempcnta=\max@pg@ht\relax%
1388 \advance\@tempcnta\@ne%
1389 \xdef\max@pg@ht{\the\@tempcnta}% Number of batches eq to maxdimen
1390 \ifx\f@family\ptm%
1391 \global\advance\val@calc@dim-13002.380952pt\relax % 16383pt represented in terms of TSP
1392 \else%
1393 \global\advance\val@calc@dim-12411.36322pt\relax % 16383pt represented in terms of TSP
1394 \fi%
1395 \global\advance\val@calc@dim\@tempdima%
1396 \else%
1397 \global\advance\val@calc@dim\@tempdima%
1398 \fi}%
1399 \appdef\total@text{%
1400 % Avoiding the \maxdimen error
1401 % Divided the text height in batches of 16383pt (less than maxdimen)
1402 \@tempcnta=\z@%
1403 \@whilenum\@tempcntb>16383\relax%
1404 \do{%
1405 \advance\@tempcntb-16383\relax%
1406 \advance\@tempcnta\@ne%
1407 }%
1408 \xdef\max@pg@ht{\the\@tempcnta}% Number of batches eq to maxdimen
1409 % Text height calculation
1410 \@tempdima\the\@tempcntb pt
1411 \advance\@tempdima-\make@title@dim%
1412 % Main macro
1413 \floats@sw{%
1414 % Text height calculation for end of doc floats
1415 \advance\@tempdima-\curr@tot@float@ht}%
1416 % Storing value of available MSP text height for future reference
1417 \@tempdimb\@tempdima%
1418 % Text TSP ratio
1419 \ifx\f@family\ptm% ratio=1.26
1420 \divide\@tempdima by 126\relax
1421 \multiply\@tempdima by 100\relax
1422 \else% ratio=1.32
1423 \divide\@tempdima by 132\relax
1424 \multiply\@tempdima by 100\relax

```



```

1425 \fi%
1426 \global\advance\val@calc@dim\@tempdima%
1427 % Floats height and TSP ratio (ratio=1.11)
1428 \@tempdima\curr@tot@float@ht%
1429 \divide\@tempdima by 111\relax
1430 \multiply\@tempdima by 100\relax
1431 % Checking and adding the Float height dimen
1432 \no@dim@exceed
1433 %
1434 \ifdim\tsp@floatheight>\z@
1435 \@tempdima\tsp@floatheight%
1436 \divide\@tempdima by 111\relax
1437 \multiply\@tempdima by 100\relax
1438 % Checking and adding the TSP Float height dimen
1439 \no@dim@exceed
1440 %
1441 \fi%
1442 % Extra Text height calculation
1443 \@tempdima\val@calc@dim\advance\@tempdima-\text@ht@allowed\relax
1444 \ifx\f@family\ptm% ratio=1.26
1445 \divide\@tempdima by 100\relax
1446 \multiply\@tempdima by 126\relax
1447 \else% ratio=1.32
1448 \divide\@tempdima by 100\relax
1449 \multiply\@tempdima by 132\relax
1450 \fi%
1451 % Adding extra batches of text (if required)
1452 \@tempcntb=\max@pg@ht\relax
1453 \ifnum\@tempcntb>\z@%
1454 \@tempcnta16383\relax
1455 \multiply\@tempcnta\@tempcntb\relax
1456 \typeout{AIP Info: Extra Typeset Text: \the\@tempdima+\the\@tempcnta pt}%
1457 %
1458 \@tempdimc\@tempdima%
1459 \advance\@tempdimc-\@tempdimb%
1460 \ifdim\@tempdimc>\z@%
1461 \global\extra@ruletrue\immediate\write\@mainaux{\string\global\string\extra@ruletrue}%
1462 \else%
1463 \advance\@tempdimc16383pt\relax
1464 \ifdim\@tempdimc>\z@%
1465 \global\extra@ruletrue\immediate\write\@mainaux{\string\global\string\extra@ruletrue}%
1466 \fi%
1467 \fi%
1468 \else%
1469 \ifdim\@tempdima>\z@\typeout{AIP Info: Extra Typeset Text: \the\@tempdima}\fi%
1470 \@tempdimc\@tempdima
1471 \advance\@tempdimc-\@tempdimb%
1472 \ifdim\@tempdimc>\z@%
1473 \global\extra@ruletrue%
1474 \fi%

```

```

1475 \fi%
1476 % Rule calculation loop
1477 % Modifying the rule height
1478 \@tempcntb=\max@pg@ht\relax
1479 \ifnum\@tempcntb>\z@
1480 \loop\ifdim\@tempdima>\z@\else\do
1481 \advance\@tempdima16383pt\relax
1482 \advance\@tempcntb\m@ne
1483 \repeat
1484 \fi%
1485 % Rule generation
1486 % Set the count for loop
1487 \ifdim\@tempdima>\z@
1488 % Resetting the value of loop count (\@tempcnta)
1489 \ifextra@rule%
1490 \calc@run@count{LastPage}%
1491 \else%
1492 \floats@sw{%
1493 \iffloats@end\calc@run@count{LastBibItem}\else\calc@run@count{LastPage}\fi%
1494 }\calc@run@count{EndText}}%
1495 \fi%
1496 % Storing the value of Start of Loop run count
1497 \ifextra@rule\xdef\loop@count{\rev@getpagerefnnumber{LastBibItem}}\else\xdef\loop@count{\the@
1498 % Count of last page of rule
1499 \def\rule@display{% Total rule dim(\@tempdima) > current page height (already known till here
1500 \ifnum\@tempcnta<\loop@count\relax%
1501 \@tempdimb\textheight%
1502 \else%
1503 \@tempdimb\csname page@height\romannumeral\the\@tempcnta\endcsname\relax%
1504 \fi%
1505 }%
1506 % Loop
1507 \@whilenum\@tempcnta>\z@%
1508 \do{%
1509 \@ifundefined{page@height\romannumeral\the\@tempcnta}{}%
1510 {\global\advance\@tempdima-\csname page@height\romannumeral\the\@tempcnta\endcsname\relax}%
1511 \ifdim\@tempdima>\z@ % Rule spans complete page
1512 % Fixing rule height w.r.t Float on the page
1513 \@ifundefined{flt@ht@fix\romannumeral\the\@tempcnta}{}%
1514 {\global\advance\@tempdima-\csname flt@ht@fix\romannumeral\the\@tempcnta\endcsname\relax}%
1515 \ifdim\@tempdima>\z@%
1516 \@ifundefined{page@height\romannumeral\the\@tempcnta}%
1517 {\@tempdimb\z@}%
1518 {\rule@display}%
1519 \else% Rule dimen less than 0 after float fix
1520 % Including maxdimens
1521 \ifnum\@tempcntb>\z@%
1522 \advance\@tempcntb\m@ne%
1523 \advance\@tempdima16383pt\relax%
1524 \@ifundefined{page@height\romannumeral\the\@tempcnta}%

```

```

1525 {\@tempdimb\z@}%
1526 {\ifdim\@tempdima>\z@%
1527   \rule@display%
1528   \else%
1529     \divide\@tempdima by \tw@%
1530     \@tempdimb\csname page@height\romannumeral\the\@tempcnta\endcsname\relax%
1531     \advance\@tempdimb\@tempdima%
1532     \@tempdima=\z@% Exiting the loop
1533     \fi}%
1534   \else%
1535     \divide\@tempdima by \tw@%
1536     \@tempdimb\csname page@height\romannumeral\the\@tempcnta\endcsname\relax%
1537     \advance\@tempdimb\@tempdima%
1538     \@tempdima=\z@% Exiting the loop
1539     \fi%
1540   \fi%
1541   \if@filesw
1542     \immediate\write\@mainaux{\expandafter\string\xdef\expandafter\string\csname page@mark\romannu
1543     \fi%
1544     \else% Rule length is less than page height
1545     % Including maxdimens
1546     \ifnum\@tempcntb>\z@%
1547     \advance\@tempcntb\m@ne%
1548     \advance\@tempdima16383pt\relax%
1549     % Fixing rule height w.r.t Float on the page
1550     \ifundefined{flt@ht@fix\romannumeral\the\@tempcnta}{}%
1551     {\global\advance\@tempdima-\csname flt@ht@fix\romannumeral\the\@tempcnta\endcsname\relax}
1552     \ifdim\@tempdima>\z@%
1553     \ifundefined{page@height\romannumeral\the\@tempcnta}{%
1554     {\@tempdimb\z@}%
1555     {\rule@display}%
1556     \else%
1557     \divide\@tempdima by \tw@%
1558     \@tempdimb\csname page@height\romannumeral\the\@tempcnta\endcsname\relax%
1559     \advance\@tempdimb\@tempdima%
1560     \@tempdima=\z@% Exiting the loop
1561     \fi%
1562     \else%
1563     \ifundefined{page@height\romannumeral\the\@tempcnta}{%
1564     {\@tempdimb\z@}%
1565     {\@tempdimb\csname page@height\romannumeral\the\@tempcnta\endcsname\relax}%
1566     \advance\@tempdimb\@tempdima%
1567     \fi%
1568     \ifdim\@tempdimb>\z@%
1569     \if@filesw
1570     \immediate\write\@mainaux{\expandafter\string\xdef\expandafter\string\csname page@mark\roman
1571     \fi%
1572     \fi%
1573     \fi%
1574     \ifdim\@tempdimb>\z@\advance\@tempcnta\m@ne\else\@tempcnta=\z@\fi%

```

```

1575 \ifnum\@tempcnta=\z@\@tempdima=\z@\fi%
1576 }%
1577 \fi
1578 % Representing MSP text height in terms of TSP pages
1579 \@tempdima\val@calc@dim
1580 \divide\@tempdima by 6655\relax % in terms of textheight of TSP
1581 \multiply\@tempdima by 10\relax
1582 \divide\@tempdima by 2\relax
1583 \global\val@calc@dim\@tempdima%
1584 % If maxdimens
1585 \@tempcnta=\max@pg@ht\relax
1586 \@whilenum\@tempcnta>\z@
1587 \do{%
1588 \advance\@tempcnta\m@ne
1589 \ifx\f@family\ptm%
1590 \@tempdima13002.380952pt\relax % 16383pt represented in terms of TSP
1591 \else%
1592 \@tempdima12411.36322pt\relax % 16383pt represented in terms of TSP
1593 \fi%
1594 \divide\@tempdima by 6655\relax
1595 \multiply\@tempdima by 10\relax
1596 \divide\@tempdima by 2\relax
1597 \global\advance\val@calc@dim\@tempdima
1598 }%
1599 \xdef\page@calc@count{\local@strip@pt\val@calc@dim}%
1600 \immediate\write\@mainaux{\string\xdef\string\page@calc@count{\page@calc@count}}
1601 \if@filesw%
1602 \typeout{AIP Info: Typeset pages: \page@calc@count}%
1603 \ifdim\val@calc@dim>\page@allowed pt\relax
1604 \@restrict@error{Your text appears to exceed the APL page limit.^^JPlease reduce the len
1605 \fi%
1606 \fi%
1607 }% end \total@text
1608 %
1609 \prepdef\printfigures{\@booleantrue\lengthcheck@sw%
1610 \floats@sw}%
1611 {\ifdim\pagetotal=\z@%
1612 \@tempcntb=\the\c@page%
1613 \loop%
1614 \advance\@tempcntb\m@ne%
1615 \ifdim\csname page@height\romannumeral\the\@tempcntb\endcsname>\z@\else\do%
1616 \repeat%
1617 \@bsphack%
1618 \protected@write\@auxout{}\{\string\newlabel{EndText}\{\csname page@height\romannumeral\the\@tem
1619 \@esphack%
1620 \else%
1621 \def\@currentlabel{\the\pagetotal}\label{EndText}%
1622 \fi}}%
1623 %
1624 \floats@sw\appdef\endNAT@thebibliography{%

```

```

1625 \ifnum\c@figure=\z@%
1626   \ifnum\c@table=\z@%
1627 \global\floats@endtrue\immediate\write\@mainaux{\string\global\string\floats@endtrue}%
1628 \def\@currentlabel{\the\pagetotal}\label{LastBibHt}%
1629 \fi\fi}}{}
1630   % end preprint
1631 }{% For Reprint
1632 \gappdef\class@enddocumenthook{%
1633   \calc@run@count[1]{LastPage}%
1634   \ifnum\@tempcnta>\page@allowed\relax
1635     \@restrict@error{Your text appears to exceed the APL page limit.^^JPlease reduce the len
1636   \fi}%
1637 }% reprint
1638 }{}%

```

End of apl pagerestriction code.

6.25.3 Style updates for jmp and rse

JMP, BMF and RSE journal's to be as one column at Reprint stage

```

1639 %%
1640 %% JMP, BMF and RSE journal's to be as one column at Reprint stage
1641 %%
1642 \def\jnl@rse{rse}%
1643 \def\jnl@jmp{jmp}%
1644 \preprintsty@sw{%
1645   {%\ifx\@journal\jnl@jmp%
1646     \onecolumn@sw{%
1647       \typeout{AIP Info: \@journal\space journal style Single column, 2013/07/30}%
1648     \@booleanfalse\twocolumn@sw%
1649   \appdef\setup@hook{%
1650     \twoside@sw{%
1651       \oddsidemargin 28pt
1652       \evensidemargin 0pt
1653       \marginparwidth 60pt
1654     }{%
1655       \oddsidemargin 28pt
1656       \evensidemargin 0pt
1657       \marginparwidth 44pt
1658     }%
1659   }%
1660 \marginparsep 10pt
1661 \topmargin -17pt
1662 \headheight 12pt
1663 \headsep 25pt
1664 \topskip 10pt
1665 \splittopskip\topskip
1666 \footskip 30pt
1667 \textheight=53.5pc
1668 \textwidth 33pc

```

```

1669 \columnsep 10pt
1670 \def\title@column#1{%
1671   \minipagefootnote@init
1672   \beginngroup
1673   \let\@footnotetext\frontmatter@footnotetext
1674   \ltx@no@footnote
1675   #1%
1676   \endgroup
1677   \minipagefootnote@foot
1678 }%
1679 }{}%
1680 % \fi% Curly brace
1681 }

```

6.25.4 Style updates for bmf and addition of new substyle sd

BMF journal to match with final layout (textheight and other page setup dimensions). Addition of new journal SD: Structural Dynamics.

```

1682 %% BMF journal to match with final layout (textheight)
1683 %% Addition of new journals SD: Structural Dynamics
1684 %
1685 \def\jnl@bmf{bmf}%
1686 \def\jnl@sd{sd}%
1687 \preprintsty@sw{%
1688   {%\ifx\@journal\jnl@bmf%
1689     \newonecolumn@sw{%
1690       \typeout{AIP Info: \@journal\space journal style Single column, 2011/08/11}%
1691     \@booleanfalse\twocolumn@sw%
1692   \appdef\setup@hook{%
1693     \twoside@sw{%
1694       \oddsidemargin 28pt
1695       \evensidemargin 0pt
1696       \marginparwidth 60pt
1697     }{%
1698       \oddsidemargin 28pt
1699       \evensidemargin 0pt
1700       \marginparwidth 44pt
1701     }%
1702   }%
1703 \marginparsep 10pt
1704 \topmargin -17pt
1705 \headheight 12pt
1706 \headsep 25pt% 25pt
1707 \topskip 10pt
1708 \splittopskip\topskip
1709 \footskip 30pt
1710 % \textheight=53.5pc
1711 \textheight=54.5pc%
1712 \textwidth 33pc

```

```

1713 \columnsep 10pt
1714 \def\title@column#1{%
1715   \minipagefootnote@init
1716   \beginngroup
1717   \let\@footnotetext\frontmatter@footnotetext
1718   \ltx@no@footnote
1719   #1%
1720   \endgroup
1721   \minipagefootnote@foot
1722 }%
1723 \def\adjust@abstractwidth{%
1724   \parindent1em\relax
1725   % \advance\leftskip.5in\relax
1726   \advance\leftskip2.5pc\relax
1727   \advance\rightskip2.5pc\relax
1728   \@totalleftmargin\leftskip
1729   \@afterheading\@afterindentfalse
1730 }%
1731 % \fi
1732 }{}%
1733 }

```

6.25.5 Addition of new substyle jor

Addition of new journal JOR: Journal of Rheology.

```

1734 %%
1735 %% Journal of Rheology (jor)
1736 %%
1737 \def\jnl@jor{jor}%
1738 \preprintsty@sw{}%
1739 {\ifx\@journal\jnl@jor%
1740   \typeout{AIP Info: \@journal\space journal style Single column, 2013/10/24}%
1741   \@booleanfalse\twocolumn@sw%
1742   \appdef\setup@hook{%
1743     \twoside@sw{%
1744       \oddsidemargin 28pt
1745       \evensidemargin 0pt
1746       \marginparwidth 60pt
1747     }{%
1748       \oddsidemargin 28pt
1749       \evensidemargin 0pt
1750       \marginparwidth 44pt
1751     }%
1752   }%
1753   \marginparsep 10pt
1754   \topmargin -17pt
1755   \headheight 12pt
1756   \headsep 25pt
1757   \topskip 10pt

```

```

1758 \splittopskip\topskip
1759 \footskip 30pt
1760 \textheight=53.5pc
1761 \textwidth 33pc
1762 \columnsep 10pt
1763 \def\title@column#1{%
1764   \minipagefootnote@init
1765   \begingroup
1766   \let\@footnotetext\frontmatter@footnotetext
1767   \ltx@no@footnote
1768   #1%
1769   \endgroup
1770   \minipagefootnote@foot
1771 }%
1772 \def\frontmatter@title@format{%
1773   \preprintsty@sw{}\{\Large}%
1774   \sffamily%
1775   \bfseries%
1776   \leftskip0pt plus1fill%
1777   \rightskip0pt plus1fill%
1778   \parindent\z@%
1779   %\raggedright%
1780   \parskip\z@skip%
1781 }%
1782 \def\frontmatter@@indent{%
1783   \skip@\@flushglue
1784   \@flushglue\z@ plus.3\hsize\relax
1785   \leftskip0pt plus1fill%
1786   \rightskip0pt plus1fill%
1787   \parindent\z@%
1788   %\raggedright
1789   %\advance\leftskip.5in\relax
1790   \@totalleftmargin\leftskip
1791   \@flushglue\skip@
1792 }%
1793 %\def\frontmatter@authorformat{%
1794 % \frontmatter@@indent
1795 % \sffamily
1796 %}%
1797 \def\frontmatter@RRAP@format{%
1798   \addvspace{5\p@}%
1799   \small
1800   \leftskip0pt plus1fill%
1801   \rightskip0pt plus1fill%
1802   \parindent\z@%
1803   %\raggedright
1804   %\advance\leftskip.5in\relax
1805   \@totalleftmargin\leftskip
1806   \everypar{%
1807     \hbox\bgroup(\@gobble@leavemode@uppercase%)

```



```

1808 }%
1809 \def\par{%
1810   \@ifvmode{}\f{(
1811     \unskip)\egroup\@@par
1812   }%
1813 }%
1814 }%
1815 \def\frontmatter@abstractfont{}%
1816 \def\frontmatter@abstractwidth{\textwidth}
1817 \def\abstractname{Synopsis}
1818 \def\frontmatter@abstractheading{%
1819   \begingroup
1820     \centering\large
1821     {\bfseries\abstractname}
1822     \par\vskip.25\baselineskip
1823   \endgroup
1824 }%
1825 \appdef\setup@hook{%
1826   \preprintsty@sw{}\f{%
1827     \let\refname\old@refname%\@empty
1828   }%
1829 }%
1830 %
1831 \def\ps@article{%
1832   \def\@evenhead{\let\\\heading@cr\sffamily\thepage\quad\checkdate\hfil\@runningtitle\hfil}%
1833   \def\@oddhead{\let\\\heading@cr\hfil\sffamily\@runningtitle\hfil\checkdate\quad\thepage}%
1834   \def\@oddfoot{}%
1835   \def\@evenfoot{}%
1836   \let\@mkboth\@gobbletwo
1837   \let\sectionmark\@gobble
1838   \let\subsectionmark\@gobble
1839 }%
1840 \def\@make@capt@title#1#2{%
1841   \@ifx@empty\float@link{\@firstofone}\expandafter\href\expandafter{\float@link}}%
1842   {\bfseries#1}}\@caption@fignum@sep#2%
1843 }%
1844 \def\@caption@fignum@sep{{\bfseries.} }%
1845 \fi}

```

6.25.6 Addition of new substyle cp

Addition of new journal AIP-CP: AIP Conference Proceedings.

```

1846 %%
1847 %% AIP Conference Proceedings
1848 %%
1849 \def\jnl@cp{cp}%
1850 \preprintsty@sw{}\f{%
1851   {\ifx\@journal\jnl@cp%
1852     \typeout{AIP Info: \@journal\space journal style Single column, 2013/10/30}%

```

```

1853 \@booleanfalse\twocolumn@sw%
1854 \appdef\setup@hook{%
1855   \twoside@sw{%
1856     \oddsidemargin 0pt
1857     \evensidemargin 0pt
1858     \marginparwidth 60pt
1859   }{%
1860     \oddsidemargin 0pt
1861     \evensidemargin 0pt
1862     \marginparwidth 44pt
1863   }%
1864 }%
1865 \marginparsep 10pt
1866 \topmargin -29.5pt
1867 \headheight 12pt
1868 \headsep 25pt
1869 \topskip 10pt
1870 \splittopskip\topskip
1871 \footskip 30pt
1872 \textheight=53.5pc
1873 \textwidth 39pc
1874 \columnsep 10pt
1875 %%
1876 \def\title@column#1{%
1877   \minipagefootnote@init
1878   \begingroup
1879     \let\@footnotetext\frontmatter@footnotetext
1880     \ltx@no@footnote
1881     #1%
1882   \endgroup
1883   \minipagefootnote@foot
1884 }%
1885 %%
1886 \def\frontmatter@title@format{%
1887   \preprintsty@sw{}{\LARGE}% \Large
1888   %\sffamily%
1889   \bfseries%
1890   \leftskip0pt plus1fill%
1891   \rightskip0pt plus1fill%
1892   \parindent\z@%
1893   %\raggedright%
1894   \parskip\z@skip%
1895 }%
1896 %%
1897 \def\frontmatter@@indent{%
1898   \skip@\@flushglue
1899   \@flushglue\z@ plus.3\hsize\relax
1900   \leftskip0pt plus1fill%
1901   \rightskip0pt plus1fill%
1902   \parindent\z@%

```

```

1903 %\raggedright
1904 %\advance\leftskip.5in\relax
1905 \@totalleftmargin\leftskip
1906 \@flushglue\skip@
1907 }%
1908 %%
1909 \def\frontmatter@RRAP@format{%
1910   \addvspace{5\p@}%
1911   \small
1912   \leftskip0pt plus1fill%
1913   \rightskip0pt plus1fill%
1914   \parindent\z@%
1915   %%\raggedright
1916   %%\advance\leftskip.5in\relax
1917   \@totalleftmargin\leftskip
1918   \everypar{%
1919     \hbox\bgroup(\@gobble@leavemode@uppercase%)
1920   }%
1921   \def\par{%
1922     \@ifvmode{}\{%(
1923       \unskip)\egroup\@@par
1924     }%
1925   }%
1926 }%
1927 \def\frontmatter@abstractfont{\small}%
1928 \def\frontmatter@abstractwidth{\textwidth}
1929 \def\@keys@name{{\small\bfseries Keywords:} }%
1930 \def\@pacs@name{{\small\bfseries PACS:} }%
1931 \def\abstractname{Abstract.}
1932 %%
1933 \def\frontmatter@abstractheading{%
1934   \begingroup
1935   % \centering\large
1936   \small%
1937   {\bfseries\abstractname}
1938   % \par\vskip.25\baselineskip
1939   \endgroup
1940 }%
1941 %%
1942 \def\adjust@abstractwidth{%
1943   \parindent1em\relax
1944   % \advance\leftskip.5in\relax
1945   \@totalleftmargin\leftskip
1946   \@afterheading\@afterindentfalse
1947   \small%
1948 }%
1949 %%
1950 \def\frontmatter@PACS@format{%
1951   % \addvspace{11\p@}%
1952   \adjust@abstractwidth

```

```

1953 % \parskip\z@skip
1954 \samepage
1955 }%
1956 \def\frontmatter@keys@format{%
1957 \addvspace{11\p@}%
1958 \adjust@abstractwidth
1959 \parskip\z@skip
1960 \samepage
1961 }%
1962 %%
1963 \def\frontmatter@authorformat{%
1964 \frontmatter@@indent
1965 \Large%
1966 % \sffamily
1967 \vskip.5\baselineskip%
1968 }%
1969 %%
1970 %%
1971 \def\titleblock@produce{%
1972 \begingroup
1973 \ltx@footnote@pop
1974 \def\@mpfn{mpfootnote}%
1975 \def\thempfn{\thempfootnote}%
1976 \c@mpfootnote\z@
1977 \let\@makefnmark\frontmatter@makefnmark
1978 \frontmatter@setup
1979 \thispagestyle{titlepage}\label{FirstPage}%
1980 \frontmatter@title@produce
1981 \groupauthors@sw{%
1982 \frontmatter@author@produce@group
1983 }{%
1984 \frontmatter@author@produce@script
1985 }%
1986 \frontmatter@RRAPformat{%
1987 \expandafter\produce@RRAP\expandafter{\@date}%
1988 \expandafter\produce@RRAP\expandafter{\@received}%
1989 \expandafter\produce@RRAP\expandafter{\@revised}%
1990 \expandafter\produce@RRAP\expandafter{\@accepted}%
1991 \expandafter\produce@RRAP\expandafter{\@published}%
1992 }%
1993 \frontmatter@abstract@produce
1994 \@ifx@empty\@keywords{}\{%
1995 \@keywords@produce\@keywords
1996 }%
1997 \@ifx@empty\@pacs{}\{%
1998 \@pacs@produce\@pacs
1999 }%
2000 \par
2001 \frontmatter@finalspace
2002 \endgroup

```

```

2003 }%
2004 %%
2005 \appdef\setup@hook{%
2006 \preprintsty@sw}{%
2007 \let\refname\old@refname%\@empty
2008 }%
2009 }%
2010 %%
2011 \def\ps@article{%
2012 % \def\@evenhead{\let\\\heading@cr\thepage\quad\checkindate\hfil{\leftmark}}%
2013 % \def\@oddhead{\let\\\heading@cr{\rightmark}\hfil\checkindate\quad\thepage}%
2014 \def\@evenhead{}%
2015 \def\@oddhead{}%
2016 \def\@oddfoot{}%
2017 \def\@evenfoot{}%
2018 \let\mkboth\markboth
2019 \let\sectionmark\gobble
2020 \let\subsectionmark\gobble
2021 }%
2022 %%
2023 \def\@make@capt@title#1#2{%
2024 \@ifx@empty\float@link{\@firstofone}{\expandafter\href\expandafter{\float@link}}%
2025 {\bfseries#1}}\@caption@fignum@sep#2%
2026 }%
2027 \def\@caption@fignum@sep{\bfseries.} }%
2028 \setcounter{secnumdepth}{0}
2029 \def\section{\@startsection{section}{1}{\z@}{-0.8cm \@plus-1ex \@minus -.2ex}{0.5cm}{\normalfont}
2030 \def\subsection{\@startsection{subsection}{2}{\z@}{-.8cm \@plus-1ex \@minus -.2ex}{.5cm}{\normalfont}
2031 \def\subsubsection{\@startsection{subsubsection}{3}{\z@}{-.8cm \@plus-1ex \@minus -.2ex}{.5cm}{\normalfont}
2032 %
2033 \def\BIBsection{\@startsection{section}{1}{\z@}{-0.8cm \@plus-1ex \@minus -.2ex}{0.5cm}{\normalfont}
2034 \def\figurename{FIGURE}
2035 %%
2036 \newcommand\rtx@myciteonline[3]{%
2037 \ifNAT@swa
2038 \leavevmode
2039 \unskip
2040 % \textsuperscript{\normalfont#1}% TeXSupport
2041 \space[\{\normalfont#1\}]%
2042 \if*#3*\else\ (#3)\fi
2043 \else
2044 #1%
2045 \fi
2046 \endgroup
2047 }%
2048 %%
2049 \appdef\setup@hook{%
2050 \authoryear@sw}{%
2051 \def\NAT@cmprs{\z@}
2052 % \let\rtx@citesuper\rtx@mycitesuper%

```

```

2053 \let\NAT@citesuper\rtx@myciteonline%\rtx@citesuper
2054 \let\place@bibnumber\old@place@bibnumber
2055 \gdef\place@bibnumber@online#1{{#1}.\hskip5pt}%
2056 \let\place@bibnumber\place@bibnumber@online
2057 \def\NAT@spacechar{ }%
2058 \def\NAT@conj{and\ }%
2059 \bibpunct{}{}{, }{s}{}{\textsuperscript{,}}% TeXSupport
2060 }%
2061 }%
2062 %%
2063 \def\rtx@mybibsection{%
2064 \@ifx@empty\refname{%
2065 \par\vspace{6\p@ plus 6\p@}%
2066 }{%
2067 \expandafter\BIBsection\expandafter*\expandafter{\refname}%
2068 \nobreaktrue
2069 }%
2070 }%
2071 \let\bibsection\rtx@mybibsection%
2072 \fi}
2073 %

```

6.25.7 pof

This macro modifies the reprint output of POF journal to single column.

```

2074 %% POF journal to be one column at Reprint stage
2075 %%
2076 %% HISTORY
2077 %% Further corrected the text area and margins to closely match Print output: 23/04/2012
2078 \def\jnl@pof{pof}%
2079 \preprintsty@sw{%
2080 {\ifx\@journal\jnl@pof%
2081 \typeout{AIP Info: \@journal\space journal style Single column, 2011/08/11}%
2082 \@booleanfalse\twocolumn@sw%
2083 \appdef\setup@hook{%
2084 \twoside@sw%
2085 \oddsidemargin 28pt
2086 \evensidemargin 0pt
2087 \marginparwidth 60pt
2088 }{%
2089 \oddsidemargin 28pt
2090 \evensidemargin 0pt
2091 \marginparwidth 44pt
2092 }%
2093 }%
2094 \marginparsep 10pt
2095 \topmargin -17pt
2096 \headheight 12pt
2097 \headsep 25pt

```

```

2098 \topskip 10pt
2099 \splittopskip\topskip
2100 \footskip 30pt
2101 \textheight=53.5pc
2102 \textwidth 33pc
2103 \columnsep 10pt
2104 \def\title@column#1{%
2105   \minipagefootnote@init
2106   \begingroup
2107   \let\@footnotetext\frontmatter@footnotetext
2108   \ltx@no@footnote
2109   #1%
2110   \endgroup
2111   \minipagefootnote@foot
2112 }%
2113 \fi}
2114 }%

```

End of pof code.

```

2115 %</package>

```

7 AAPM: The Society Journals Style (mph sub-style)

The file `aapm.rtx` is read in by the `revtex4` document class for applying the journal specific changes. User should use `[aapm,mph]` for applying the required updates.

```

2116 %<*aapm>

```

Protect this file from being read in by anything but REVTeX.

```

2117 \ifx\undefined\substyle@ext
2118 \def\@tempa{%
2119   \endinput
2120   \GenericWarning{I must be read in by REVTeX! (Bailing out)}%
2121 }%
2122 \expandafter\else
2123 \def\@tempa{%
2124   \expandafter\fi\@tempa
2125   \class@info{RevTeX society AAPM selected}%
2126   \DeclareOption{mph}{\change@journal{mph}}%
2127 }%
2128 \@booleantrue\longbibliography@sw
2129 \@booleanfalse\authoryear@sw
2130 \def\@bibstyle{aapmrev\substyle@post}%
2131 \appdef\@bibdataout@rev{\@bibdataout@aapm}%
2132 \def\@bibdataout@aapm{%
2133   \immediate\write\@bibdataout{%
2134     @CONTROL{%

```

```

2135     aapm41Control%
2136     \longbibliography@sw{%
2137         ,pages="1",title="0"%
2138     }{%
2139         ,pages="0",title=""%
2140     }%
2141 }%
2142 }%
2143 \if@filesw
2144     \immediate\write\@auxout{\string\citation{aapm41Control}}}%
2145 \fi
2146 }%
2147 \appdef\setup@hook{%
2148     \lengthcheck@sw{%
2149         \RequirePackage{times}}%
2150 \frenchspacing%
2151     }{%%
2152 }
2153 \@booleantrue\preprintsty@sw
2154 \@booleantrue\showPACS@sw
2155 \@booleantrue\showKEYS@sw
2156 \appdef\setup@hook{%
2157     \preprintsty@sw}{%
2158     \let\refname\@empty
2159 }%
2160 }%
2161 \appdef\setup@hook{%
2162     \preprintsty@sw{%
2163         \ps@preprint
2164     }{%
2165         \ps@article
2166     }%
2167 }%
2168 \def\ps@preprint{%
2169     \def\@oddhead{\@runningtitle\hfil}%
2170     \def\@evenhead{\@runningtitle\hfil}%
2171     \def\@oddfoot{\hfil\thepage\quad\checkindate\hfil}%
2172     \def\@evenfoot{\hfil\thepage\quad\checkindate\hfil}%
2173     \let\@mkboth\@gobbletwo
2174     \let\sectionmark\@gobble
2175     \let\subsectionmark\@gobble
2176 }%
2177 \def\ps@article{%
2178     \def\@evenhead{\let\\\heading@cr\thepage\quad\checkindate\hfil\@runningtitle}%
2179     \def\@oddhead{\let\\\heading@cr\@runningtitle\hfil\checkindate\quad\thepage}%
2180     \def\@oddfoot{}}%
2181     \def\@evenfoot{}}%
2182     \let\@mkboth\@gobbletwo
2183     \let\sectionmark\@gobble
2184     \let\subsectionmark\@gobble

```



```

2185 }%
2186 \def\@runningtitle{\@shorttitle}%
2187 \renewenvironment{titlepage}{%
2188   \let\wastwocol@sw\twocolumn@sw
2189   \onecolumngrid
2190   \newpage
2191   \thispagestyle{titlepage}%
2192   \c@page\z@% article sets this to one not zero???
2193 }{%
2194   \wastwocol@sw{\twocolumngrid}{\newpage}%
2195 }%
2196 \let\@fnsymbol@latex\@fnsymbol
2197 \let\@fnsymbol\@alph
2198 \def\adjust@abstractwidth{%
2199   \parindent1em\relax
2200   \advance\leftskip.5in\relax
2201   \@totalleftmargin\leftskip
2202   \preprintsty@sw{\rightskip.14\hsize\relax}
2203   \@afterheading\@afterindentfalse
2204 }%
2205 \def\frontmatter@abstractheading{%
2206 \def\frontmatter@abstractfont{%
2207   \adjust@abstractwidth
2208 }%
2209 \def\frontmatter@postabstractspace{1\baselineskip}
2210 \def\frontmatter@finalspace{\advspace{28\p@}}
2211 \appdef\setup@hook{%
2212   \preprintsty@sw{%
2213     \@booleantrue\titlepage@sw
2214     \let\section\section@preprintsty
2215     \let\subsection\subsection@preprintsty
2216     \let\subsubsection\subsubsection@preprintsty
2217   }}%
2218 }%
2219 \def\frontmatter@@indent{%
2220   \skip@\@flushglue
2221   \preprintsty@sw{\@flushglue\z@ plus.3\hsize\relax}%
2222   {\@flushglue.14\hsize\relax}
2223   \raggedright
2224   \advance\leftskip.5in\relax
2225   \@totalleftmargin\leftskip
2226   \@flushglue\skip@
2227 }%
2228 \def\frontmatter@authorformat{%
2229   \frontmatter@@indent
2230   \sffamily
2231 }%
2232 \renewcommand*{email}[1][Electronic mail: ]{\begingroup\sanitize@url\@email{#1}}%
2233 \def\frontmatter@above@affilgroup{\par\advspace{6\p@}}%
2234 }%

```

```

2235 \def\frontmatter@above@affiliation@script{%
2236 \frontmatter@@indent
2237 }%
2238 \def\frontmatter@above@affiliation{%
2239 }%
2240 \def\frontmatter@affiliationfont{%
2241 \frontmatter@@indent
2242 \preprintsty@sw{}\small}%
2243 \it
2244 }%
2245 \def\frontmatter@collaboration@above{%
2246 }%
2247 \def\frontmatter@setup{%
2248 \normalfont
2249 }%
2250 \def\frontmatter@title@above{\addvspace{6\p@}}%
2251 \def\frontmatter@title@format{%
2252 \preprintsty@sw{}\Large}%
2253 \sffamily
2254 \bfseries
2255 \raggedright
2256 \parskip\z@skip
2257 }%
2258 \def\frontmatter@title@below{\addvspace{7.5\p@}}%
2259 \def\@author@parskip{3\p@}%
2260 \@booleanfalse\altaffilletter@sw
2261 \def\frontmatter@makefnmark{%
2262 \@textsuperscript{%
2263 \normalfont\@thefnmark%(
2264 )%
2265 }%
2266 }%
2267 \def\frontmatter@authorbelow{%
2268 \addvspace{3\p@}%
2269 }%
2270 \let\affil@cutoff\tw@
2271 \def\frontmatter@RRAP@format{%
2272 \addvspace{2\p@}%
2273 \raggedright
2274 \advance\leftskip.5in\relax
2275 \@totalleftmargin\leftskip
2276 \preprintsty@sw{}\advance\rightskip.14\hsize\relax}
2277 \everypar{%
2278 \hbox\bgroup(\@gobble@leavemode@uppercase%)
2279 }%
2280 \def\par{%
2281 \@ifvmode{}\{%(
2282 \unskip)\egroup\@@par
2283 }%
2284 }%

```

```

2285 }%
2286 \def\punct@RRAP{;\egroup\ \hbox\bgroup}%
2287 \def\@gobble@leavemode@uppercase#1#2{\expandafter\MakeTextUppercase}%
2288 \def\frontmatter@PACS@format{%
2289   \addvspace{11\p}%
2290   \adjust@abstractwidth
2291   \parskip\z@skip
2292   \samepage
2293 }%
2294 \def\frontmatter@keys@format{%
2295   \adjust@abstractwidth
2296   \samepage
2297 }%
2298 \def\ps@titlepage{%
2299   \def\@oddhead{%
2300     \@runningtitle
2301     \hfill
2302     \produce@preprints\@preprint
2303   }%
2304   \let\@evenhead\@oddhead
2305   \def\@oddfoot{%
2306     \hb@xt@\z@\byrevtex\hss}%
2307     \hfil
2308     \preprintsty@sw{\thepage}{}%
2309     \quad\checkindate
2310     \hfil
2311   }%
2312   \let\@evenfoot\@oddfoot
2313 }%
2314 \def\byrevtex{\byrevtex@sw{Typeset by REV\TeX and AAPM}{}}%
2315 \def\produce@preprints#1{%
2316   \preprint@sw{%
2317     \vtop to \z@{%
2318       \def\baselinestretch{1}%
2319       \small
2320       \let\preprint\preprint@count
2321       \count@\z@#1@ifnum{\count@>\tw@}{%
2322         \hbox{%
2323           \let\preprint\preprint@hlist
2324           #1\setbox\z@\lastbox
2325         }%
2326       }{%
2327         \let\preprint\preprint@cr
2328         \halign{\hfil##\cr#1\crr}%
2329         \par
2330         \vss
2331       }%
2332     }%
2333   }{}%
2334 }%

```

```

2335 \def\preprint@cr#1{#1\cr}%
2336 \def\preprint@count#1{\advance\count@\@ne}%
2337 \def\preprint@hlist#1{#1\hbox{, }}%
2338 \newenvironment{Lead@inParagraph}{%
2339 \par
2340 \bfseries
2341 \@afterheading\@afterindentfalse
2342 }{%
2343 \par
2344 \hb@xt@\hsize{\hfil\leaders\hrule\hfil\leaders\hrule\hfil\hfil}%
2345 }%
2346 \appdef\frontmatter@init{%
2347 \let@environment{quotation@ltx}{quotation}%
2348 \let@environment{quotation}{Lead@inParagraph}%
2349 }%
2350 \appdef\@startsection@hook{%
2351 \let@environment{quotation}{quotation@ltx}%
2352 }%
2353 \def\secnums@rxt{%
2354 \@ifundefined\thepart{%
2355 \def\thepart {\Roman{part}}%
2356 }{}%
2357 \@ifundefined\thesection{%
2358 \def\thesection {\Roman{section}}%
2359 \def\p@section {}%
2360 }{}%
2361 \@ifundefined\thesubsection{%
2362 \def\thesubsection {\thesection.\Alph{subsection}}%
2363 \def\p@subsection {}%
2364 }{}%
2365 \@ifundefined\thesubsubsection{%
2366 \def\thesubsubsection {\thesubsection.\arabic{subsubsection}}%
2367 \def\p@subsubsection {}%
2368 }{}%
2369 \@ifundefined\theparagraph{%
2370 \def\theparagraph {\thesubsubsection.\alph{paragraph}}%
2371 \def\p@paragraph {}%
2372 }{}%
2373 \@ifundefined\thesubparagraph{%
2374 \def\thesubparagraph {\theparagraph.\arabic{subparagraph}}%
2375 \def\p@subparagraph {}%
2376 }{}%
2377 }%
2378 \def\@secntformat#1{\csname the#1\endcsname.\hskip0.5em\relax}%
2379 \def\@hang@from#1#2#3{#1#2#3}%
2380 \def\section{%
2381 \@startsection
2382 {section}%
2383 {1}%
2384 {\z@}%

```

```

2385 {1.5\baselineskip \@plus1ex \@minus .2ex}%
2386 {.5\baselineskip}%
2387 {%
2388 \normalfont
2389 \sffamily
2390 \bfseries
2391 \raggedright
2392 }%
2393 }%
2394 \def\@hangfrom@section#1#2#3{\@hangfrom{#1#2}\MakeTextUppercase{#3}}%
2395 \def\@hangfroms@section#1#2{#1\MakeTextUppercase{#2}}%
2396 \def\subsection{%
2397 \@startsection
2398 {subsection}%
2399 {2}%
2400 {\z@}%
2401 {1.5\baselineskip \@plus1ex \@minus .2ex}%
2402 {.5\baselineskip}%
2403 {%
2404 \normalfont
2405 \fontsize{9.5}{12}
2406 \sffamily
2407 \bfseries
2408 \raggedright
2409 }%
2410 }%
2411 \def\subsubsection{%
2412 \@startsection
2413 {subsubsection}%
2414 {3}%
2415 {\z@}%
2416 {1.5\baselineskip \@plus1ex \@minus .2ex}%
2417 {.5\baselineskip}%
2418 {%
2419 \normalfont
2420 \fontsize{9.5}{12}
2421 \sffamily
2422 \bfseries
2423 \itshape
2424 \raggedright
2425 }%
2426 }%
2427 \def\paragraph{%
2428 \@startsection
2429 {paragraph}%
2430 {4}%
2431 {\parindent}%
2432 {\z@}%
2433 {-1em}%
2434 {\normalfont\normalsize\itshape}%

```

```

2435 }%
2436 \def\subparagraph{%
2437   \@startsection
2438     {subparagraph}%
2439     {5}%
2440     {\parindent}%
2441     {3.25ex \@plus1ex \@minus .2ex}%
2442     {-1em}%
2443     {\normalfont\normalsize\bfseries}%
2444 }%
2445 \def\section@preprintsty{%
2446   \@startsection
2447     {section}%
2448     {1}%
2449     {\z@}%
2450     {0.8cm \@plus1ex \@minus .2ex}%
2451     {0.5cm}%
2452     {%
2453       \normalfont
2454       \bfseries
2455       \raggedright
2456     }%
2457 }%
2458 \def\subsection@preprintsty{%
2459   \@startsection
2460     {subsection}%
2461     {2}%
2462     {\z@}%
2463     {.8cm \@plus1ex \@minus .2ex}%
2464     {.5cm}%
2465     {%
2466       \normalfont
2467       \bfseries
2468       \raggedright
2469     }%
2470 }%
2471 \def\subsubsection@preprintsty{%
2472   \@startsection
2473     {subsubsection}%
2474     {3}%
2475     {\z@}%
2476     {.8cm \@plus1ex \@minus .2ex}%
2477     {.5cm}%
2478     {%
2479       \normalfont
2480       \itshape\bfseries
2481       \raggedright
2482     }%
2483 }%
2484 \let\frontmatter@footnote@produce\frontmatter@footnote@produce@endnote

```

```

2485 \def\@pnumwidth{1.55em}
2486 \def\@tocrmarg {2.55em}
2487 \def\@dotsep{2}
2488 \def\ltxu@dotsep{4.5pt}
2489 \setcounter{tocdepth}{3}
2490 \def\tableofcontents{%
2491 \addtocontents{toc}{\string\tocdepth@munge}%
2492 \print@toc{toc}%
2493 \addtocontents{toc}{\string\tocdepth@restore}%
2494 }%
2495 \def\tocdepth@munge{%
2496 \let\l@section@saved\l@section
2497 \let\l@section\@gobble@tw@
2498 }%
2499 \def\@gobble@tw@#1#2{%
2500 \def\tocdepth@restore{%
2501 \let\l@section\l@section@saved
2502 }%
2503 \def\l@part#1#2{\addpenalty{\@secpenalty}%
2504 \begingroup
2505 \set@tocdim@pagenum{#2}%
2506 \parindent \z@
2507 \rightskip\tocleft@pagenum plus 1fil\relax
2508 \skip@{\parfillskip\parfillskip\z@
2509 \addvspace{2.25em plus\p@}%
2510 \large \bf %
2511 \leavevmode\ignorespaces#1\unskip\nobreak\hskip\skip@
2512 \hb@xt@\rightskip{\hfil\unhbox\z@}\hskip-\rightskip\hskip\z@skip
2513 \par
2514 \nobreak %
2515 \endgroup
2516 }%
2517 \def\tocleft@{\z@}%
2518 \def\tocdim@min{5\p@}%
2519 \def\l@section{%
2520 \l@sections{section}% Implicit #3#4
2521 }%
2522 \def\l@f@section{%
2523 \addpenalty{\@secpenalty}%
2524 \addvspace{1.0em plus\p@}%
2525 \bf
2526 }%
2527 \def\l@subsection{%
2528 \l@sections{section}{subsection}% Implicit #3#4
2529 }%
2530 \def\l@subsubsection{%
2531 \l@sections{subsection}{subsubsection}% Implicit #3#4
2532 }%
2533 \def\l@paragraph#1#2{%
2534 \def\l@subparagraph#1#2{%

```

```

2535 \let\toc@pre\toc@pre@auto
2536 \let\toc@post\toc@post@auto
2537 \def\listoffigures{\print@toc{lof}}%
2538 \def\l@figure{\@dottedtocline{1}{1.5em}{2.3em}}
2539 \def\listoftables{\print@toc{lot}}%
2540 \let\l@table\l@figure
2541 \def\figurename{\textsc{Fig.}}
2542 \def\tablename{\textsc{Table}}
2543 \long\def\@makecaption#1#2{%
2544   \par
2545   \vskip\abovecaptionskip
2546   \begingroup
2547   \preprintsty@sw{\small}{\footnotesize}\rmfamily
2548   \sbox\@tempboxa{%
2549     \let\\heading@cr
2550     \@make@capt@title{#1}{#2}%
2551   }%
2552   \@ifdim{\wd\@tempboxa >\hsize}{%
2553     \begingroup
2554     \samepage
2555     \flushing
2556     \let\footnote\@footnotemark@gobble
2557     \@make@capt@title{#1}{#2}\par
2558   \endgroup
2559 }{%
2560   \global \@minipagefalse
2561   \hb@xt@\hsize{\hfil\unhbox\@tempboxa\hfil}%
2562 }%
2563 \endgroup
2564 \vskip\belowcaptionskip
2565 }%
2566 \def\@caption@fignum@sep{\nobreak\hskip.5em plus.2em\ignorespaces}%
2567 \@booleanfalse\raggedcolumn@sw
2568 \def\table@hook{\preprintsty@sw{\small}{\footnotesize}}%
2569 \def\tableleft@skip@float{\z@ plus\hsize}%
2570 \def\tablemid@skip@float{\@flushglue}%
2571 \def\tableright@skip@float{\z@ plus\hsize}%
2572 \def\array@row@pre@float{\hline\hline\noalign{\vskip\doublerulesep}}%
2573 \def\array@row@pst@float{\noalign{\vskip\doublerulesep}\hline\hline}%
2574 \def\@makefnmark#1{%
2575   \def\baselinestretch{1}%
2576   \leftskip1em%
2577   \parindent1em%
2578   \noindent
2579   \nobreak\hskip-\leftskip
2580   \hb@xt@\leftskip{%
2581     \hss\@makefnmark\ %
2582   }%
2583   #1%
2584   \par

```



```

2585 }%
2586 \prepdef\appendix{%
2587   \par
2588   \let\@hangfrom@section\@hangfrom@appendix
2589   \let\@sectioncntformat\@appendixcntformat
2590 }%
2591 \def\@hangfrom@appendix#1#2#3{%
2592   #1%
2593   \@ifempty{#2}{%
2594     #3%
2595   }{%
2596     #2\@ifempty{#3}{\ : \ #3}%
2597   }%
2598 }%
2599 \def\@hangfroms@appendix#1#2{%
2600   #1#2%
2601 }%
2602 \def\@appendixcntformat#1{\appendixname\ \csname the#1\endcsname}%
2603 \def\pre@bibdata{\jobname\bibdata@app}%
2604 \def\refname{References}%
2605 \def\rtx@bibsection{%
2606   \@ifxempty\refname{%
2607     \par\vspace{6\p@ plus 6\p@}%
2608   }{%
2609     \expandafter\section\expandafter*\expandafter{\refname}%
2610     \@nobreaktrue
2611   }%
2612 }%
2613 \let\bibpreamble\@empty
2614 \appdef\setup@hook{%
2615   \bibsep\z@\relax
2616 }%
2617 \def\newblock{\ }%
2618 \appdef\setup@hook{%
2619   \def\bibfont{%
2620     \preprintsty@sw{\footnotesize}%
2621     \@clubpenalty\clubpenalty
2622     \labelsep\z@
2623   }%
2624 }%
2625 \let\place@bibnumber\place@bibnumber@sup
2626 \newenvironment{theindex}{%
2627   \columnseprule \z@
2628   \columnsep 35\p@
2629   \c@secnumdepth-\maxdimen
2630   \onecolumngrid@push
2631   \section{\indexname}%
2632   \thispagestyle{plain}%
2633   \parindent\z@
2634   \parskip\z@ plus.3\p@\relax

```

```

2635 \let\item\@idxitem
2636 \onecolumngrid@pop
2637 }{%
2638 }%
2639 \def\@idxitem{\par\hangindent 40\p@}
2640 \def\subitem{\par\hangindent 40\p@ \hspace*{20\p@}}
2641 \def\subsubitem{\par\hangindent 40\p@ \hspace*{30\p@}}
2642 \def\indexspace{\par \vskip 10\p@ plus5\p@ minus3\p@\relax}
2643 \expandafter\def\csname rtx@aapm10pt\endcsname{%
2644 \let\@currname@class\@currname
2645 \def\@currname{aps10pt\substyle@post}%
2646 \class@info{Reading file \@currname.\substyle@ext}%
2647 \input{\@currname.\substyle@ext}%
2648 \let\@currname\@currname@class
2649 \class@info{Overriding 10pt}%
2650 \aapmreprint
2651 }%
2652 \expandafter\def\csname rtx@aapm11pt\endcsname{\csname rtx@aapm12pt\endcsname}%
2653 \expandafter\def\csname rtx@aapm12pt\endcsname{%
2654 \let\@currname@class\@currname
2655 \def\@currname{aps12pt\substyle@post}%
2656 \class@info{Reading file \@currname.\substyle@ext}%
2657 \input{\@currname.\substyle@ext}%
2658 \let\@currname\@currname@class
2659 \class@info{Overriding 12pt}%
2660 \aapmpreprint
2661 }%
2662 \def\today{%
2663 \number\day\space
2664 \ifcase\month
2665 \or January\or February\or March\or April\or May\or June%
2666 \or July\or August\or September\or October\or November\or December%
2667 \fi\space
2668 \number\year
2669 }%
2670 \@booleantrue\groupauthors@sw
2671 \@booleanfalse\@affils@sw
2672 \@booleantrue\runinaddress@sw
2673 \def\@journal@default{mph}%
2674 \def\@pointsize@default{12}%
2675 \appdef\setup@hook{%
2676 \preprintsty@sw}{%
2677 \def\normalsize{%
2678 \@setfontsize\normalsize\@xpt{12}%
2679 \abovedisplayskip 6\p@ plus2\p@ minus5\p@
2680 \belowdisplayskip \abovedisplayskip
2681 \abovedisplayshortskip \abovedisplayskip
2682 \belowdisplayshortskip \abovedisplayskip
2683 \let\@listi\@listI
2684 }%

```

```

2685 \def\small{%
2686   \@setfontsize\small\@ixpt{11}%
2687 \abovedisplayskip 8.5\p@ \@plus3\p@ \@minus4\p@
2688 \belowdisplayskip \abovedisplayskip
2689 \abovedisplayshortskip \z@ \@plus2\p@
2690 \belowdisplayshortskip 4\p@ \@plus2\p@ \@minus2\p@
2691 \def\@listi{%
2692   \leftmargin\leftmargini
2693   \topsep 4\p@ \@plus2\p@ \@minus2\p@
2694   \parsep 2\p@ \@plus\p@ \@minus\p@
2695   \itemsep \parsep
2696 }%
2697 }%
2698 \def\Large{%
2699   \@setfontsize\Large\@xivpt{16pt}%
2700 }%
2701 \def\@listI{%
2702   \leftmargin\leftmargini
2703   \parsep 4\p@ plus2\p@ minus\p@
2704   \topsep 8\p@ plus2\p@ minus4\p@
2705   \itemsep\z@
2706 }%
2707 \textheight = 694.0\p@
2708 }%
2709 }%
2710 \def\rtx@aapmmph{%
2711   \typeout{Using journal substyle \@journal.}%
2712   \@booleanfalse\authoryear@sw%
2713   \input{fleqn.clo}%
2714   \PassOptionsToPackage{fleqn}{amsmath}%
2715   \AtBeginDocument{\mathindent12pt\relax}%
2716 }%
2717 \appdef\setup@hook{%
2718   \bibpunct{}{}{}{}{}{}{\textsuperscript{}}%
2719   \let\onlinecite\rev@citealpnum
2720 }%
2721 \@booleantrue\footinbib@sw
2722 \let\place@bibnumber\place@bibnumber@sup
2723 \appdef\setup@hook{%
2724   \footinbib@sw{}{}%
2725   \class@warn{Citations are superscript numbers: footnotes must be endnotes; changing to that c
2726   \@booleantrue\footinbib@sw
2727 }%
2728 }%
2729 \def\present@bibnote#1#2{%
2730   \item[%
2731     \textsuperscript{%
2732       \normalfont%
2733       \Hy@raisedlink{\hyper@anchorstart{frontmatter.#1}\hyper@anchorend}%
2734       \begingroup%
```

```

2735 \csname c@\mpfn\endcsname#1\relax%
2736 \frontmatter@thefootnote%
2737 )\endgroup%
2738 }%
2739 ]#2\par%
2740 }%
2741 \def\make@footnote@endnote{%
2742 \footinbib@sw{%
2743 \ltx@footnote@push
2744 \def\thempfn{Note\thefootnote}%
2745 \let\ltx@footmark\rev@citemark
2746 \let\ltx@foottext\rev@endtext
2747 \appdef\class@enddocumenthook{\auto@bib}%
2748 \let\printendnotes\relax
2749 }{}%
2750 }%
2751 \def\apmpreprint{%
2752 }%
2753 \def\apmpreprint{%
2754 }%
2755 %</apmp>

```

8 SOR: The Society Journals Style (jor substyle)

The file `sor.rtx` is read in by the `revtex4` document class for applying the journal specific changes. User should use `[sor,jor]` for applying the required updates.

```

2756 %<*sor>

Protect this file from being read in by anything but REVTeX.

2757 \ifx\undefined\substyle@ext
2758 \def\@tempa{%
2759 \endinput
2760 \GenericWarning{I must be read in by REVTeX! (Bailing out)}%
2761 }%
2762 \expandafter\else
2763 \def\@tempa{%
2764 \expandafter\fi\@tempa
2765 \class@info{RevTeX society AIP selected}%
2766 %%
2767 \DeclareOption{jor}{\change@journal{jor}}%
2768 \def\adv{AIP Advances}%
2769 \def\ao{Appl.\ Opt.}%
2770 \def\ap{Appl.\ Phys.}%
2771 \def\apl{Appl.\ Phys.\ Lett.}%
2772 \def\apm{Appl.\ Phys.\ Lett.\ Mater.}%
2773 \def\apj{Astrophys.\ J.}%
2774 \def\bell{Bell Syst.\ Tech.\ J.}%
2775 \def\bmf{Biomicrofluidics}%

```

```

2776 \def\cha{Chaos}%
2777 \def\jqe{IEEE J.\ Quantum Electron.}%
2778 \def\assp{IEEE Trans.\ Acoust.\ Speech Signal Process.}%
2779 \def\aprop{IEEE Trans.\ Antennas Propag.}%
2780 \def\mtt{IEEE Trans.\ Microwave Theory Tech.}%
2781 \def\iovs{Invest.\ Ophthalmol.\ Vis.\ Sci.}%
2782 \def\jcp{J.\ Chem.\ Phys.}%
2783 \def\jap{J.\ Appl.\ Phys.}%
2784 \def\jmp{j.\ Math.\ Phys.}%
2785 \def\jmo{J.\ Mod.\ Opt.}%
2786 \def\josa{J.\ Opt.\ Soc.\ Am.}%
2787 \def\josaa{J.\ Opt.\ Soc.\ Am.\ A}%
2788 \def\josab{J.\ Opt.\ Soc.\ Am.\ B}%
2789 \def\jpp{J.\ Phys.\ (Paris)}%
2790 \def\jpr{j.\ Phys.\ Chem.\ Ref.\ Data}%
2791 \def\ltp{Low.\ Temp.\ Phys.}%
2792 \def\nat{Nature (London)}%
2793 \def\oc{Opt.\ Commun.}%
2794 \def\ol{Opt.\ Lett.}%
2795 \def\pl{Phys.\ Lett.}%
2796 \def\pop{Phys.\ Plasmas}%
2797 \def\pof{Phys.\ Fluids}%
2798 \def\pra{Phys.\ Rev.\ A}%
2799 \def\prb{Phys.\ Rev.\ B}%
2800 \def\prc{Phys.\ Rev.\ C}%
2801 \def\prd{Phys.\ Rev.\ D}%
2802 \def\pre{Phys.\ Rev.\ E}%
2803 \def\prl{Phys.\ Rev.\ Lett.}%
2804 \def\rmp{Rev.\ Mod.\ Phys.}%
2805 \def\rsi{Rev.\ Sci.\ Instrum.}%
2806 \def\rse{J.\ Renewable Sustainable Energy}%
2807 \def\pspie{Proc.\ Soc.\ Photo-Opt.\ Instrum.\ Eng.}%
2808 \def\sjqe{Sov.\ J.\ Quantum Electron.}%
2809 \def\vr{Vision Res.}%
2810 \def\sd{Structural Dynamics}%
2811 \def\jor{J.\ Rheol.}%
2812 \def\cp{AIP\ Conference\ Proceedings}%
2813 %%
2814 \DeclareOption{author-numerical}{%
2815   \@booleantrue\authoryear@sw
2816   \@booleantrue\authornum@sw
2817 }%
2818 \DeclareOption{article-title}{%
2819   \@booleanfalse\sor@jtitx@sw
2820 }%
2821 \@booleantrue\sor@jtitx@sw
2822 \@booleanfalse\authoryear@sw
2823 \@booleanfalse\authornum@sw
2824 \@booleanfalse\onecolumn@sw
2825 \@booleanfalse\newonecolumn@sw

```

```

2826 \appdef\@bibdataout@rev{\@bibdataout@sor}%
2827 \def\@bibdataout@sor{%
2828   \immediate\write\@bibdataout{%
2829     @CONTROL{%
2830       sor41Control%% TeXSupport: aip
2831       \longbibliography@sw{\true@sw}{\sor@jtitx@sw{\false@sw}{\true@sw}}%
2832       {%
2833         ,pages="1",title="0"%
2834       }{%
2835         ,pages="0",title=""%
2836       }%
2837     }%
2838   }%
2839   \if@filesw
2840     \immediate\write\@auxout{\string\citation{sor41Control}}%% TeXSupport: aip
2841   \fi
2842 }%
2843 \@booleantrue\preprintsty@sw
2844 \@booleantrue\showPACS@sw
2845 \@booleantrue\showKEYS@sw
2846 %% TeXSupport
2847 \let\old@refname\refname
2848 \appdef\setup@hook{%
2849   \preprintsty@sw{%
2850     \let\refname\@empty
2851   }%
2852 }%
2853 \appdef\setup@hook{%
2854   \preprintsty@sw{%
2855     \ps@preprint
2856   }{%
2857     \ps@article
2858   }%
2859 }%
2860 \def\ps@preprint{%
2861   \def\@oddhead{\@runningtitle\hfil}%
2862   \def\@evenhead{\@runningtitle\hfil}%
2863   \def\@oddfoot{\hfil\thepage\quad\checkindate\hfil}%
2864   \def\@evenfoot{\hfil\thepage\quad\checkindate\hfil}%
2865   \let\@mkboth\@gobbletwo
2866   \let\sectionmark\@gobble
2867   \let\subsectionmark\@gobble
2868 }%
2869 \def\ps@article{%
2870   \def\@evenhead{\let\\\heading@cr\thepage\quad\checkindate\hfil\@runningtitle}%
2871   \def\@oddhead{\let\\\heading@cr\@runningtitle\hfil\checkindate\quad\thepage}%
2872   \def\@oddfoot{}%
2873   \def\@evenfoot{}%
2874   \let\@mkboth\@gobbletwo
2875   \let\sectionmark\@gobble

```

```

2876 \let\subsectionmark\@gobble
2877 }%
2878 \def\@runningtitle{\@shorttitle}%
2879 \renewenvironment{titlepage}{%
2880 \let\wastwocol@sw\twocolumn@sw
2881 \onecolumngrid
2882 \newpage
2883 \thispagestyle{titlepage}%
2884 \c@page\z@% article sets this to one not zero???
2885 }{%
2886 \wastwocol@sw{\twocolumngrid}{\newpage}%
2887 }%
2888 \let\@fnsymbol@latex\@fnsymbol
2889 \let\@fnsymbol\@alph
2890 \def\adjust@abstractwidth{%
2891 \parindent1em\relax
2892 \advance\leftskip.5in\relax
2893 \@totalleftmargin\leftskip
2894 \@afterheading\@afterindentfalse
2895 }%
2896 \def\frontmatter@abstractheading{}%
2897 \def\frontmatter@abstractfont{%
2898 \adjust@abstractwidth
2899 }%
2900 \appdef\setup@hook{%
2901 \preprintsty@sw{%
2902 \@booleantrue\titlepage@sw
2903 \let\section\section@preprintsty
2904 \let\subsection\subsection@preprintsty
2905 \let\subsubsection\subsubsection@preprintsty
2906 }{}}%
2907 }%
2908 \def\frontmatter@@indent{%
2909 \skip@\@flushglue
2910 \@flushglue\z@ plus.3\hsize\relax
2911 \raggedright
2912 \advance\leftskip.5in\relax
2913 \@totalleftmargin\leftskip
2914 \@flushglue\skip@
2915 }%
2916 \def\frontmatter@authorformat{%
2917 \frontmatter@@indent
2918 \sffamily
2919 }%
2920 \renewcommand*\email[1][Electronic mail: ]{\begingroup\sanitize@url\@email{#1}}%
2921 \def\frontmatter@above@affilgroup{%
2922 }%
2923 \def\frontmatter@above@affiliation@script{%
2924 \frontmatter@@indent
2925 }%

```

```

2926 \def\frontmatter@above@affiliation{%
2927 }%
2928 \def\frontmatter@affiliationfont{%
2929 \frontmatter@@indent
2930 \preprintsty@sw{}\small}%
2931 \it
2932 }%
2933 \def\frontmatter@collaboration@above{%
2934 }%
2935 \def\frontmatter@setup{%
2936 \normalfont
2937 }%
2938 \def\frontmatter@title@above{\addvspace{6\p}}%
2939 \def\frontmatter@title@format{%
2940 \preprintsty@sw{}\Large}%
2941 \sffamily
2942 \bfseries
2943 \raggedright
2944 \parskip\z@skip
2945 }%
2946 \def\frontmatter@title@below{\addvspace{3\p}}%
2947 \def\@author@parskip{3\p}%
2948 \@booleantrue\altaffilletter@sw
2949 \def\frontmatter@makefnmark{%
2950 \@textsuperscript{%
2951 \normalfont\@thefnmark%(
2952 )%
2953 }%
2954 }%
2955 \def\frontmatter@authorbelow{%
2956 \addvspace{3\p}%
2957 }%
2958 \let\affil@cutoff\tw@
2959 \def\frontmatter@RRAP@format{%
2960 \addvspace{5\p}%
2961 \small
2962 \raggedright
2963 \advance\leftskip.5in\relax
2964 \@totalleftmargin\leftskip
2965 \everypar{%
2966 \hbox\bgroup(\@gobble@leavemode@uppercase%)
2967 }%
2968 \def\par{%
2969 \@ifvmode{}\%(
2970 \unskip)\egroup\@par
2971 }%
2972 }%
2973 }%
2974 \def\punct@RRAP{;\egroup\ \hbox\bgroup}%
2975 \def\@gobble@leavemode@uppercase#1#2{\expandafter\MakeTextUppercase}%

```



```

2976 \def\frontmatter@PACS@format{%
2977     \addvspace{11\p@}%
2978     \adjust@abstractwidth
2979     \parskip\z@skip
2980     \samepage
2981 }%
2982 \def\frontmatter@keys@format{%
2983     \adjust@abstractwidth
2984     \samepage
2985 }%
2986 \def\ps@titlepage{%
2987     \def\@oddhead{%
2988         \@runningtitle
2989         \hfill
2990         \produce@preprints\@preprint
2991     }%
2992     \let\@evenhead\@oddhead
2993     \def\@oddfoot{%
2994         \hb@xt@\z@{\byrevtex\hss}%
2995         \hfil
2996         \preprintsty@sw{\thepage}{}%
2997         \quad\checkindate
2998         \hfil
2999     }%
3000     \let\@evenfoot\@oddfoot
3001 }%
3002 \def\byrevtex{\byrevtex@sw{Typeset by REV\TeX and AIP}{}}%
3003 \def\produce@preprints#1{%
3004     \preprint@sw{%
3005         \vtop to \z@{%
3006             \def\baselinestretch{1}%
3007             \small
3008             \let\preprint\preprint@count
3009             \count@\z@#1\@ifnum{\count@>\tw@}{%
3010                 \hbox{%
3011                     \let\preprint\preprint@hlist
3012                     #1\setbox\z@\lastbox
3013                 }%
3014             }{%
3015                 \let\preprint\preprint@cr
3016                 \halign{\hfil##\cr#1\cr}%
3017                 \par
3018                 \vss
3019             }%
3020         }%
3021     }{}%
3022 }%
3023 \def\preprint@cr#1{#1\cr}%
3024 \def\preprint@count#1{\advance\count@\@ne}%
3025 \def\preprint@hlist#1{#1\hbox{, }}%

```

```

3026 \newenvironment{Lead@inParagraph}{%
3027 \par
3028 \bfseries
3029 \@afterheading\@afterindentfalse
3030 }{%
3031 \par
3032 \hb@xt@\hsize{\hfil\leaders\hrule\hfil\leaders\hrule\hfil\hfil}%
3033 }%
3034 \appdef\frontmatter@init{%
3035 \let@environment{quotation@ltx}{quotation}%
3036 \let@environment{quotation}{Lead@inParagraph}%
3037 }%
3038 \appdef\@startsection@hook{%
3039 \let@environment{quotation}{quotation@ltx}%
3040 }%
3041 \def\@secntformat#1{\csname the#1\endcsname.\quad}%
3042 \def\@hang@from#1#2#3{#1#2#3}%
3043 \def\section{%
3044 \@startsection
3045 {section}%
3046 {1}%
3047 {\z@}%
3048 {0.8cm \@plus1ex \@minus .2ex}%
3049 {0.5cm}%
3050 {%
3051 \normalfont
3052 \small
3053 \sffamily
3054 \bfseries
3055 \raggedright
3056 }%
3057 }%
3058 \def\@hangfrom@section#1#2#3{\@hangfrom{#1#2}\MakeTextUppercase{#3}}%
3059 \def\@hangfroms@section#1#2#3{\@hangfrom{#1#2}\MakeTextUppercase{#2}}%
3060 \def\subsection{%
3061 \@startsection
3062 {subsection}%
3063 {2}%
3064 {\z@}%
3065 {.8cm \@plus1ex \@minus .2ex}%
3066 {.5cm}%
3067 {%
3068 \normalfont
3069 \small
3070 \sffamily
3071 \bfseries
3072 \raggedright
3073 }%
3074 }%
3075 \def\subsubsection{%

```

```

3076 \startsection
3077 {subsubsection}%
3078 {3}%
3079 {\z@}%
3080 {.8cm \@plus1ex \@minus .2ex}%
3081 {.5cm}%
3082 {%
3083 \normalfont
3084 \small
3085 \sffamily
3086 \bfseries
3087 \itshape
3088 \raggedright
3089 }%
3090 }%
3091 \def\paragraph{%
3092 \startsection
3093 {paragraph}%
3094 {4}%
3095 {\parindent}%
3096 {\z@}%
3097 {-1em}%
3098 {\normalfont\normalsize\itshape}%
3099 }%
3100 \def\subparagraph{%
3101 \startsection
3102 {subparagraph}%
3103 {5}%
3104 {\parindent}%
3105 {3.25ex \@plus1ex \@minus .2ex}%
3106 {-1em}%
3107 {\normalfont\normalsize\bfseries}%
3108 }%
3109 \def\section@preprintsty{%
3110 \startsection
3111 {section}%
3112 {1}%
3113 {\z@}%
3114 {0.8cm \@plus1ex \@minus .2ex}%
3115 {0.5cm}%
3116 {%
3117 \normalfont
3118 \bfseries
3119 \raggedright
3120 }%
3121 }%
3122 \def\subsection@preprintsty{%
3123 \startsection
3124 {subsection}%
3125 {2}%

```

```

3126     {\z@}%
3127     {.8cm \@plus1ex \@minus .2ex}%
3128     {.5cm}%
3129     {%
3130         \normalfont
3131         \bfseries
3132         \raggedright
3133     }%
3134 }%
3135 \def\subsubsection@preprintsty{%
3136     \@startsection
3137     {subsubsection}%
3138     {3}%
3139     {\z@}%
3140     {.8cm \@plus1ex \@minus .2ex}%
3141     {.5cm}%
3142     {%
3143         \normalfont
3144         \itshape\bfseries
3145         \raggedright
3146     }%
3147 }%
3148 \let\frontmatter@footnote@produce\frontmatter@footnote@produce@footnote
3149 \def\@pnumwidth{1.55em}
3150 \def\@tocrmarg {2.55em}
3151 \def\dotsep{2}
3152 \def\ltxu@dotsep{4.5pt}
3153 \setcounter{tocdepth}{3}
3154 \def\tableofcontents{%
3155     \addtocontents{toc}{\string\tocdepth@munge}%
3156     \print@toc{toc}%
3157     \addtocontents{toc}{\string\tocdepth@restore}%
3158 }%
3159 \def\tocdepth@munge{%
3160     \let\l@section@saved\l@section
3161     \let\l@section@gobble@tw@
3162 }%
3163 \def\@gobble@tw@#1#2{%
3164 \def\tocdepth@restore{%
3165     \let\l@section\l@section@saved
3166 }%
3167 \def\l@part#1#2{\addpenalty{\@secpenalty}%
3168 \begingroup
3169     \set@tocdim@pagenum{#2}%
3170     \parindent \z@
3171     \rightskip\tocleft@pagenum plus 1fil\relax
3172     \skip@{\parfillskip\parfillskip\z@
3173     \addvspace{2.25em plus\p@}%
3174     \large \bf %
3175     \leavevmode\ignorespaces#1\unskip\nobreak\hskip\skip@

```

```

3176 \hb@xt@\rightskip{\hfil\unhbox\z@}\hskip-\rightskip\hskip\z@skip
3177 \par
3178 \nobreak %
3179 \endgroup
3180 }%
3181 \def\tocleft@{\z@}%
3182 \def\tocdim@min{5\p@}%
3183 \def\l@section{%
3184 \l@sections{section}% Implicit #3#4
3185 }%
3186 \def\l@f@section{%
3187 \addpenalty{\@secpenalty}%
3188 \addvspace{1.0em plus\p@}%
3189 \bf
3190 }%
3191 \def\l@subsection{%
3192 \l@sections{section}{subsection}% Implicit #3#4
3193 }%
3194 \def\l@subsubsection{%
3195 \l@sections{subsection}{subsubsection}% Implicit #3#4
3196 }%
3197 \def\l@paragraph#1#2{%
3198 \def\l@subparagraph#1#2{%
3199 \let\toc@pre\toc@pre@auto
3200 \let\toc@post\toc@post@auto
3201 \def\listoffigures{\print@toc{lof}}%
3202 \def\l@figure{\@dottedtocline{1}{1.5em}{2.3em}}
3203 \def\listoftables{\print@toc{lot}}%
3204 \let\l@table\l@figure
3205 \@booleanfalse\raggedcolumn@sw
3206 \def\tableleft@skip@float{\z@ plus\hsize}%
3207 \def\tabmid@skip@float{\@flushglue}%
3208 \def\tabright@skip@float{\z@ plus\hsize}%
3209 \def\array@row@pre@float{\hline\hline\noalign{\vskip\doublerulesep}}%
3210 \def\array@row@pst@float{\noalign{\vskip\doublerulesep}\hline\hline}%
3211 \def\@makefnmark#1{%
3212 \def\baselinestretch{1}%
3213 \leftskip1em%
3214 \parindent1em%
3215 \noindent
3216 \nobreak\hskip-\leftskip
3217 \hb@xt@\leftskip{%
3218 \hss\@makefnmark\ %
3219 }%
3220 #1%
3221 \par
3222 }%
3223 \prepdef\appendix{%
3224 \par
3225 \let\@hangfrom@section\@hangfrom@appendix

```

```

3226 \let\@sectioncntformat\@appendixcntformat
3227 }%
3228 \def\@hangfrom@appendix#1#2#3{%
3229   #1%
3230   \@ifempty{#2}{%
3231     #3%
3232   }{%
3233     #2\@ifempty{#3}{\ : \ #3}%
3234   }%
3235 }%
3236 \def\@hangfroms@appendix#1#2{%
3237   #1#2%
3238 }%
3239 \def\@appendixcntformat#1{\appendixname\ \csname the#1\endcsname}%
3240 \def\pre@bibdata{\jobname\bibdata@app}%
3241 \def\refname{References}%
3242 \def\rtx@bibsection{%
3243   \@ifxempty\refname{%
3244     \par\vspace{6\p@ plus 6\p@}%
3245   }{%
3246     \expandafter\section\expandafter*\expandafter{\refname}%
3247     \@nobreaktrue
3248   }%
3249 }%
3250 \let\bibpreamble\@empty
3251 \appdef\setup@hook{%
3252   \bibsep\z@\relax
3253 }%
3254 \def\newblock{\ }%
3255 \appdef\setup@hook{%
3256   \def\bibfont{%
3257     \preprintsty@sw{\footnotesize}%
3258     \@clubpenalty\clubpenalty
3259     \labelsep\z@
3260   }%
3261 }%
3262 \let\place@bibnumber\place@bibnumber@sup
3263 \newenvironment{theindex}{%
3264   \columnseprule \z@
3265   \columnsep 35\p@
3266   \c@secnumdepth-\maxdimen
3267   \onecolumngrid@push
3268   \section{\indexname}%
3269   \thispagestyle{plain}%
3270   \parindent\z@
3271   \parskip\z@ plus.3\p@\relax
3272   \let\item\@idxitem
3273   \onecolumngrid@pop
3274 }{%
3275 }%

```

```

3276 \def\@idxitem{\par\hangindent 40\p@}
3277 \def\subitem{\par\hangindent 40\p@ \hspace*{20\p@}}
3278 \def\subsubitem{\par\hangindent 40\p@ \hspace*{30\p@}}
3279 \def\indexspace{\par \vskip 10\p@ plus5\p@ minus3\p@\relax}
3280 \expandafter\def\csname rtx@sor10pt\endcsname{%% TeXSupport: aip
3281 \let\@currname@class\@currname
3282 \def\@currname{aps10pt\substyle@post}%
3283 \class@info{Reading file \@currname.\substyle@ext}%
3284 \input{\@currname.\substyle@ext}%
3285 \let\@currname\@currname@class
3286 \class@info{Overriding 10pt}%
3287 \sorreprint
3288 }%
3289 \expandafter\def\csname rtx@sor11pt\endcsname{\csname rtx@sor12pt\endcsname}%
3290 \expandafter\def\csname rtx@sor12pt\endcsname{%
3291 \let\@currname@class\@currname
3292 \def\@currname{aps12pt\substyle@post}%
3293 \class@info{Reading file \@currname.\substyle@ext}%
3294 \input{\@currname.\substyle@ext}%
3295 \let\@currname\@currname@class
3296 \class@info{Overriding 12pt}%
3297 \sorpreprint
3298 }%
3299 \def\today{%
3300 \number\day\space
3301 \ifcase\month
3302 \or January\or February\or March\or April\or May\or June%
3303 \or July\or August\or September\or October\or November\or December%
3304 \fi\space
3305 \number\year
3306 }%
3307 \clo@superscriptaddress
3308 \def\@journal@default{cha}%
3309 \def\@pointsize@default{12}%
3310 \@booleanfalse\pagerestrict@sw%
3311 %%
3312 \def\rtx@sorjor{%
3313 \typeout{Using journal substyle \@journal.}%
3314 \@booleantrue\authoryear@sw%
3315 \@booleantrue\twoside@sw\@mparswitchfalse%
3316 }%
3317 %%
3318 \@booleantrue\footinbib@sw
3319 \let\old@place@bibnumber\place@bibnumber
3320 \let\place@bibnumber\place@bibnumber@sup
3321 \appdef\setup@hook{%
3322 \authoryear@sw%
3323 \sor@jtitx@sw%
3324 \def\@bibstyle{aipauth\substyle@post}%
3325 }{%

```

```

3326 \def\@bibstyle{aipauth\substyle@post}%
3327 }%
3328 \authornum@sw{%
3329 \bibpunct{}{}{,}{s}{}{\textsuperscript{,}}%
3330 \let\onlinecite\rev@citealpnum
3331 }{%
3332 \bibhang10\p@
3333 \bibpunct{(%}
3334          }{%(
3335          )}{; }{a}{,}{,}%
3336 \@booleanfalse\footinbib@sw
3337 \let\NAT@mcite\@ne
3338 \let\NAT@sort\z@
3339 \def\NAT@cmprs{\z@}%
3340 \let\NAT@def@citea\rtx@def@citea
3341 \let\NAT@def@citea@close\rtx@def@citea@close
3342 }%
3343 }{%
3344 \sor@jtitx@sw{%
3345 \def\@bibstyle{sornum\substyle@post}%
3346 }{%
3347 \def\@bibstyle{sornum\substyle@post}%
3348 }%
3349 \bibpunct{}{}{,}{s}{}{\textsuperscript{,}}%
3350 \let\onlinecite\rev@citealpnum
3351 }%
3352 }%
3353 \def\make@footnote@endnote{%
3354 \footinbib@sw{%
3355 \authoryear@sw{\authornum@sw{\false@sw}{\true@sw}}{\false@sw}%
3356 }{%
3357 \ltx@footnote@push
3358 \def\thempfn{Note\thefootnote}%
3359 \let\ltx@footmark\rev@citemark
3360 \let\ltx@foottext\rev@endtext
3361 \appdef\class@enddocumenthook{\auto@bib}%
3362 \let\printendnotes\relax
3363 }%
3364 }{}%
3365 }%
3366 \def\sorreprint{%
3367 }%
3368 \def\sorpreprint{%
3369 }%
3370 %%
3371 \xdef\t@talAU{0}% TeXSupport
3372 \def\frontmatter@author@produce@script{%
3373 \begingroup
3374 \let\@author@present\@author@present@script
3375 \frontmatterverbose@sw{\typeout{string\frontmatter@author@produce@script:}}\say\@AAC@list\s

```



```

3376 \let\AU@temp\@empty
3377 \@tempcnta\z@
3378 \let\AF@opr \@gobble
3379 \def\AU@opr{\@author@count\@tempcnta}%
3380 \def\CO@opr{\@collaboration@count\AU@temp\@tempcnta}%
3381 \@AAC@list%
3382 \xdef\t@talAU{\the\@tempcnta}% TeXSupport
3383 \expandafter\CO@opr\@author@cleared
3384 \begingroup
3385 \frontmatter@authorformat
3386 \let\AF@opr \@affilID@def
3387 \let\AU@opr \@author@present
3388 \def\CO@opr{\@collaboration@present\AU@temp}%
3389 \set@listcomma@list\AU@temp
3390 \@AAC@list
3391 \unskip\unskip
3392 \par
3393 \endgroup
3394 \begingroup
3395 \frontmatter@above@affiliation@script
3396 \let\AFF@opr \@affil@script
3397 \@AFF@list
3398 \frontmatter@footnote@produce
3399 \par
3400 \endgroup
3401 \endgroup
3402 }%
3403 \def\doauthor#1#2#3{% TeXSupport
3404 \ignorespaces#1\unskip\@listcomma
3405 \begingroup
3406 \ifnum\t@talAU=1\else\ifnum\c@affil=\@ne\relax\else#3\fi\fi% TeXSupport
3407 \@ifempty{#2}{\endgroup}{\}\}\{\endgroup{\ifnum\t@talAU=1\else\ifnum\c@affil=\@ne\relax\else\c
3408 \space \@listand
3409 }%
3410 %%
3411 \appdef\rtx@require@packages{%
3412 %%
3413 %%
3414 %% Journal of Rheology (jor)
3415 %%
3416 \def\jnl@jor{jor}%
3417 \preprintsty@sw{%
3418 {\ifx\@journal\jnl@jor%
3419 \typeout{SOR Info: \@journal\space journal style Single column, 2013/10/24}%
3420 \@booleanfalse\twocolumn@sw%
3421 \appdef\setup@hook{%
3422 \twoside@sw{%
3423 \oddsidemargin 28pt%
3424 \evensidemargin 28pt%
3425 \marginparwidth 30pt%

```

```

3426 }{%
3427 \oddsidemargin 28pt
3428 \evensidemargin 0pt
3429 \marginparwidth 44pt
3430 }%
3431 }%
3432 \marginparsep 10pt
3433 \topmargin -17pt
3434 \headheight 12pt
3435 \headsep 25pt
3436 \topskip 10pt
3437 \splittopskip\topskip
3438 \footskip 30pt
3439 \textheight=53.5pc
3440 \textwidth 33pc
3441 \columnsep 10pt
3442 \def\title@column#1{%
3443 \minipagefootnote@init
3444 \begingroup
3445 \let\@footnotetext\frontmatter@footnotetext
3446 \ltx@no@footnote
3447 #1%
3448 \endgroup
3449 \minipagefootnote@foot
3450 }%
3451 \def\frontmatter@title@format{%
3452 \preprintsty@sw{}\Large}%
3453 \sffamily%
3454 \bfseries%
3455 \leftskip0pt plus1fill%
3456 \rightskip0pt plus1fill%
3457 \parindent\z@%
3458 %% \raggedright%
3459 \parskip\z@skip%
3460 }%
3461 \def\frontmatter@@indent{%
3462 \skip@\@flushglue
3463 \@flushglue\z@ plus.3\hsize\relax
3464 \leftskip0pt plus1fill%
3465 \rightskip0pt plus1fill%
3466 \parindent\z@%
3467 %% \raggedright
3468 %% \advance\leftskip.5in\relax
3469 \@totalleftmargin\leftskip
3470 \@flushglue\skip@
3471 }%
3472 %% \def\frontmatter@author@format{%
3473 %% \frontmatter@@indent
3474 %% \sffamily
3475 %% }%

```

```

3476 \def\frontmatter@RRAP@format{%
3477   \addvspace{5\p@}%
3478   \small
3479   \leftskip0pt plus1fill%
3480   \rightskip0pt plus1fill%
3481   \parindent\z@%
3482   %%\raggedright
3483   %%\advance\leftskip.5in\relax
3484   \@totalleftmargin\leftskip
3485   \everypar{%
3486     \hbox\bgroup(\@gobble@leavemode@uppercase%)
3487   }%
3488   \def\par{%
3489     \@ifvmode{}\{%(
3490       \unskip)\egroup\@@par
3491     }%
3492   }%
3493 }%
3494 \def\frontmatter@abstractfont{}%
3495 \def\frontmatter@abstractwidth{\textwidth}
3496 \def\abstractname{Synopsis}
3497 \def\frontmatter@abstractheading{%
3498   \begingroup
3499   \centering\large
3500   {\bfseries\abstractname}
3501   \par\vskip.25\baselineskip
3502   \endgroup
3503 }%
3504 \appdef\setup@hook{%
3505   \preprintsty@sw{}\{%(
3506     \let\refname\old@refname%\@empty
3507   }%
3508 }%
3509 %
3510 \def\ps@article{%
3511   \def\@evenhead{\let\\\heading@cr\sffamily\thepage\quad\checkindate\hfil\@runningtitle\hfil}%
3512   \def\@oddhead{\let\\\heading@cr\hfil\sffamily\@runningtitle\hfil\checkindate\quad\thepage}%
3513   \def\@oddfoot{}%
3514   \def\@evenfoot{}%
3515   \let\@mkboth\@gobbletwo
3516   \let\sectionmark\@gobble
3517   \let\subsectionmark\@gobble
3518 }%
3519 \def\@make@capt@title#1#2{%
3520   \@ifx@empty\float@link{\@firstofone}\{expandafter\href\expandafter{\float@link}\}%
3521   {\bfseries#1}\caption@fignum@sep#2%
3522 }%
3523 \def\@caption@fignum@sep{\bfseries.} }%
3524 %%
3525 \fi%

```

```
3526 }  
3527 }%  
3528 %</sor>
```

Here ends the programmer's documentation.