The **geophysics** class for writing *Geophysics* papers*

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Abstract

This package provides a LATEX2e class for writing *Geophysics*-style papers.

1 Introduction

LATEX is a powerful document typesetting system. The new `geophysics.cls` package conforms to the LATEX2e standard.

2 Usage

2.1 Options

Several options control the paper appearance.

manuscript   The `manuscript` option produces a manuscript-style paper ready for submission to *Geophysics*. The opposite (and default) is the `paper` option, which produces

paper

a report-style paper.

onecolumn   The `twocolumn` option...

twocolumn

2.2 Appearance

abstract   The `abstract` environment...

The following macros are defined in the package:

2.3 SEG-style vectors and tensors

\vector   `\vector{⟨v⟩}` is used for vector variables in equations. It puts the argument in boldface and converts it to lowercase.

\tensor   `\tensor{⟨t⟩}` is used for matrix variables in equations. It puts the argument in boldface and converts it to uppercase.

---

*This document corresponds to **geophysics.cls** v3.0, dated 2007/02/14.

2.4 Figures and tables

\inputdir   \inputdir{⟨*dirname*⟩} specifies the top-level directory (current directory by default).

\figdir   \figdir stores the name of the figure directory relative to the directory specified by \inputdir. \figdir is "." (the current directory) by default. You can change it with \renewcommand{\figdir}{⟨*dirname*⟩}.

\plot   \plot{⟨*filename*⟩}{⟨*size*⟩}{⟨*caption*⟩} inserts a figure from file ⟨*filename*⟩ (specified relative to figdir) with caption ⟨*caption*⟩. The ⟨*size*⟩ specification corresponds to the conventions of the graphicx package. Examples:

- width=\textwidth (for scaling the figure and preserving the aspect ratio)

- width=3in,height=0.5\textheight (for scaling the figure anisotropically)

You can refer to the figure number with \ref{fig:⟨*filename*⟩}.

\sideplot   \sideplot{⟨*filename*⟩}{⟨*size*⟩}{⟨*caption*⟩} ...

\tabl   The \tabl{⟨*label*⟩}{⟨*caption*⟩}{⟨*table*⟩} macro is used to manage tables. In the manuscript mode, the defined ⟨*table*⟩ will appear at the end of the paper, and its caption will be added to the list of tables. You can refer to the table number with \ref{tbl:⟨*filename*⟩}.

3   Implementation

Load ifthen package for conditionals.

```
1 \RequirePackage{ifthen}
```

Different types: can prepare a manuscript or a paper.

```
2 \newboolean{@manu}
3 \setboolean{@manu}{false}
4 \DeclareOption{manuscript}{\setboolean{@manu}{true}}
5 \DeclareOption{paper}{\setboolean{@manu}{false}}
```

Catch the twocolumn option to implement it internally.

```
6 \newboolean{@twoc}
7 \setboolean{@twoc}{false}
8 \DeclareOption{twocolumn}{\setboolean{@twoc}{true}}
9 \DeclareOption{onecolumn}{\setboolean{@twoc}{false}}
```

A short paper option

```
10 \newboolean{@shrt}
11 \setboolean{@shrt}{false}
12 \DeclareOption{short}{\setboolean{@shrt}{true}}
13 \DeclareOption{long}{\setboolean{@shrt}{false}}
14 \newcommand{\shortpaper}{\setboolean{@shrt}{true}}
15 \newcommand{\longpaper}{\setboolean{@shrt}{false}}
```

An endfloat option

```
16 \newboolean{@eflt}
17 \setboolean{@eflt}{false}
```

```
18 \DeclareOption{endfloat}{\setboolean{@eflt}{true}}
19 \DeclareOption{noendfloat}{\setboolean{@eflt}{false}}
```

A revision option

```
20 \newboolean{@revd}
21 \setboolean{@revd}{false}
22 \DeclareOption{revised}{\setboolean{@revd}{true}}
23 \DeclareOption{new}{\setboolean{@revd}{false}}
```

Reproducible research option

```
24 \newboolean{@repr}
25 \setboolean{@repr}{false}
26 \DeclareOption{reproduce}{\setboolean{@repr}{true}}
27 \DeclareOption{nonreprod}{\setboolean{@repr}{false}}
```

Our package is a derivative of the standard `article` class.

```
28 \DeclareOption*{\PassOptionsToClass{\CurrentOption}{article}}
```

We will use onecolumn paper and 11pt fonts by default.

```
29 \ExecuteOptions{paper,onecolumn,long,noendfloat,new,nonreprod}
30 \ProcessOptions*
31 \ifthenelse{\boolean{@twoc}}{%
32   \LoadClass[9pt]{article}}{%
33   \LoadClass[11pt]{article}}
```

Load SEG style package

```
34 \RequirePackage{seg}
35 \ifthenelse{\boolean{@repr}}{\RequirePackage{attachfile2}}{}
```

Load rotating package to support sidewaystabl

```
36 \RequirePackage{rotating}
```

3.1   Figures and Tables

Either load the endfloat package or define special plotting commands

```
37 \ifthenelse{\boolean{@eflt}}{
38   \ifthenelse{\boolean{@manu}}{\RequirePackage{endfloat}}{}
39 }{
```

`\figdir`   `\figdir` is a variable. It will need to be redefined to specify the figure directory.

```
40 \ifthenelse{\boolean{@manu}}{
41   \renewcommand{\inputdir}[1]{\AtEndDocument{\renewcommand{\@path}{#1}}}}{}
42 \providecommand{\figdir}{.}
43 \providecommand{\setfigdir}[1]{\renewcommand{\figdir}{#1}}
44 \providecommand{\fig@file}[1]{\@path/\figdir/#1}
```

Count figures.

```
45 \newcounter{@plots}
46 \setcounter{@plots}{0}
```

\plot   Define commands for figure inclusion.

   A button for reproducible research

```
47 \newcommand{\rr@button}[1]{\ifthenelse{\boolean{@repr}}{%
48 \IfFileExists{\@path/.rsfproj}{\setlength{\fboxsep}{0.5ex}%
49 \textattachfile[mimetype=text/plain,color=0 0 1]{\@path/SConstruct}{\fbox{\@path/\ #1}}%
50 }{%
51 \ifthenelse{\equal{\@path}{Math}}{\setlength{\fboxsep}{0.5ex}%
52 \textattachfile[mimetype=text/plain,color=1 0 1]{\@path/#1.ma}{\fbox{\@path/\ #1}}%
53 }{%
54 \ifthenelse{\equal{\@path}{Gnuplot}}{\setlength{\fboxsep}{0.5ex}%
55 \textattachfile[mimetype=text/plain,color=0 1 1]{\@path/#1.gp}{\fbox{\@path/\ #1}}%
56 }{%
57 \ifthenelse{\equal{\@path}{Sage}}{\setlength{\fboxsep}{0.5ex}%
58 \textattachfile[mimetype=text/plain,color=1 0 1]{\@path/#1.sage}{\fbox{\@path/\ #1}}%
59 }{%
60 \ifthenelse{\equal{\@path}{Matlab}}{\setlength{\fboxsep}{0.5ex}%
61 \textattachfile[mimetype=text/plain,color=1 0 1]{\@path/#1.ml}{\fbox{\@path/\ #1}}%
62 }{%
63 \ifthenelse{\equal{\@path}{Pylab}}{\setlength{\fboxsep}{0.5ex}%
64 \textattachfile[mimetype=text/plain,color=1 0 1]{\@path/#1.py}{\fbox{\@path/\ #1}}%
65 }{%
66 \ifthenelse{\equal{\@path}{XFig}}{\setlength{\fboxsep}{0.5ex}%
67 \textattachfile[mimetype=text/plain,color=0 1 1]{\@path/#1.fig}{\fbox{\@path/\ #1}}%
68 }{%
69 \ifthenelse{\equal{\@path}{Tikz}}{\setlength{\fboxsep}{0.5ex}%
70 \textattachfile[mimetype=text/plain,color=0 1 1]{\@path/#1.tex}{\fbox{\@path/\ #1}}%
71 }{%
72 }}}}}}}}%
73 {}}
```

Plot commands.

```
74 \ifthenelse{\boolean{@manu}}
```

In manuscripts, each figure appears on a separate page at the end of the paper.

```
75 {\newcommand{\fullplot}[4][X]{
76    \stepcounter{@plots}
77    \AtEndDocument{
78      \begin{figure}[p]
79        \centering
80        \includegraphics[#3]{\fig@file{#2}}
81        \caption [#4]{#4 \\
82  \textbf{\seg@lhead} --
83  \ifthenelse{\equal{\ms@number}{Manuscript}}{}{\ms@number}}
84 \label{fig:\@path-#2}
85        \label{fig:#2}
86      \end{figure}\clearpage
87    }}
88    \def\plot{\@ifstar{\fullplot}{\fullplot}}
89    \setlength\abovecaptionskip{50\p@}
90 % Deprecated code for suppressing captions.
```

```
91 %  \long\def\@makecaption#1#2{%
92 %    \vskip\abovecaptionskip
93 %    \sbox\@tempboxa{#1.}%
94 %    \ifdim \wd\@tempboxa >\hsize
95 %    #1.\par
96 %    \else
97 %    \global \@minipagefalse
98 %    \hb@xt@\hsize{\hfil\box\@tempboxa\hfil}%
99 %    \fi
100 %    \vskip\belowcaptionskip}
101 }
```

In papers, an optional argument places the figure.

```
102 {\newcommand{\fullplot}[4][htbp]{%
103     \begin{figure*}[#1]
104       \centering
105       \includegraphics[#3]{\fig@file{#2}}
106       \caption[#4]{#4 \rr@button{#2}}
107       \label{fig:\@path-#2}
108       \label{fig:#2}
109     \end{figure*}
110   }}
```

\sideplot   Unless in manuscript mode, \sideplot puts figures on the side

```
111 \ifthenelse{\boolean{@manu}}
```

In manuscripts, there is no difference.

```
112 {\newcommand{\sideplot}[4][X]{\plot[#1]{#2}{#3}{#4}}}
113 %In papers, an optional argument places the figure. The page is split in half
114 %to put the figure on the side.
115 %    \begin{macrocode}
116 {\newcommand{\sideplot}[4][htbp]{%
117     \ifthenelse{\boolean{@twoc}}{%
118       \begin{figure}[#1]
119         \centering
120         \includegraphics[#3]{\fig@file{#2}}
121         \caption{#4}
122 \label{fig:\@path-#2}
123         \label{fig:#2}
124       \end{figure}
125     }{%
126       \begin{figure*}[#1]
127         \makebox{%
128           \begin{minipage}{0.4\textwidth}
129             \caption[#4]{#4 \rr@button{#2}}
130     \label{fig:\@path-#2}
131             \label{fig:#2}
132           \end{minipage}
133           \hfill
134           \begin{minipage}{0.6\textwidth}
```

```
135            \centering
136            \includegraphics[#3]{\fig@file{#2}}
137          \end{minipage}}
138        \end{figure*}
139      }
140    }
141    \ifthenelse{\boolean{@twoc}}{%
142      \def\plot{\@ifstar{\fullplot}{\sideplot}}}{%
143      \def\plot{\@ifstar{\fullplot}{\fullplot}}}
144 }
```

Multiple plots from different files in one figure[1].

\multiplot

```
145 \RequirePackage{subfig}
146 \def\next@item#1,#2?{#1}
147 \def\rest@item#1,#2?{#2}
148 \newcounter{sub@fig}
149 \ifthenelse{\boolean{@manu}}

150 {\newcommand{\seg@multiplot}[5][X]{
151      \stepcounter{@plots}
152      \AtEndDocument{
153        \begin{figure}[p]
154          \centering
155          \setcounter{sub@fig}{0}
156          \edef\list@i{#3}
157          \loop
158          \edef\item@i{\expandafter\next@item\list@i,\empty?}
159          \edef\list@i{\expandafter\rest@item\list@i,\empty?}
160          \ifx\item@i\empty
161          \else
162          \stepcounter{sub@fig}
163          \subfloat[]{\includegraphics[#4]{\fig@file{\item@i}}%
164    \label{fig:@path-\item@i}
165    \label{fig:\item@i}}
166          \ifthenelse{\value{sub@fig} = #2}{\\ \setcounter{sub@fig}{0}}{}
167          \repeat
168          \caption[#5]{#5 \\
169    \textbf{\seg@lhead} --
170    \ifthenelse{\equal{\ms@number}{Manuscript}}{}{\ms@number}}
171 \label{fig:@path-#3}
172          \label{fig:#3}
173        \end{figure}\clearpage
174 }}
175 \def\multiplot{\@ifstar{\seg@multiplot}{\seg@multiplot}}
176 }{%
177    \newcommand{\seg@fullmultiplot}[5][htbp]{
178      \begin{figure*}[#1]
```

[1] Thanks to Martin Karrennbach

```
179        \centering
180        \setcounter{sub@fig}{0}
181        \edef\list@i{#3}
182        \loop
183        \edef\item@i{\expandafter\next@item\list@i,\empty?}
184        \edef\list@i{\expandafter\rest@item\list@i,\empty?}
185        \ifx\item@i\empty
186        \else
187        \stepcounter{sub@fig}
188        \subfloat[]{\includegraphics[#4]{\fig@file{\item@i}}%
189 \label{fig:\@path-\item@i}
190           \label{fig:\item@i}}
191        \ifthenelse{\value{sub@fig} = #2}{\\ \setcounter{sub@fig}{0}}{}
192        \repeat
193        \caption[#5]{#5 \rr@button{#3}}
194        \label{fig:\@path-#3}
195        \label{fig:#3}
196     \end{figure*}
197  }
198  \newcommand{\seg@sidemultiplot}[5][htbp]{
199     \begin{figure}[#1]
200        \centering
201        \setcounter{sub@fig}{0}
202        \edef\list@i{#3}
203        \loop
204        \edef\item@i{\expandafter\next@item\list@i,\empty?}
205        \edef\list@i{\expandafter\rest@item\list@i,\empty?}
206        \ifx\item@i\empty
207        \else
208        \stepcounter{sub@fig}
209        \subfloat[]{\includegraphics[#4]{\fig@file{\item@i}}%
210 \label{fig:\@path-\item@i}
211           \label{fig:\item@i}}
212        \ifthenelse{\value{sub@fig} = #2}{\\ \setcounter{sub@fig}{0}}{}
213        \repeat
214        \caption[#5]{#5 \rr@button{#3}}
215        \label{fig:\@path-#3}
216        \label{fig:#3}
217     \end{figure}
218  }
219  \ifthenelse{\boolean{@twoc}}{%
220     \def\multiplot{\@ifstar{\seg@fullmultiplot}{\seg@sidemultiplot}}}{%
221     \def\multiplot{\@ifstar{\seg@fullmultiplot}{\seg@fullmultiplot}}}}
222 }
223 \renewcommand{\thesubfigure}{\alph{subfigure}}
```

Count tables.

```
224 \newcounter{@tabls}
225 \setcounter{@tabls}{0}
```

\tabl   Define the \tabl and \sidewaystabl macros for handling tables.

```
226 \ifthenelse{\boolean{@manu}}{
227   \providecommand{\tabl}[4][X]{
228     \stepcounter{@tabls}
229     \AtEndDocument{
230       \begin{table}[p]
231         #4
232         \caption{#3}
233         \label{tbl:#2}
234       \end{table}\clearpage
235     }
236   }
237   \providecommand{\sidewaystabl}[4][X]{
238     \stepcounter{@tabls}
239     \AtEndDocument{
240       \begin{sidewaystable}[p]
241         #4
242         \caption{#3}
243         \label{tbl:#2}
244       \end{sidewaystable}\clearpage
245     }
246   }
247 }{
248   \providecommand{\seg@sidetabl}[4][htbp]{
249     \begin{table}[#1]
250       #4
251       \caption{#3}
252       \label{tbl:#2}
253     \end{table}
254   }
255   \providecommand{\seg@fulltabl}[4][htbp]{
256     \begin{table*}[#1]
257       #4
258       \caption{#3}
259       \label{tbl:#2}
260     \end{table*}
261   }
262   \providecommand{\sidewaystabl}[4][htbp]{
263     \begin{sidewaystable}[#1]
264       #4
265       \caption{#3}
266       \label{tbl:#2}
267     \end{sidewaystable}
268   }
269   \def\tabl{\@ifstar{\seg@fulltabl}{\seg@sidetabl}}
270 }
```

Suppress page numbers from lists of figures

```
271 \renewcommand*{\l@figure}[2]{%
272   \setlength{\@tempdima}{2.3em}%
```

```
273    \noindent\hspace*{1.5em}#1\hfil\newline}
274 \let\l@table\l@figure
```
Redefine lists of figures and tables
```
275 \renewcommand\listoffigures{%
276    \section{\listfigurename
277      \@mkboth{\MakeUppercase\listfigurename}%
278      {\MakeUppercase\listfigurename}}%
279    \@starttoc{lof}%
280 }
281 \renewcommand\listoftables{%
282    \section{\listtablename
283      \@mkboth{\MakeUppercase\listtablename}%
284      {\MakeUppercase\listtablename}}%
285    \@starttoc{lot}%
286 }
```
List of figures and list of tables appear at the end of the document.
```
287 \AtEndDocument{
288    \ifthenelse{\value{@tabls} > 0}{\newpage\listoftables}{}
289    \ifthenelse{\value{@plots} > 0}{\newpage\listoffigures}{}
290 }}
```

3.2   Revision changes

In a revised paper, load the ulem package and make sure it does not alter the
emphasis commands. Also load the color package to change the text color.
```
291 \ifthenelse{\boolean{@revd}}{
292    \RequirePackage{color}%
293    \RequirePackage{ulem}%
294    \normalem
295 }{}
```
In a revised paper, changes are marked with \new and appear in red, and removed
parts are marked with \old and appear crossed out[2].
```
296 \DeclareRobustCommand{\new}[1]{%
297    \ifthenelse{\boolean{@revd}}{\textit{\textcolor{red}{#1}}}{#1}}
298 \DeclareRobustCommand{\old}[1]{\ifthenelse{\boolean{@revd}}{\textcolor{blue}{\sout{#1}}}{}}
```

3.3   References

Load the natbib package for natural-science-style citations.
```
299 \RequirePackage{natbib}
```
The following is natbib's default.
```
300 \bibpunct[,]{(}{)}{;}{a}{,}{,}
```
Redefine the reference section name.
```
301 \DeclareRobustCommand{\refname}{REFERENCES}
302 \ifthenelse{\boolean{@manu}}
```

---

[2]Thanks to Joerg Schleicher for the idea

In manuscripts, references appear at a separate page

```
303 {\renewcommand\bibsection{\newpage\section{\refname}}}
304 {\renewcommand\bibsection{\section{\refname}}}
```

For backward compatibility: shortcite refers to the year

```
305 \newcommand{\shortcite}[1]{\citeyearpar{#1}}
```

3.4   Page layout

Do double spacing for manuscripts.

```
306 \ifthenelse{\boolean{@manu}}{
307   \renewcommand{\baselinestretch}{2.0}
308 }{
309   \renewcommand{\baselinestretch}{1.0}
310 }
```

Specify page dimensions. *This should be adjusted for A4 paper format!*

```
311 \ifthenelse{\boolean{@twoc}}{%
312 \setlength\parindent{1em}
313 \setlength\headheight{12.5\p@}
314 \setlength\headsep    {11.9\p@}
315 \setlength\topskip    {3\p@}
316 \setlength\footskip{19pt}
317 \setlength\maxdepth{4\p@}
318 \setlength\@maxdepth\maxdepth
319 \setlength\textwidth{42pc}
320 \addtolength\textwidth{2em}
321 \newdimen\typeheight \typeheight55.5pc
322 \advance\typeheight-2.215pt
323 \setlength\textheight{\typeheight}
324 \addtolength\textheight{\headheight}
325 \addtolength\textheight{\headsep}
326 \setlength\columnsep{24pt}
327 \setlength\columnseprule{0\p@}
328 \setlength\oddsidemargin{-18pt}
329 \setlength\evensidemargin{-18pt}
330 \addtolength\oddsidemargin{-1em}
331 \addtolength\evensidemargin{-1em}
332 \setlength\marginparwidth {.75in}
333 \setlength\marginparsep {\z@}
334 \setlength\marginparpush{5\p@}
335 \setlength\topmargin{-29.5pt}
336 \addtolength{\topmargin}{-\headheight}
337 \addtolength{\topmargin}{-\headsep}
338 \setlength\footnotesep{5.65\p@}%{4pt}%
339 \setlength{\skip\footins}{12\p@ \@plus 2\p@}%
340 \setlength\floatsep    {16\p@ \@plus 2\p@ \@minus 2\p@}
341 \setlength\textfloatsep{20\p@ \@plus 2\p@ \@minus 4\p@}
342 \setlength\intextsep   {12\p@ \@plus 2\p@ \@minus 2\p@}
343 \setlength\dblfloatsep    {12\p@ \@plus 2\p@ \@minus 2\p@}
```

```
344 \setlength\dbltextfloatsep{20\p@ \@plus 2\p@ \@minus 4\p@}
345 \setlength\@fptop{0\p@ \@plus 1fil}
346 \setlength\@fpsep{8\p@ \@plus 2fil}
347 \setlength\@fpbot{0\p@ \@plus 1fil}
348 \setlength\@dblfptop{0\p@ \@plus 1fil}
349 \setlength\@dblfpsep{8\p@ \@plus 2fil}
350 \setlength\@dblfpbot{0\p@ \@plus 1fil}
351 \setlength\partopsep{2\p@ \@plus 1\p@ \@minus 1\p@}
352 \setlength\lineskip{\z@}%
353 \setlength\normallineskip{\z@}%
354 \setlength\parskip{0\p@}
355 \@lowpenalty   51
356 \@medpenalty  151
357 \@highpenalty 301
358 \setlength\leftmargini  {2.4em}
359 \setlength\leftmarginii  {2.2em}
360 \setlength\leftmarginiii {1.87em}
361 \setlength\leftmarginiv  {1.7em}
362 \setlength\leftmarginv  {.5em}
363 \setlength\leftmarginvi {.5em}
364 \setlength\leftmargin     {\leftmargini}
365 \setlength  \labelsep  {.5em}
366 \setlength  \labelwidth{\leftmargini}
367 \addtolength\labelwidth{-\labelsep}
368 \@beginparpenalty -\@lowpenalty
369 \@endparpenalty   -\@lowpenalty
370 \@itempenalty     -\@lowpenalty
371 }{%
372 \setlength{\textheight}{9in}
373 \setlength{\textwidth}{6in}
374 \setlength{\parskip}{1.5ex plus0.1ex minus0.1ex} % should be a *rubber* length
375 \setlength{\oddsidemargin}{.26in}
376 \setlength{\evensidemargin}{.26in}
377 \setlength{\topmargin}{-.51in}
378 \setlength{\textfloatsep}{30pt plus 3pt minus 6pt}
379 \setlength{\headsep}{0.5in}}
```

3.5   Section headings

Capitalize section headings and redefine their size from `\Large` to `\large` [3].

```
380 \let\seg@large\large
381 \let\seg@Large\Large
382 \renewcommand{\Large}{\protect\seg@large}
383 \let\seg@section\section
384 \let\seg@subsection\subsection
385 \newcommand{\segsection}{%
386 \@startsection {section}{1}{\z@}%
387 {-3.5ex \@plus -1ex \@minus -.2ex}%
```

---

[3]Thanks to Joerg Schleicher for the ifstar trick.

```
388 {1ex \@plus .2ex}%
389 {\centering%
390 \normalfont\ifthenelse{\boolean{@twoc}}{}{\Large}\bfseries\MakeUppercase}}
391 \newcommand{\segsubsubsection}{%
392 \@startsection{subsubsection}{3}{\z@}%
393 {-3.25ex\@plus -1ex \@minus -.2ex}%
394 {1.5ex \@plus .2ex}%
395 {\normalfont\normalsize\itshape}}
396 \newcommand{\seg@subsubsubsection}[2][]{%
397 \underline{#2}.--}
398 \def\section{\@ifstar{\segsection*}{\segsection*}}
399 \def\subsection{\@ifstar{\seg@subsection*}{\seg@subsection*}}
400 \def\subsubsection{\@ifstar{\segsubsubsection*}{\segsubsubsection*}}
401 \def\subsubsubsection{\@ifstar{\seg@subsubsubsection}{\seg@subsubsubsection}}
```

3.6 Manuscript number

`\ms` `\ms` defined the manuscript number

```
402 \newcommand{\ms@number}{Manuscript}
403 \newcommand{\ms}[1]{\renewcommand{\ms@number}{\textbf{#1}}}
```

3.7 Title and author

`\title` `\title` is redefined for consistency. It changes the internal `\seg@title`.

```
404 \newcommand{\geo@published}{Unknown}
405 \newcommand{\published}[1]{\renewcommand{\geo@published}{#1}}
406 \newcommand{\seg@title}{}
407 \newenvironment{geo@title}{%
408   \begin{minipage}{\textwidth}%
409     \bfseries\seg@Large\ifthenelse{\boolean{@twoc}}{\flushleft}{\centering}}
410       {\end{minipage}\vspace{.2in}}%
411 \renewcommand{\title}[1]{%
412   \renewcommand{\seg@title}{%
413     \noindent\begin{geo@title}\setlength{\parindent}{0em}\par%
414    {\smallskip #1\ifthenelse{\equal{\geo@published}{Unknown}}{}{\footnote{Published in \geo@pub
```

`\address` The `\address` macro will save the address in the internal `\seg@address`.

```
415 \providecommand{\seg@address}{}
416 \providecommand{\address}[1]{\renewcommand{\seg@address}{#1}}
```

`\author` Finally, everything goes to nd is stored in `\seg@author`.

```
417 \providecommand{\seg@author}{}
418 \renewcommand{\author}[1]{%
419   \renewcommand{\seg@author}{%
420     \ifthenelse{\boolean{@twoc}}{%
421       \seg@title \\
422       \begin{flushleft}
423 \Large #1
424       \end{flushleft}\vspace{0.2in}
```

```
425      }{%
426        \seg@title
427        \begin{center}
428          \ifthenelse{\boolean{@manu}}{%
429            \textbf{#1} \\
430            \emph{\seg@address}\ \\
431            (\today) \\
432    \ifthenelse{\equal{\ms@number}{Manuscript}}{}{\ms@number \\}
433    Running head: \textbf{\seg@rhead} \\
434          }{\textit{#1}\ifthenelse{\equal{\seg@email}{.}}{}{%
435            \footnote{\textbf{e-mail: }\seg@email}} \\ \
436          }
437        \end{center}
438      }}}
```

\maketitle   \maketitle is disabled

```
439 \renewcommand{\maketitle}{\ifthenelse{\boolean{@shrt}}{%
440    \ifthenelse{\boolean{@twoc}}{\twocolumn[\seg@author]}{\seg@author}}{}}
```

abstract   For manuscripts, the abstract environment is simply a section.

```
441 \ifthenelse{\boolean{@manu}}{
442 \renewenvironment{abstract}{\seg@author
443    \section{ABSTRACT}}{\newpage}
444 }
```

For papers, the abstract apears in a box.

```
445 {
446   \newsavebox{\seg@abstract}
447   \setlength{\fboxsep}{10pt}
448   \renewenvironment{abstract}{
449     \ifthenelse{\boolean{@twoc}}{%
450       \twocolumn[\vspace{1.8in}\seg@author]\footnotetext{\protect\seg@address}%
451     }{\vspace{0.3in}\seg@author}
452     \begin{lrbox}{\seg@abstract}\begin{minipage}{0.95\columnwidth}%
453         \centerline{\ifthenelse{\boolean{@twoc}}{}{\Large}\textbf{ABSTRACT}}\medskip{%
454     \medskip\end{minipage}\end{lrbox}%
455     \ifthenelse{\boolean{@shrt}}{}{\noindent\fbox{\usebox{\seg@abstract}}}}
456 }
```

3.8   Page style

```
457 \ifthenelse{\boolean{@manu}}
```

For manuscript, use plain page style.
```
458 {\pagestyle{plain}\thispagestyle{plain}}
```

For paper, define a page style

```
459 {\newcommand{\ps@seg}{%
460 \ifthenelse{\boolean{@twoc}}{%
461 \renewcommand{\@oddhead}{\hfill\textbf{\seg@rhead}\hfill\textbf{\thepage}}
462 \renewcommand{\@evenhead}{\textbf{\thepage}\hfill\textbf{\seg@lhead}\hfill}
463 \renewcommand{\@oddfoot}{}
464 \renewcommand{\@evenfoot}{}}{%
465 \renewcommand{\@oddhead}{%
466 \makebox[2.5in][l]{\textit{\seg@lhead}}\hfill\thepage\hfill%
467 \makebox[2.5in][r]{\textit{\seg@rhead}}}%
468 \renewcommand{\@evenhead}{\@oddhead}%
469 \renewcommand{\@oddfoot}{\hfill\textit{\seg@foot}\hfill}%
470 \renewcommand{\@evenfoot}{\@oddfoot}}}
471 \newcommand{\ps@segone}{%
472 \renewcommand{\@oddhead}{}%
473 \renewcommand{\@evenhead}{}%
474 \ifthenelse{\boolean{@twoc}}{%
475   \renewcommand{\@oddfoot}{\hfill\textbf{\thepage}\hfill}
476 }{\renewcommand{\@oddfoot}{\hfill\textit{\seg@foot}\hfill}}%
477 \renewcommand{\@evenfoot}{\@oddfoot}}
478 \pagestyle{seg}\thispagestyle{segone}}
```

3.9   Appendix

Clean this mess later.

```
479 \newcounter{@append}
480 \ifthenelse{\boolean{@manu}}{%
481   \AtEndDocument{\setcounter{@append}{0}}}{}
482 \providecommand{\append@name}{A}
483 \providecommand{\appendname}[1]{\renewcommand{\append@name}{#1}}
484 \renewcommand{\appendix}{%
485   \ifthenelse{\equal{\append@name}{A}}{%
486     \renewcommand{\append@name}{\Alph{@append}}}{}
487   \setcounter{equation}{0}%
488   \renewcommand{\theequation}{\mbox{\append@name-\arabic{equation}}}%
489   \ifthenelse{\boolean{@manu}}{%
490     \AtEndDocument{
491       \setcounter{figure}{0}%
492       \renewcommand{\thefigure}{\append@name-\arabic{figure}}%
493       \renewcommand{\p@subfigure}{\thefigure}%
494       \stepcounter{@append}
495     }
496   }{%
497     \setcounter{figure}{0}%
498     \renewcommand{\thefigure}{\append@name-\arabic{figure}}%
499     \renewcommand{\p@subfigure}{\thefigure}%
500   }
501   \stepcounter{@append}
502 }
```

```
503 \providecommand{\append}[2][\append@name]{%
504   \appendix\section{Appendix \append@name}\section{#2}
505   \begingroup
506   \def\@currentlabel{\append@name}%
507   \label{#1}%
508   \endgroup
509 }
```