LaTeX 2ε Classes for the Journal of Machine Learning Research

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1 Introduction

The jmlr class is for articles that need to be formatted according to the Journal of Machine Learning Research style. This class is based on the jmlr2e and jmlrwcp2e packages but has been adapted to enable it to work better with the combine class to collate the articles into a book. Section 2 describes how to use the jmlr class.

The jmlrbook class is for combining JMLR articles into a book. This class uses combine and hyperref, which are troublesome enough on their own but together are quite fragile. The jmlrbook class redefines some internals to get combine and hyperref to work together but some packages (e.g. subfig and pdfpages) are likely to mess everything up and cause errors. This is why the guidelines to authors are fairly stringent and why the jmlr class will give an error message if certain packages are loaded.[1] The jmlrbook class works best with PDFLaTeX so authors should ensure that their articles can compile with PDFLaTeX. Section 3 describes how to use the jmlrbook class.

Note that the jmlr (and therefore jmlrbook) class automatically loads the hyperref package, but some packages need to be loaded before hyperref.

Anything that needs to be done before hyperref is loaded can be specified by defining the command

`\jmlrprehyperref`

```
\jmlrprehyperref
```

before the class is loaded. For example, to load the packages foo and bar before hyperref, you can do:

```
\newcommand{\jmlrprehyperref}{\usepackage{foo,bar}}
\documentclass{jmlr}
```

There is a Java application called `makejmlrbookgui` that can compile all the individual papers from the book and generate the accompanying HTML files for the JMLR proceedings page. It can also create a grey nonhyperlinked PDF/X compliant print version of the book. The application can be downloaded from http://www.dickimaw-books.com/apps/makejmlrbookgui/ where there is also a troubleshooting section.

[1] Currently jmlr will check if subfig, pdfpages, geometry, psfig, epsfig, theorem, tabularx, amsthm and ntheorem are loaded and will throw an error. If other packages are found to be a problem, they will be added to the list.

There is also a Perl script called `makejmlrbook`, which is distributed with the jmlr and jmlrbook bundle, however it has been superseded by `makejmlrbookgui`. For those who still want to use it, `makejmlrbook` is described in Section 3.6.

1.1 Required Packages

The jmlr class is based on the article class and loads the following packages: amsmath, amssymb, natbib, url, graphicx and algorithm2e, hyperref, nameref, xcolor and xkeyval. Note that unlike the jmlr2e and jmlrwcp2e packages, this class file does not load the obsolete epsfig package.

The jmlrbook class additionally loads the combine class and the following packages: combnat, setspace and fink.

The `makejmlrbookgui` application requires Java (at least JRE 7), TEX, TEX4HT and Ghostscript. The `makejmlrbook` script requires Perl, TEX and TEX4ht.

2 Guidelines for Article Authors

Article authors should use the jmlr class. This class comes with example files `jmlr-sample.tex` and `jmlrwcp-sample.tex`, which can be used as templates.

The following class options are available:

nowcp The article is for the Journal of Machine Learning Research (default).

wcp The article is for JMLR Workshop and Conference Proceedings.

twocolumn Use two-column style.

onecolumn Use one-column style (default).

color Color version (see Section 2.11).

gray Grayscale version (see Section 2.11).

tablecaption=top in a table environment, `\floatconts` puts the caption at the top.

tablecaption=bottom in a table environment, `\floatconts` puts the caption at the bottom.

2.1 Title Information

The jmlr class uses different syntax from jmlr2e and jmlrwcp2e to specify the title information. In particular, it doesn't define `\jmlrheading` and `\ShortHeading`. Instead, the following commands should be used:

`\jmlrvolume` `\jmlrvolume{⟨number⟩}`

This specifies the volume number. For example:

```
\jmlrvolume{2}
```

`\jmlryear` `\jmlryear{⟨year⟩}`

This specifies the year. For example:

```
\jmlryear{2010}
```

\jmlrsubmitted `\jmlrsubmitted{⟨date⟩}`

This specifies the submission date.

\jmlrpublished `\jmlrpublished{⟨date⟩}`

This specifies the publication date.

\jmlrworkshop `\jmlrworkshop{⟨title⟩}`

This specifies the workshop title (for use with the wcp class option).

The title information is specified using the commands described below. These commands should typically go in the preamble. As with most class files, The title itself is produced using

\maketitle `\maketitle`

This command should go after `\begin{document}`. For example:

```
\begin{document}
\maketitle
```

Before `\maketitle`, you must specify the title information using the following commands:

\title `\title[⟨short title⟩]{⟨title⟩}`

This specifies the article's title. A short title for the page header can be supplied via the optional argument ⟨*short title*⟩. If you want to force a line break in the title, use

\titlebreak `\titlebreak`

instead of `\newline` or `\\` as this will ensure that the line break doesn't also end up in the table of contents or bookmarks when the article is included in a book. If there is content within the title that should not appear in the page headings or table of contents (for example, a footnote) use

\titletag `\titletag{⟨title only stuff⟩}`

For example:

```
\title{An Interesting Paper\titlebreak
With a Line Break\titletag{\thanks{and an
acknowledgement}}}
```

\editor `\editor{⟨name⟩}`

This specifies the editor's name. If there is more than one editor, use:

\editors `\editors{⟨names⟩}`

\author `\author{⟨author specs⟩}`

This specifies the author. The specifications ⟨*author specs*⟩ are a bit different to jmlr2e and jmlrwcp2e. Use

\Name `\Name[⟨abbreviated name⟩]{⟨author's name⟩}`

to specify the author's name. Note that if the surname contains a space it must be grouped (enclosed in braces {}). Similarly if the initial letter of each forename is a diacritic it must be grouped. If the abbreviation of the name doesn't get parsed properly you can override the default using the optional argument. (See below for examples.)

If there is any content within ⟨*author's name*⟩ that shouldn't get copied to the header, footer or table of contents, it should be enclosed within the argument of

\nametag `\nametag{⟨title only stuff⟩}`

For example:

```
\Name{Ann Other\nametag{\thanks{formerly with some other
institute}}}
```

\Email `\Email{⟨author's email⟩}`

This specifies the author's email address. It should only be used within the argument to `\author`.

\and `\and`

This should be used to separate two authors with the same address.

\AND `\AND`

This should be used to separate authors with different addresses.

\\ `\\`

This should be used before an author's address or between authors with the same address where there are more that two authors.

\addr

\addr

This should be used at the start of the address.

Example 1 Two authors with the same address:

```
\author{\Name{Jane Doe} \Email{abc@sample.com}\and
   \Name{John {Basey Fisher}} \Email{xyz@sample.com}\\
   \addr Address}
```

In this example, the second author has a space in his surname so the surname needs to be grouped.

Example 2 Three authors with the same address:

```
\author{\Name{Fred Arnold {de la Cour}} \Email{an1@sample.com}\\
   \Name{Jack Jones} \Email{an3@sample.com}\\
   \Name{{\'E}louise {\'E}abhla Finchley} \Email{an2@sample.com}\\
   \addr Address}
```

In this example, the third author has an accent on her forename initials so grouping is required.

Example 3 Authors with a different address:

```
\author{\Name{John Smith} \Email{abc@sample.com}\\
  \addr Address 1
  \AND
  \Name{May Brown} \Email{xyz@sample.com}\\
  \addr Address 2
 }
```

Example 4 The author is actually a company so there's no first name and surname:

```
\author{\Name[Some Company, Ltd]{Some Company, Ltd}\Email{xyz:some.com}\\
  \addr Address
}
```

2.2 Font Changing Commands

Use the LaTeX 2ε font changing commands, such as `\bfseries` or `\textbf{`⟨*text*⟩`}`, rather than the obsolete LaTeX2.09 commands, such as `\bf`. (The obsolete font changing commands will produce a warning if used.)

\url

\url{⟨*address*⟩}

This will typeset ⟨*address*⟩ in a typewriter font. Special characters, such as ~, are correctly displayed. Example:

```
\url{http://theoval.cmp.uea.ac.uk/~nlct/}
```

\mailto `\mailto{⟨email address⟩}`

This will typeset the given email address in a typewriter font. Note that this is not the same as `\Email`, which should only be used in the argument of `\author`.

2.3 Structure

abstract
```
\begin{abstract}
⟨text⟩
\end{abstract}
```

The abstract text should be displayed using the abstract environment.

keywords `\begin{keywords}⟨keyword list⟩\end{keywords}`

The keywords should be displayed using the keywords environment.

\acks `\acks{⟨text⟩}`

This displays the acknowledgements.

\section `\section{⟨title⟩}`

Section titles are created using `\section`. The heading is automatically numbered and can be cross-referenced using `\label` and `\ref`. Unnumbered sections can be produced using:

\section* `\section*{⟨title⟩}`

\subsection `\subsection{⟨title⟩}`

Sub-section titles are created using `\subsection`. Unnumbered sub-sections can be produced using:

\subsection* `\subsection*{⟨title⟩}`

\subsubsection `\subsubsection{⟨title⟩}`

Sub-sub-section titles are created using `\subsubsection`. Unnumbered sub-sub-sections can be produced using:

\subsubsection* `\subsubsection*{⟨title⟩}`

Further sectioning levels can be obtained using `\paragraph` and `\subparagraph`, but these are unnumbered with running heads.

\appendix `\appendix`

Use `\appendix` to switch to the appendices. This changes `\section` to produce an appendix. Example:

```
\appendix
\chapter{Proof of Theorems}
```

2.4 Citations and Bibliography

The jmlr class automatically loads natbib and sets the bibliography style to `plainnat`. References should be stored in a `.bib` file.

\bibliography `\bibliography{⟨bib file⟩}`

This displays the bibliography.

\citep `\citep[⟨pre note⟩][⟨post note⟩]{⟨label⟩}`

Use `\citep` for a parenthetical citation.

\citet `\citet[⟨note⟩]{⟨label⟩}`

Use `\citet` for a textual citation.

See the natbib documentation[1] for further details.

2.5 Figures and Tables

Floats, such as figures, tables and algorithms, are moving objects and are supposed to float to the nearest convenient location. Please don't force them to go in a particular place. In general it's best to use the `htbp` specifier and don't put the float in the middle of a paragraph (that is, make sure there's a paragraph break above and below the float). Floats are supposed to have a little

[1] http://ctan.org/pkg/natbib

extra space above and below them to make them stand out from the rest of the text. This extra space is put in automatically and shouldn't need modifying.

To ensure consistency, please ***don't*** try changing the format of the caption by doing something like:

```
\caption{\textit{A Sample Caption.}}
```

or

```
\caption{\em A Sample Caption.}
```

You can, of course, change the font for individual words or phrases. For example:

```
\caption{A Sample Caption With Some \emph{Emphasized Words}.}
```

The jmlr class provides the following command for displaying the contents of a figure or table:

`\floatconts`

`\floatconts{`⟨*label*⟩`}{`⟨*caption command*⟩`}{`⟨*contents*⟩`}`

This ensures that the caption is correctly positioned and that the contents are centered. For example:

```
\begin{table}[htbp]
\floatconts
  {tab:example}% label
  {\caption{An Example Table}}% caption command
  {%
    \begin{tabular}{ll}
    \bfseries Dataset & \bfseries Result\\
    Data1 & 0.123456
    \end{tabular}
  }
\end{table}
```

The jmlr class automatically loads graphicx which defines:

`\includegraphics`

`\includegraphics[`⟨*options*⟩`]{`⟨*file name*⟩`}`

where ⟨*options*⟩ is a comma-separated list of options.

For example, suppose you have an image called `mypic.png` in a subdirectory called `images`:

```
\begin{figure}[htbp]
\floatconts
  {fig:example}% label
  {\caption{An Example Figure}}% caption command
  {\includegraphics[width=0.5\textwidth]{images/mypic}}
\end{figure}
```

Note that you shouldn't specify the file extension when including the image. It's helpful if you can also provide a grayscale version of color images. This should be labeled as the color image but with `-gray` immediately before the extension. (The extension need not be the same as that of the color image.) For example, if you have an image called `mypic.pdf`, the grayscale can be called `mypic-gray.pdf`, `mypic-gray.png` or `mypic-gray.jpg`. See Section 2.11 for further details.

`\includeteximage` `\includeteximage[⟨options⟩]{⟨file name⟩}`

If your image file is made up of LaTeX code (e.g. tikz commands) the file can be included using `\includeteximage`. The optional argument is a key=value comma-separated list where the keys are a subset of those provided by `\includegraphics`. The main keys are: `width`, `height`, `scale` and `angle`.

2.5.1 Sub-Figures and Sub-Tables

The subfig package causes a problem for jmlrbook so the jmlr class will give an error if it is used. Therefore the jmlr class provides its own commands for including sub-figures and sub-tables.

`\subfigure` `\subfigure[⟨title⟩][⟨valign⟩]{⟨contents⟩}`

This makes a sub-figure where ⟨*contents*⟩ denotes the contents of the sub-figure. This should also include the `\label`. The first optional argument ⟨*title*⟩ indicates a caption for the sub-figure. By default, the sub-figures are aligned at the base. This can be changed with the second optional argument ⟨*valign*⟩, which may be one of: `t` (top), `c` (centred) or `b` (base).

For example, suppose there are two images files, `mypic1.png` and `mypic2.png`, in the subdirectory `images`. Then they can be included as sub-figures as follows:

```
\begin{figure}[htbp]
\floatconts
  {fig:example2}% label for whole figure
  {\caption{An Example Figure.}}% caption for whole figure
  {%
    \subfigure{%
      \label{fig:pic1}% label for this sub-figure
      \includegraphics{images/mypic1}
    }\qquad % space out the images a bit
    \subfigure{%
      \label{fig:pic2}% label for this sub-figure
      \includegraphics{images/mypic2}
    }
  }
\end{figure}
```

\subtable

```
\subtable[⟨title⟩][⟨valign⟩]{⟨contents⟩}
```

This is an analogous command for sub-tables. The default value for ⟨*valign*⟩ is `t`.

2.6 Algorithms

algorithm

```
\begin{algorithm}
⟨contents⟩
\end{algorithm}
```

Enumerated textual algorithms can be displayed using the algorithm environment. Within this environment, use `\caption` to set the caption (and `\label` to cross-reference it). Within the body of the environment you can use the enumerate environment.

enumerate*

```
\begin{enumerate*}
\item ⟨text⟩
...
\end{enumerate*}
```

If you want to have nested enumerate environments but you want to keep the same numbering throughout the algorithm, you can use the enumerate* environment, provided by the jmlr class. For example:

```
\begin{enumerate*}
  \item Set the label of vertex $s$ to 0
  \item Set $i=0$
  \begin{enumerate*}
    \item \label{step:locate}Locate all unlabelled vertices
          adjacent to a vertex labelled $i$ and label them $i+1$
    \item If vertex $t$ has been labelled,
    \begin{enumerate*}
      \item[] the shortest path can be found by backtracking, and
      the length is given by the label of $t$.
    \end{enumerate*}
    otherwise
    \begin{enumerate*}
      \item[] increment $i$ and return to step~\ref{step:locate}
    \end{enumerate*}
  \end{enumerate*}
\end{enumerate*}
\end{algorithm}
```

algorithm2e

```
\begin{algorithm2e}
⟨contents⟩
\end{algorithm2e}
```

Pseudo code can be displayed using the algorithm2e environment, provided by the algorithm2e package, which is automatically loaded. For example:

```
\begin{algorithm2e}
\caption{Computing Net Activation}
\label{alg:net}
\dontprintsemicolon
\linesnumbered
\KwIn{$x_1, \ldots, x_n, w_1, \ldots, w_n$}
\KwOut{$y$, the net activation}
$y\leftarrow 0$\;
\For{$i\leftarrow 1$ \KwTo $n$}{
  $y \leftarrow y + w_i*x_i$\;
}
\end{algorithm2e}
```

See the algorithm2e documentation[2] for more details.

2.7 Description Lists

altdescription

```
\begin{altdescription}{⟨widest label⟩}
\item[⟨label⟩] ⟨item text⟩
\end{altdescription}
```

In addition to the standard description environment, the jmlr class also provides the altdescription environment. This has an argument that should be the widest label used in the list. For example:

```
\begin{altdescription}{differentiate}
\item[add] A method that adds two variables.
\item[differentiate] A method that differentiates a function.
\end{altdescription}
```

2.8 Theorems, Lemmas etc

The jmlr class provides the following theorem-like environments: theorem, example, lemma, proposition, remark, corollary, definition, conjecture and axiom. Within the body of those environments, you can use the proof environment to

[2] http://ctan.org/pkg/algorithm2e

display the proof if need be. The theorem-like environments all take an optional argument, which gives the environment a title. For example:

```
\begin{theorem}[An Example Theorem]
\label{thm:example}
This is the theorem.
\begin{proof}
This is the proof.
\end{proof}
\end{theorem}
```

You can define your own numbered theorem-like environment using:

\newtheorem `\newtheorem{⟨name⟩}[⟨counter⟩]{⟨title⟩}[⟨outer counter⟩]`

or you can define an unnumbered theorem-like environment using:

\newtheorem* `\newtheorem*{⟨name⟩}{⟨title⟩}`

where ⟨*name*⟩ is the name of the new environment and ⟨*title*⟩ is the title tag at the start of the environment. In the case of the numbered theorems, ⟨*counter*⟩ is a predefined counter to use with this theorem. If omitted, a new counter called ⟨*name*⟩ will be defined. The final optional argument ⟨*outer counter*⟩ is the name of a parent counter which, when incremented, should reset the theorem counter.

Both \newtheorem and \newtheorem* set the new theorem's style to the current defined style. The current style is set using the following commands:

\theorembodyfont `\theorembodyfont{⟨declarations⟩}`

This sets the font declarations used in the body of the theorem. This defaults to \itshape.

\theoremheaderfont `\theoremheaderfont{⟨declarations⟩}`

This sets the font declarations used for the theorem title. This defaults to \bfseries.

\theorempostheader `\theorempostheader{⟨text⟩}`

This indicates what should occur at the end of the title. This defaults to nothing.

\theoremsep `\theoremsep{⟨text⟩}`

This indicates what to put between the header and the body of the environment. This defaults to nothing.

For example, to define an unnumbered theorem-like environment called "note" with the title "Note" followed by a colon and a new line between the title and the body of the `note` environment:

```
\theorembodyfont{\upshape}
\theoremheaderfont{\scshape}
\theorempostheader{:}
\theoremsep{\newline}
\newtheorem*{note}{Note}
```

Now it can be used in the document environment:

```
\begin{note}
This is an numbered theorem-like environment.
\end{note}
```

2.9 Cross-Referencing

Always use `\label` when cross-referencing, rather than writing the number explicitly. The jmlr class provides some convenience commands to assist referencing. These commands, described below, can all take a comma-separated list of labels.

`\sectionref` `\sectionref{`⟨*label list*⟩`}`

Used to refer to a section or sections. For example, if you defined a section as follows:

```
\chapter{Results}\label{sec:results}
```

you can refer to it as follows:

```
The results are detailed in \sectionref{sec:results}.
```

This command may also be used for sub-sections and sub-sub-sections.

`\appendixref` `\appendixref{`⟨*label list*⟩`}`

Used to refer to an appendix or multiple appendices.

`\equationref` `\equationref{`⟨*label list*⟩`}`

Used to refer to an equation or multiple equations.

`\tableref` `\tableref{`⟨*label list*⟩`}`

Used to refer to a table or multiple tables. This can also be used for sub-tables where the main table number is also required.

\subtabref `\subtabref{⟨label list⟩}`

Used to refer to sub-tables without the main table number, e.g. (*a*) or (*b*).

\figureref `\figureref{⟨label list⟩}`

Used to refer to a figure or multiple figures. This can also be used for sub-figures where the main figure number is also required, e.g. 2(*a*) or 4(*b*).

\subfigref `\subfigref{⟨label list⟩}`

Used to refer to sub-figures without the main figure number, e.g. (*a*) or (*b*).

\algorithmref `\algorithmref{⟨label list⟩}`

Used to refer to an algorithm or multiple algorithms.

\theoremref `\theoremref{⟨label list⟩}`

Used to refer to a theorem or multiple theorems.

\lemmaref `\lemmaref{⟨label list⟩}`

Used to refer to a lemma or multiple lemmas.

\remarkref `\remarkref{⟨label list⟩}`

Used to refer to a remark or multiple remarks.

\corollaryref `\corollaryref{⟨label list⟩}`

Used to refer to a corollary or multiple corollaries.

\definitionref `\definitionref{⟨label list⟩}`

Used to refer to a definition or multiple definitions.

\conjectureref `\conjectureref{⟨label list⟩}`

Used to refer to a conjecture or multiple conjectures.

\axiomref `\axiomref{⟨label list⟩}`

Used to refer to an axiom or multiple axioms.

\exampleref

\exampleref{⟨*label list*⟩}

Used to refer to an example or multiple examples.

2.10 Mathematics

The jmlr class loads the amsmath package so you can use any of the commands and environments defined in that package. A brief summary of some of the more common commands and environments is provided here. See the amsmath documentation[3] for further details.

\set

\set{⟨*text*⟩}

In addition to the commands provided by amsmath, the jmlr class also provides the \set command which can be used to typeset a set. For example:

```
The universal set is denoted $\set{U}$
```

Unnumbered single-line equations should be displayed using \[and \]. For example:

```
\[E = m c^2\]
```

Numbered single-line equations should be displayed using the equation environment. For example:

```
\begin{equation}\label{eq:trigrule}
\cos^2\theta + \sin^2\theta \equiv 1
\end{equation}
```

Multi-lined numbered equations should be displayed using the align environment. For example:

```
\begin{align}
f(x) &= x^2 + x\label{eq:f}\\
f'(x) &= 2x + 1\label{eq:df}
\end{align}
```

Unnumbered multi-lined equations should be displayed using the align* environment. For example:

```
\begin{align*}
f(x) &= (x+1)(x-1)\\
&= x^2 - 1
\end{align*}
```

[3] http://ctan.org/pkg/amsmath

If you want to mix numbered with unnumbered lines use the align environment and suppress unwanted line numbers with \nonumber. For example:

```
\begin{align}
y &= x^2 + 3x - 2x + 1\nonumber\\
&= x^2 + x + 1\label{eq:y}
\end{align}
```

An equation that is too long to fit on a single line can be displayed using the split environment.

Text can be embedded in an equation using \text{⟨*text*⟩} or you can use \intertext{⟨*text*⟩} to interupt a multi-line environment such as align.

Predefined operator names are listed in table 2.1. For additional operators, either use

\operatorname `\operatorname{⟨name⟩}`

for example

```
If $X$ and $Y$ are independent,
$\operatorname{var}(X+Y) =
\operatorname{var}(X) + \operatorname{var}(Y)$
```

or declare it with

\DeclareMathOperator `\DeclareMathOperator{⟨command⟩}{⟨name⟩}`

for example

```
\DeclareMathOperator{\var}{var}
```

and then use this new command:

```
If $X$ and $Y$ are independent,
$\var(X+Y) = \var(X)+\var(Y)$
```

If you want limits that go above and below the operator (like \sum) use the starred versions (\operatorname* or \DeclareMathOperator*).

2.11 Color vs Grayscale

It's helpful if authors supply grayscale versions of their articles in the event that the article is to be incorporated into a black and white printed book. With external PDF, PNG or JPG graphic files, you just need to supply a grayscale version of the file. For example, if the file is called myimage.png, then the gray version should be myimage-gray.png or myimage-gray.pdf or myimage-gray.jpg. You don't need to modify your code. The jmlr class checks for the existence of the grayscale version if it is print mode (provided you have used \includegraphics and haven't specified the file extension).

Table 2.1: Predefined Operator Names (taken from amsmath documentation)

\arccos	arccos	\deg	deg	\lg	lg	\projlim	projlim
\arcsin	arcsin	\det	det	\lim	lim	\sec	sec
\arctan	arctan	\dim	dim	\liminf	liminf	\sin	sin
\arg	arg	\exp	exp	\limsup	limsup	\sinh	sinh
\cos	cos	\gcd	gcd	\ln	ln	\sup	sup
\cosh	cosh	\hom	hom	\log	log	\tan	tan
\cot	cot	\inf	inf	\max	max	\tanh	tanh
\coth	coth	\injlim	injlim	\min	min		
\csc	csc	\ker	ker	\Pr	Pr		

\varlimsup	$\overline{\lim}$	\varinjlim	$\varinjlim$
\varliminf	$\underline{\lim}$	\varprojlim	$\varprojlim$

\ifprint

\ifprint{⟨*true part*⟩}{⟨*false part*⟩}

You can use \ifprint to determine which mode you are in. For example:

```
in \figureref{fig:nodes}, the
\ifprint{dark gray}{purple}
ellipse represents an input and the
\ifprint{light gray}{yellow} ellipse
represents an output.
```

Another example:

```
{\ifprint{\bfseries}{\color{red}}important text!}
```

You can use the class option gray to see how the document will appear in gray scale mode.

The xcolor class is loaded with the x11names option, so you can use any of the x11 predefined colors (listed in the xcolor documentation[4]).

2.12 Where To Go For Help

If you have a general LaTeX query, the first place to go to is the UK TUG FAQ[5].

If you are unfamiliar or just getting started with LaTeX, there's a list of on-line introductions to LaTeX at: http://www.tex.ac.uk/cgi-bin/texfaq2html?label=man-latex

There are also forums, mailing lists and newsgroups. For example, the LaTeX Community (http://www.latex-community.org/), the texhax mailing list (http://tug.org/mailman/listinfo/texhax) and comp.text.tex

[4] http://ctan.org/pkg/xcolor
[5] http://www.tex.ac.uk/faq

(archives available at http://groups.google.com/group/comp.text.tex/). The best place for queries about the jmlr class is the "Document Classes" section of the LaTeX Community Forum, as there's a high chance I'll see it there and help if I can. (Emails directly to me tend to get lost in my overcrowded inbox.)

Documentation for packages or classes can be found using the `texdoc` application. For example:

```
texdoc natbib
```

Alternatively, you can go to `http://www.ctan.org/pkg/`⟨*name*⟩ where ⟨*name*⟩ is the name of the package. For example: http://www.ctan.org/pkg/natbib

For a general guide to preparing papers (regardless of whether you are using LaTeX or a word processor), see Kate L. Turabian, "A manual for writers of term papers, theses, and dissertations", The University of Chicago Press, 1996.

3 Guidelines for Production Editors

The jmlrbook class can be used to combine articles that use the jmlr document class into a book. The following sample files are provided: `paper1/paper1.tex`, `paper2/paper2.tex`, `paper3/paper3.tex`, `jmlr-sample.tex`, `jmlrwcp-sample.tex`, `jmlrbook-sample.tex` and `proceedings-sample.tex`. All but the last two are articles using the jmlr class. The last two (`jmlrbook-sample.tex` and `proceedings-sample.tex`) uses the jmlrbook class file to combine the articles into a book. Note that no modifications are needed to the files using the jmlr class when they are imported into the book. They can either be compiled as stand-alone articles or with the entire book.

Before you compile the book, make sure that all the articles compile as stand-alone documents (and run BibTEX where necessary). You can use the `makejmlrbookgui` application to compile the book and create associated HTML files. See http://www.dickimaw-books.com/apps/makejmlrbookgui/ for details.

3.1 jmlrbook Class Options

nowcp The imported pre-published articles were published in the Journal of Machine Learning Research (default).

wcp The imported pre-published articles were published in the JMLR Workshop and Conference Proceedings.

If the book has a mixture of JMLR and JMLR WCP articles, you can switch between them using

`\jmlrwcp`

```
\jmlrwcp
```

and

`\jmlrnowcp`

```
\jmlrnowcp
```

Alternatively, you can set the name of the journal or conference proceedings using:

\jmlrproceedings

\jmlrproceedings{⟨*short title*⟩}{⟨*long title*⟩}

color Color version (see Section 2.11). Use this option for the on-line version with hyperlinks enabled (default).

gray Grayscale version (see Section 2.11). Use this option for the print version without hyperlinks.

tablecaption=top in a table environment, `\floatconts` puts the caption at the top.

tablecaption=bottom in a table environment, `\floatconts` puts the caption at the bottom.

letterpaper Set the paper size to letter (default).

7x10 Set the paper size to 7 × 10 inches.

10pt Use 10pt as the normal text size.

11pt Use 11pt as the normal text size (default).

12pt Use 12pt as the normal text size.

3.2 The Preamble

Any packages that the imported articles load (which aren't automatically loaded by jmlr) must be loaded in the book's preamble. For example, if one or more of the articles load the siunitx package, this package must be loaded in the book.

Commands that are defined in the imported articles will be local to that article unless they have been globally defined using `\gdef` or `\global`. Since most authors use `\newcommand` and `\newenvironment` (or `\renewcommand` and `\renewenvironment`) this shouldn't cause a conflict if more that one article has defined the same command or environment. For example, in the sample files supplied, both `paper1/paper1.tex` and `paper2/paper2.tex` have defined the command `\samplecommand` using `\newcommand`. As long as this command isn't also defined in the book, there won't be a conflict.

\title

\title[⟨*PDF title*⟩]{⟨*book title*⟩}

In the book preamble, `\title` sets the book title and the optional argument is used for the PDF title, which will be displayed when the reader views the PDF file's properties in their PDF viewer. (Note that in the imported articles, `\title` sets the article's title and the optional argument sets the short title for the page header and table of contents.)

\author `\author[⟨PDF author(s)⟩]{⟨book author(s)⟩}`

In the book preamble, `\author` sets the book's author (or editor) and the optional argument is used for the PDF author, which will be displayed when the reader views the PDF file's properties in their PDF viewer. (Note that in the imported articles, `\author` sets the article's author and the optional argument sets the short author list for the page header.)

\volume `\volume{⟨number⟩}`

This command sets the book's volume number. Omit if the book has no volume number.

\subtitle `\subtitle{⟨sub-title⟩}`

This command sets the book's subtitle. Omit if the book has no sub-title.

\logo `\logo[⟨url⟩]{⟨image command⟩}`

This sets the book's title image. Use `\includegraphics` and omit the file extension. If you provide a grayscale version as well as a color version, the grayscale version will be used for the print version of the book. (See Section 2.11 for further details.) The optional argument, if present, is used by `makejmlrbookgui` to make the logo a link to ⟨*url*⟩ on the index HTML page, otherwise it's ignored.

\team `\team{⟨team title⟩}`

This can be used to set the name of the editorial team. This command may be omitted if not required.

\productioneditor `\productioneditor{⟨name⟩}`

This command may be used to name the production editor. The command may be omitted if not required.

\jmlrlocation `\jmlrlocation{⟨location⟩}`

This specifies the workshop location. By default this doesn't appear on the title page. See Section 3.4 for details on how to modify the layout of the title page.

3.3 Main Book Commands

All commands that are provided by the jmlr class are also available with the jmlrbook class, but some commands might behave differently depending on whether they are in the main part of the book or within the imported articles.

In the main part of the book you can use the following commands:

\maketitle

```
\maketitle
```

This displays the book's title page. Note that `\maketitle` has a different effect when used in imported articles.

\frontmatter

```
\frontmatter
```

Use this command at the start of the front matter (e.g. before the foreword or preface). This will make chapters unnumbered even if you use `\chapter` instead of `\chapter*`. It also sets the page style and sets the page numbering to lower case Roman numerals.

authorsignoff

```
\begin{authorsignoff}
⟨author list⟩
\end{authorsignoff}
```

This environment may be used by the author signing off at the end of a chapter such as the foreword. Within the environment use:

\Author

```
\Author{⟨details⟩}
```

for the author's details. More than one `\Author` should be used if there is more than one author. Example:

```
\begin{authorsignoff}
\Author{Nicola Talbot\\
University of East Anglia}
\Author{Anne Author\\
University of No Where}
\end{authorsignoff}
```

preface

```
\begin{preface}[⟨filename⟩]
```

This environment may be used to typeset the preface. This starts a new chapter using

```
\chapter{\prefacename}
```

\prefacename

where `\prefacename` defaults to "Preface". This environment should typically go in the front matter and is provided to allow `makejmlrbookgui` create a standalone document for the preface. The optional argument is the filename (without any extension or path) that will be used by `makejmlrbookgui`. This defaults to `preface` but, to conform with JMLR guidelines, should be changed to the surname of the first author (editor) followed by the final two digits of the year. See the JMLR website for further details of the guidelines.

signoff

```
\begin{signoff}[⟨team name⟩]{⟨date⟩}
⟨editor list⟩
\end{signoff}
```

This environment may be used by the editorial team when signing off a chapter such as the preface. If the optional argument is omitted, "The Editorial Team" is used. If you are using the preface environment described above, the signoff environment must go inside the preface environment.

Within the signoff environment use:

\Editor

```
\Editor{⟨details⟩}
```

for each editor. Example:

```
\begin{signoff}{March 2010}
% First editor:
\Editor{Nicola Talbot\\
University of East Anglia\\
\mailto{N.Talbot@uea.ac.uk}}
% Second editor:
\Editor{Anne Editor\\
University of Nowhere\\
\mailto{ae@sample.com}}
\end{signoff}
```

\tableofcontents

```
\tableofcontents
```

This command displays the book's table of contents. Note that it has a different effect if used in an imported article.

\mainmatter

```
\mainmatter
```

Use this command to switch to the book's main matter. This will switch the chapter numbering back on, reset the page numbering to Arabic and set up the main page style.

\part

```
\part[⟨short title⟩]{⟨title⟩}
```

If used in the main part of the book, this command will start a new part and issue a clear double page. Note that this command has a different effect if used in an imported article (or inside the jmlrpapers environment).

\addtocpart

```
\addtocpart{⟨title⟩}
```

This adds ⟨*title*⟩ to the table of contents, issues a clear double page, but doesn't display any text or affect the part numbering.

\chapter

```
\chapter[⟨short title⟩]{⟨title⟩}
```

This command may be used in the main body of the book but will cause an error if used within an imported article (or inside the jmlrpapers environment).

\section

```
\section[⟨short title⟩]{⟨title⟩}
```

\subsection

```
\subsection[⟨short title⟩]{⟨title⟩}
```

\subsubsection

```
\subsubsection[⟨short title⟩]{⟨title⟩}
```

\paragraph

```
\paragraph[⟨short title⟩]{⟨title⟩}
```

\subparagraph

```
\subparagraph[⟨short title⟩]{⟨title⟩}
```

These commands may be used in the main body of the book or within imported articles. In the main body of the book (outside of the jmlrpapers environment) they need to be within a chapter and will be numbered according to the chapter.

\appendix

```
\appendix
```

If used in the main body of the book (*outside* of the jmlrpapers environment) this will switch to the book appendices. Subsequent `\chapter` commands will produce the appendices. (Any imported articles in the appendix will be identified by `makejmlrbookgui` as supplemental material.) If used within an imported article (or within the jmlrpapers environment) `\appendix` will switch to the article appendices and won't affect the main part of the book.

jmlrpapers

```
\begin{jmlrpapers}
⟨imported papers⟩
\end{jmlrpapers}
```

This environment must be used when importing articles and may be used as often as required. Take care not to include book sectioning commands, such as `\chapter`, in this environment. Within the jmlrpapers environment, use the following commands to import articles:

\importpubpaper

```
\importpubpaper[⟨label⟩]{⟨directory⟩}{⟨file⟩}{⟨pages⟩}
```

This imports an article that has already been published elsewhere. The ⟨*pages*⟩ argument should be the page range from the *previously published* version of this article. This may not necessarily be the same as the page range of the article in the book. The directory the imported file is contained in is given by ⟨*directory*⟩. If the file is in the same directory as the book, use a dot. The file name is given by ⟨*file*⟩. The article is also given a label, specified by the optional argument. This is ⟨*directory*⟩/⟨*file*⟩ by default. The label is used as a prefix to labels in the imported articles which ensures that cross-references are unique. You can also use this label to reference the article elsewhere in the book (see Section 3.3.2).

`\importpaper` `\importpaper[⟨label⟩]{⟨directory⟩}{⟨file⟩}`

Imports an article that is being published in the book. The arguments are the same as above except that there is no page range (the page range is computed automatically).

`\importarticle` `\importarticle[⟨label⟩]{⟨directory⟩}{⟨file⟩}`

This imports an article that hasn't been published elsewhere. There is no page range, but the other arguments are the same as those describe above for `\importpubpaper`.

Example: to import a previously published paper `paper1/paper1.tex` and an unpublished paper `paper2/paper2.tex`:

```
\begin{jmlrpapers}
\importpubpaper{paper1}{paper1}{23--45}
\importarticle{paper2}{paper2}
\end{jmlrpapers}
```

3.3.1 Two Column Articles in a One Column Book

The jmlrbook class column style will override the column style of the imported articles. You can use the twocolumn class option to jmlrbook, but this will make the whole book with two columns. If you only want the imported articles to be in two columns, then put `\twocolumn` in the jmlrpapers environment to switch on two column formatting. The effect will be localised to the end of the environment.

3.3.2 Cross-Referencing

You can cross-reference other parts of the book using the standard `\label`/`\ref` mechanism, but if you want to reference something within an imported article, you must prefix the label with the label given when importing the article (that is, the optional argument to `\importpubpaper`, `\importpaper` or

`\importarticle`). For example, if you want to reference a section labelled `sec:results` in the imported paper `paper1/paper1.tex`, you would need to do:

```
see Section~\ref{paper1/paper1sec:results}
```

or

```
see \sectionref{paper1/paper1sec:results}
```

In addition to the commands described in Section 2.9, the jmlrbook class also provides the following cross-referencing commands:

`\chapterref` `\chapterref{⟨label list⟩}`

Reference a chapter or chapters. The argument is a comma-separated list of labels.

`\articlepageref` `\articlepageref{⟨label⟩}`

This displays the starting page number of the article whose label is given by ⟨*label*⟩. Note that this must a single label, not a list. For example:

```
An interesting article starts on page~\articlepageref{paper1/paper1}
```

`\articlepagesref` `\articlepagesref{⟨label⟩}`

This displays the page range of the article whose label is given by ⟨*label*⟩. Again, this must be a single label, not a list. This page range is unrelated to the ⟨*pages*⟩ argument of `\importpubarticle`.

`\articletitleref` `\articletitleref{⟨label⟩}`

This displays the short title for the article whose label is given by ⟨*label*⟩. Again, this must be a single label, not a list.

`\articleauthorref` `\articleauthorref{⟨label⟩}`

This displays the author list for the article whose label is given by ⟨*label*⟩. Again, this must be a single label, not a list.

3.4 Altering the Layout of the Main Title Page

`\titlebody` `\titlebody`

The main body of the book's title page is given by the command \titlebody. Within the definition of this command, you can use:

\SetTitleElement

\SetTitleElement{⟨*element*⟩}{⟨*pre*⟩}{⟨*post*⟩}

where ⟨*element*⟩ can be: title, volume, issue[1], subtitle, logo, team, author, date, productioneditor. The ⟨*pre*⟩ and ⟨*post*⟩ arguments specify what to do before and after the element. Note that \SetTitleElement does nothing if that element hasn't been set. For example, if \volume has been omitted or \volume{} is used, then

```
\SetTitleElement{volume}{\mainvolumefont}{\postmainvolume}
```

will do nothing (so you don't end up with **Volume :**).

\IfTitleElement

\IfTitleElement{⟨*element*⟩}{⟨*true part*⟩}{⟨*false part*⟩}

This does ⟨*true part*⟩ if ⟨*element*⟩ has been set otherwise it does ⟨*false part*⟩. For example, \postmainvolume is defined as:

```
\newcommand{\postmainvolume}{%
  \IfTitleElement{subtitle}{}{:}\par\relax
}
```

This means that it will only print a colon after the volume number if the subtitle has been set.

The default definition of \titlebody is:

```
\newcommand{\titlebody}{%
  \SetTitleElement{title}{\maintitlefont}{\postmaintitle}%
  \SetTitleElement{volume}{\mainvolumefont}{\postmainvolume}%
  \SetTitleElement{subtitle}{\mainsubtitlefont}{\postmainsubtitle}%
  \SetTitleElement{logo}{\mainlogofont}{\postmainlogo}%
  \SetTitleElement{team}{\mainteamfont}{\postmainteam}%
  \SetTitleElement{author}{\mainauthorfont}{\postmainauthor}%
  \SetTitleElement{productioneditor}{\mainproductioneditorfont}%
    {\postmainproductioneditor}%
}
```

3.5 Potential Pitfalls

The combine class and hyperref package are individually both easily broken by packages that change certain internals and they don't ordinarily work together. The jmlrbook class applies patches to the internal referencing mechanism to make them work together, but it's a fairly fragile alliance. Some packages are

[1] The default title page layout doesn't use issue, but if required it can be set with \issue{⟨*number*⟩}

known to break it, for example subfig, pdfpages and geometry. This is why the jmlr class checks for known problem packages and generates an error message to dissuade authors from using them. It's likely that there are other packages that may cause a problem and, as they are found, they will be added to the check list. Also, it's possible for an author to disable the package checking mechanism if they are determined to use a particular package.

In the event that an article has loaded a problem package, the editors will have to decide whether to ask the author to change the article so that it doesn't cause a problem or to make the changes themselves or to find a way of fudging things to get it to work. It depends on the level of LaTeX expertise amongst the editors and the time available.

Another problem that can arise is when different articles use packages that conflict. For example, one article uses package foo and another uses package bar. Each article compiles okay as a stand-alone article, but when combined foo and bar conflict. Another problem may occur when articles load the same package but with conflicting package options. To reduce the chance of this occurring, the jmlr class loads some commonly used packages. For example, it loads the algorithm2e package with the algo2e and ruled options and provides the algorithm environment in addition to algorithm2e's algorithm2e environment. Different versions of the same package can also be a problem. To help counteract the problem caused by different papers using different versions of the algorithm2e package, jmlrbook defines most of the old style commands if they don't exist.

Articles that use different input encodings can also cause a problem. For example, if one article uses `utf8` and another uses `latin1`. If the authors have directly entered a diacritic or ligature, such as é or æ, instead of using a LaTeX command, such as `\'e` or `\ae`, then this will cause an error on compiling the book.[2] The choice then is to either change all non-keyboard characters with the appropriate LaTeX commands or to use the `\inputencoding` command, supplied by the inputenc package, to switch the encoding at the start of each article. One thing to watch out for are bib files that contain a mixture of encodings caused by copying and pasting from different sources. Version 0.4.2b of `makejmlrbookgui` provides a function to search for characters outside the range 0x20 (space) and 0x7E (tilde).

Authors who use `\nonumber` within an equation environment can mess up the hyperlinks. Remove `\nonumber` and change the equation environment to `\[ ... \]` (or just make it a numbered equation).

If the article changes the graphics path using `\graphicspath`, jmlrbook won't find the graphics if the imported articles aren't in the same directory as the book.

The `makejmlrbookgui` application provides some diagnostic tools, which can help detect some common problems. It's manual also has a troubleshoot-

[2] and may also cause a problem for the editor's text editor.

ing section.

3.6 Creating the Book Using `makejmlrbook`

The `makejmlrbook` script has been superseded by the `makejmlrbookgui` application, which can be downloaded from `http://www.dickimaw-books.com/apps/makejmlrbookgui/`.

The `makejmlrbook` Perl script is designed to make it easier to produce the print and online versions of the book, as well as producing an HTML index of all the imported articles with links to the abstracts and PDFs of individual articles. Note that for it to work properly, the articles must be imported using `\importarticle`, `\importpaper` or `\importpubpaper`, and the imported articles must use the jmlr class. Note that I have only tested `makejmlrbook` on Linux.

On UNIX style systems, the script can be invoked from a terminal using:

`makejmlrbook` [⟨*options*⟩] ⟨*filename*⟩

If that doesn't work, or you aren't using a UNIX style operating system, the script can be invoked from a terminal or command prompt using:

`perl makejmlrbook` [⟨*options*⟩] ⟨*filename*⟩

The mandatory argument ⟨*filename*⟩ is the name of the master TEX file containing the book. It must use the jmlrbook class. You may omit the `.tex` extension. For example, if the file is called `proceedings.tex`, you can call `makejmlrbook` as follows:

```
perl makejmlrbook proceedings
```

This will create the files `proceedings-print.pdf` (the print version) and `proceedings-online.pdf` (the online version). It will also create a directory (folder) called `html` in which the HTML files and individual article PDFs will be placed.

The options to `makejmlrbook` are as follows:

`--online` Generate the color on-line version (default).

`--noonline` Don't generate the color on-line version.

`--print` Generate the grayscale print version (default).

`--noprint` Don't generate the grayscale print version.

`--html` Generate the HTML files and the individual article PDFs (default). *Caveat: TeX4HT no longer works with the jmlr class.*

`--nohtml` Don't generate the HTML files and the individual article PDFs.

`--logourl` ⟨***url***⟩ Make the logo on the HTML index page link to ⟨*url*⟩.

`--extractpreface` Extract the preface as a standalone document with links in the HTML index. (Only has an effect if combined with `--html` option.) This will only work if the preface has been put inside the preface environment with the signoff environment that each editor with `\Editor`.

`--noextractpreface` Don't try extracting the preface. (Default.)

`--batchtex` Run TEX in batch mode.

`--nobatchtex` Don't run TEX in batch mode (default).

`--quieter` Reduce chatter to STDOUT (doesn't eliminate all messages). This also runs TEX in batch mode.

`--noquieter` Don't reduce messages to STDOUT (default).

`--version` Display the version number and exit.

`--help` List all available options.

There are also some more advanced options, but these haven't been fully tested:

`--latexapp` ⟨***name***⟩ Application used to call LATEX. Defaults to "pdflatex".

`--latexopt` ⟨***string***⟩ Options to pass to LATEX.

`--format` ⟨***string***⟩ Output format (defaults to "pdf"). This may need to be changed if you change the LATEX application.

`--bibtexapp` ⟨***name***⟩ Application use to process the bibliography. Defaults to "bibtex".

`--bibtexopt` ⟨***string***⟩ Options to pass to BibTEX.

4 The Code

4.1 jmlr.cls Code

This class is based on the jmlr2e package but was modified to make sure it works with jmlrbook which uses both combine and hyperref.

Declare class and required TeX format:

```
\NeedsTeXFormat{LaTeX2e}
\ProvidesClass{jmlr}[2014/10/15 v1.20 (NLCT) Journal of Machine Learning Research]
```

Need xkeyval package to have key=value class options

```
\RequirePackage{xkeyval}
\RequirePackage{calc}
\RequirePackage{etoolbox}
```

Some packages need to be loaded before hyperref so provide a hook to do this:

`\jmlrprehyperref`

```
\providecommand*{\jmlrprehyperref}{}
```

The following conditionals are provided to make this class play nicely with combine and aren't required for articles.

```
\newif\if@openright
\newif\if@mainmatter \@mainmattertrue
```

`\ifgrayscale` Determine whether to select grayscale alternatives

```
\@ifundefined{ifgrayscale}{
  \newif\ifgrayscale
  \grayscalefalse
}{}
\DeclareOptionX{color}{\grayscalefalse
  \PassOptionsToPackage{color}{xcolor}}
\DeclareOptionX{gray}{\grayscaletrue
  \PassOptionsToPackage{gray}{xcolor}}
```

`draft`

```
\DeclareOptionX{draft}{\setlength\overfullrule{5pt}}
```

`final`

```
\DeclareOptionX{final}{\setlength\overfullrule{0pt}}
```

\iftablecaptiontop Determine if the table captions should go at the top.

```
\newif\iftablecaptiontop
\tablecaptiontoptrue
\DeclareOptionX{tablecaptiontop}{\tablecaptiontoptrue}
\DeclareOptionX{tablecaptionbottom}{\tablecaptiontopfalse}

\define@choicekey{jmlr.cls}{tablecaption}[\val\nr]{top,bottom}{%
  \ifcase\nr\relax
    \tablecaptiontoptrue
  \or
    \tablecaptiontopfalse
  \fi
}
```

\ifjmlrhtml Determine if we are using TeX4ht:

```
\newif\ifjmlrhtml
\jmlrhtmlfalse
\DeclareOptionX{html}{\jmlrhtmltrue}
\DeclareOptionX{nohtml}{\jmlrhtmlfalse}
```

Normal font size (default is 11pt).

```
\def\pt@size{11pt}
\DeclareOptionX{10pt}{\renewcommand{\pt@size}{10pt}}
\DeclareOptionX{11pt}{\renewcommand{\pt@size}{11pt}}
\DeclareOptionX{12pt}{\renewcommand{\pt@size}{12pt}}
```

\@jmlrproceedings The name of the proceedings.

```
\newcommand*{\@jmlrproceedings}{Journal of Machine Learning Research}
```

mlrabbrvproceedings The abbreviated name of the proceedings.

```
\newcommand*{\@jmlrabbrvproceedings}{JMLR}
```

\jmlrproceedings Sets the title and abbreviation of the proceedings

```
\newcommand*{\jmlrproceedings}[2]{%
  \renewcommand*{\@jmlrabbrvproceedings}{#1}%
  \renewcommand*{\@jmlrproceedings}{#2}%
}
```

\nowcp

```
\newcommand*{\jmlrnowcp}{%
  \jmlrproceedings{JMLR}{Journal of Machine Learning Research}%
}
```

\wcp

```
\newcommand*{\jmlrwcp}{%
  \jmlrproceedings{JMLR W\&CP}{JMLR: Workshop and Conference Proceedings}%
}
```

This isn't an article for a workshop:

```
\DeclareOptionX{nowcp}{\jmlrnowcp}
```

This is an article for a workshop

```
\DeclareOptionX{wcp}{\jmlrwcp}
```

The default paper size is letter, but provide 7 × 10in alternative:

```
\newif\ifviiXx
\viiXxfalse
\DeclareOptionX{7x10}{\viiXxtrue}
\DeclareOptionX{letterpaper}{\PassOptionsToPackage{letterpaper}{typearea}}
```

Pass all remaining options to article class:

```
\DeclareOptionX*{\PassOptionsToClass{\CurrentOption}{article}}
```

Execute required options:

```
\ExecuteOptions{twoside,letterpaper}
```

Process options:

```
\ProcessOptionsX
```

Load article class.

```
\LoadClass[\pt@size]{article}
```

Can't use geometry package because it doesn't play nicely with the combine class.

```
\ifviiXx
  \setlength{\paperwidth}{7in}
  \setlength{\paperheight}{10in}
  \setlength{\textwidth}{5.25in}
  \setlength{\textheight}{8.2in}
  \setlength{\topmargin}{0.4in}
  \setlength{\headheight}{0.2in}
  \setlength{\headsep}{0.2in}
  \setlength{\hoffset}{-1in}
  \setlength{\voffset}{-1in}
  \setlength{\evensidemargin}{0.75in}
  \setlength{\oddsidemargin}{1.0in}
\else
  \setlength{\oddsidemargin}{0.25in}
  \setlength{\evensidemargin}{0.25in}
  \setlength{\marginparwidth}{0.07 true in}
  \setlength{\topmargin}{-0.5in}
  \addtolength{\headsep}{0.25in}
  \setlength{\textheight}{8.5 true in}
  \setlength{\textwidth}{6.0 true in}
\fi
```

Need to add jmlr end document hook before natbib adds a `\clearpage` to it.

```
\AtEndDocument{\@jmlrenddoc}
```

Required packages:

```
\RequirePackage{amsmath}
\RequirePackage{amssymb}
\RequirePackage{natbib}
\RequirePackage{graphicx}
\RequirePackage{url}
\RequirePackage[x11names]{xcolor}
```

Allow old command names in the event that the proceedings contains a mixture of papers that use old and new versions. (This means that editors need to install the newer version.)

```
\RequirePackage[algo2e,ruled]{algorithm2e}
```

Do all the stuff that needs to be done before hyperref is loaded:

```
\jmlrprehyperref
```

Do stuff that has to come immediately before hyperref is loaded:

```
\@ifundefined{@pre@hyperref}{}{\@pre@hyperref}
```

Load hyperref:

```
\RequirePackage{hyperref}
\RequirePackage{nameref}
```

```
% Do stuff that has to come immediately after \sty{hyperref} and
% \sty{nameref} are loaded:
%\changes{1.16}{2012/05/15}{added \cs{@post@hyperref}}
\@ifundefined{@post@hyperref}{}{\@post@hyperref}
```

Set up hyperref options:

```
\hypersetup{colorlinks,
            linkcolor=blue,
            citecolor=blue,
            urlcolor=magenta,
            linktocpage,
            plainpages=false}
```

```
\ifgrayscale
```

If this is the print version, need to disable the hyperlinks:

```
  \hypersetup{draft}
\fi
```

Float parameters: the following settings were copied from jmlr2e.sty

```
\renewcommand{\topfraction}{0.95} % let figure take up nearly whole page
\renewcommand{\textfraction}{0.05} % let figure take up nearly whole page
```

widows/orphans

```
\widowpenalty=10000\relax
\clubpenalty=10000\relax
```

Set two-sided format

```
\@twosidetrue
```

Put marginal notes on the outside of the page

```
\@mparswitchtrue
```

Use the plainnat bibliography style and set up the required punctuation.

```
\bibliographystyle{plainnat}
\bibpunct{(}{)}{;}{a}{,}{,}
```

4.1.1 Sections

\section

```
\renewcommand{\section}{\@startsection{section}{1}{\z@}%
   {-0.24in \@plus -1ex \@minus -.2ex}%
   {0.10in \@plus.2ex}%
   {\normalfont\rmfamily\bfseries\large\raggedright}%
}
```

\subsection

```
\renewcommand\subsection{\@startsection{subsection}{2}{\z@}%
   {-0.20in \@plus -1ex \@minus -.2ex}%
   {0.08in \@plus .2ex}%
   {\normalfont\rmfamily\bfseries\normalsize\raggedright}%
}
```

\subsubsection

```
\renewcommand\subsubsection{\@startsection{subsubsection}{3}{\z@}%
   {-0.18in \@plus -1ex \@minus -.2ex}%
   {0.08in \@plus .2ex}%
   {\normalfont\normalsize\rmfamily\mdseries\scshape\raggedright}%
}
```

\paragraph

```
\renewcommand\paragraph{\@startsection{paragraph}{4}{\z@}%
   {1.5ex plus 0.5ex minus .2ex}%
   {-1em}%
   {\normalfont\normalsize\rmfamily\bfseries}%
}
```

\subparagraph

```
\renewcommand\subparagraph{\@startsection{subparagraph}{5}{\z@}%
   {1.5ex plus 0.5ex minus .2ex}%
   {-1em}%
   {\normalfont\normalsize\rmfamily\bfseries\itshape}}
```

\@seccntformat Redefine the way the section number appears in the section heading.

```
\renewcommand*\@seccntformat[1]{%
  \csname pre#1num\endcsname
  \csname the#1\endcsname.\enskip
}
```

4.1.2 Footnotes

\@makefntext Redefine \@makefntext so that the text between the footnote symbol and the footnote text can be redefined. (It looks odd having a full stop after a symbol.)

```
\renewcommand*{\@makefntext}[1]{%
  \@setpar
  {%
    \@@par
    \@tempdima\hsize
    \advance \@tempdima -15pt\relax
    \parshape \@ne 15pt \@tempdima
  }%
  \par
  \parindent 2em\noindent
  \hbox to \z@ {\hss {\@thefnmark }\footnoteseptext\hfil }#1%
}
```

\footnoteseptext The separation text between the footnote symbol and the footnote text.

```
\newcommand*{\footnoteseptext}{. }
```

\thanks

```
\renewcommand*{\thanks}[1]{%
  \footnotemark
  \protected@xdef\@thanks{\@thanks
    \protect\footnotetext{#1}}%
}
```

4.1.3 Article abstract

This code has been taken from jmlr2e.sty but with \bf updated to \bfseries

abstract

```
\ifjmlrhtml
  \renewenvironment{abstract}{\HCode{<h3>}Abstract\HCode{</h3>}}{}%
\else
  \renewenvironment{abstract}

  {{\centering\large\bfseries Abstract\par}\vspace{0.7ex}%
    \bgroup
       \leftskip 20pt\rightskip 20pt\small\noindent\ignorespaces}%
  {\par\egroup\vskip 0.25ex}
\fi
```

4.1.4 Keywords

This code has been taken from jmlr2e.sty but with \bf updated to \bfseries.

keywords

```
\newenvironment{keywords}
```

```
{\bgroup\leftskip 20pt\rightskip 20pt \small\noindent{\bfseries
Keywords:} \ignorespaces}%
{\par\egroup\vskip 0.25ex}
```

4.1.5 Title Page Information

This code has been taken from jmlr2e.sty.

Title stuff, borrowed in part from aaai92.sty

```
\newlength\aftertitskip     \newlength\beforetitskip
\newlength\interauthorskip  \newlength\aftermaketitskip
```

Changeable parameters.

```
\setlength\aftertitskip{0.1in plus 0.2in minus 0.2in}
\setlength\beforetitskip{0.05in plus 0.08in minus 0.08in}
\setlength\interauthorskip{0.08in plus 0.1in minus 0.1in}
\setlength\aftermaketitskip{0.3in plus 0.1in minus 0.1in}
```

`\titlebreak` Acts like new line in the paper title, but with jmlrbook acts like a space in the table of contents and bookmarks.

```
\newcommand*{\titlebreak}{\newline}
```

`\titletag`

```
\newcommand*{\titletag}[1]{}
```

`\title` Override definition of `\title` to allow for an optional argument (short title)

```
\renewcommand*{\title}[2][\@title]{%
  \def\@shorttitle{#1}%
  \def\@title{#2}%
  \protected@write\@auxout{}{\string\jmlr@title{#1}{#2}}%
  \jmlrtitlehook
}
```

`\@shorttitle` The short title of the document is initialised to `\jobname` to ensure a basic document will compile even if no title is set.

```
\newcommand*{\@shorttitle}{\jobname}
```

`\jmlrtitlehook`

```
\newcommand*{\jmlrtitlehook}{}
```

`\jmlr@title` AUX command provided for MakeJmlrBookGUI

```
\newcommand*{\jmlr@title}[2]{}
```

`\author` Override definition of `\author` to allow for an optional argument (list of authors for page heading)

```
\renewcommand*{\author}[2][]{%
  \def\@author{#2}%
  \def\@sauthor{#1}%
  \def\@jmlr@aux@author{#2}\@onelevel@sanitize\@jmlr@aux@author
```

```
  \ifx\@sauthor\@empty
    \let\@jmlr@aux@sauthor\@jmlr@aux@author
  \else
    \let\@shortauthor\@sauthor
    \def\@jmlr@aux@sauthor{#1}\@onelevel@sanitize\@jmlr@aux@sauthor
  \fi
  \jmlrauthorhook
  \protected@write\@auxout
    {}{\string\jmlr@author{\@jmlr@aux@sauthor}{\@jmlr@aux@author}}%
}
```

`\jmlrauthorhook`

```
\newcommand*{\jmlrauthorhook}{}
```

`\jmlr@author` AUX command provided for MakeJmlrBookGUI

```
\newcommand*{\jmlr@author}[2]{}
```

`\@shortauthor`

```
\newcommand*{\@shortauthor}{}
```

`\@firstauthor`

```
\newcommand*{\@firstauthor}{}
```

`\@firstsurname`

```
\newcommand*{\@firstsurname}{}
```

`\jmlrlength`

```
\newlength\jmlrlength
```

`\jmlrmaketitle` Make the title

```
\def\jmlrmaketitle{%
 \jmlrpremaketitlehook
 \def\@jmlr@authors@sep{, }%
 \par
 \begingroup

   \def\footnoteseptext{ }%
   \def\thempfn{\textsuperscript{\thefootnote}}%
   \def\thefootnote{\fnsymbol{footnote}}%

   \if@twocolumn
     \twocolumn[\@jmlrmaketitle]%
   \else
     \@jmlrmaketitle
   \fi
   \@thanks
 \endgroup
\label{jmlrstart}%
```

```
\ifx\@sauthor\@empty
  \settowidth{\jmlrlength}{\@evenhead}%
  \ifdim\jmlrlength>\textwidth
    \def\@shortauthor{\@firstsurname\space et al.}%
  \fi
\fi
\settowidth{\jmlrlength}{\@titlefoot}%
\ifdim\jmlrlength>\textwidth
  \def\@jmlrauthors{\@firstauthor\space \emph{et al}}%
\fi
\jmlrmaketitlehook
\thispagestyle{jmlrtps}%
\setcounter{footnote}{0}%
\let\maketitle\relax \let\@maketitle\relax
\gdef\@thanks{}\gdef\@author{}\let\thanks\@gobble
\def\@jmlr@authors@sep{ \& }%
}
```

`\jmlrmaketitlehook`

```
\newcommand*{\jmlrmaketitlehook}{}
```

`mlrpremaketitlehook`

```
\newcommand*{\jmlrpremaketitlehook}{}
```

Provide a different title layout for HTML

`\jmlrhtmlmaketitle`

```
\newcommand{\jmlrhtmlmaketitle}{%
  \ifx\@jmlr@authors\@empty
    \sbox\jmlrbox{\let\addr\relax\@author}%
  \fi
  \noindent\HCode{<h2>}\@title\HCode{</h2>}
  \noindent\@jmlr@authors
}
```

`\jmlrbox` Define a save box

```
\newsavebox\jmlrbox
```

`\maketitle` If we're creating HTML, set `\maketitle` to `\jmlrhtmlmaketitle`, otherwise set it to `\jmlrmaketitle`

```
\ifjmlrhtml
  \let\maketitle\jmlrhtmlmaketitle
\else
  \let\maketitle\jmlrmaketitle
\fi
```

Author and editor information.

```
\def\@startauthor{\noindent \normalsize\bfseries}
```

```
\def\@endauthor{}
\def\@starteditor{\noindent \small {\bfseries \@edname:~}}
\def\@endeditor{\normalsize}
```

Provide hooks to make it easier to adapted with combine class.

\jmlrpretitle

```
\def\jmlrpretitle{\vskip\beforetitskip\begin{center}\Large\bfseries}
```

\jmlrposttitle

```
\def\jmlrposttitle{\par\end{center}\vskip\aftertitskip}
```

\nametag

```
\newcommand*{\nametag}[1]{}
```

\jmlrpreauthor

```
\def\jmlrpreauthor{%
\bgroup
  \def\nametag##1{##1}%
  \def\and{\unskip\enspace{\normalfont and}\enspace}%
  \def\addr{\mdseries\small\itshape}%
  \def\name{\ClassError{jmlr}{Use \string\Name{Author's Name} not \string\name}{}}%
  \def\email{\ClassError{jmlr}{Use \string\Email{address} not \string\email}{}}%
  \def\AND{\@endauthor\normalfont\hss \vskip \interauthorskip
    \@startauthor}%
  \@startauthor
}
```

\addr Initialise to do nothing if used outside of \author

```
\newcommand{\addr}{}
```

\@email

```
\def\@email{\hfill\small\mdseries\scshape}%
```

\@name

```
\def\@name{\normalsize\upshape\bfseries}%
```

\@parsename Parse a name. Appends forename to \@forenames and stores surname in \@surname.

```
\def\@parsename#1 #2\end@parsename{%
  \def\@tmp{#2}%
  \ifx\@tmp\@nnil
    \def\@surname{#1}%
    \let\@nextparsename\@parsenamenoop
  \else
    \@getinitial#1-\relax\relax\end@getinitial
    \ifx\@forenames\@empty
      \def\@forenames{#1}%
```

```
      \protected@edef\@initials{\@initial}%
    \else
      \expandafter\toks@\expandafter{\@forenames}%
      \edef\@forenames{\space\the\toks@}%
      \expandafter\toks@\expandafter{\@initials}%
      \protected@edef\@initials{\the\toks@\@initial}%
    \fi
    \let\@nextparsename\@parsename
  \fi
  \@nextparsename#2\end@parsename
}
\def\@parsenamenoop#1\end@parsename{}
```

\@getinitial

```
\def\@getinitial#1#2-#3#4\end@getinitial{%
  \def\@jmlr@tmp{#3}%
  \if\@jmlr@tmp\relax
    \def\@initial{#1.}%
  \else
    \def\@initial{#1.-#3.}%
  \fi
}
```

\Name Get the author's name and add surname to \@shortauthors. (Surnames with "von" parts or with spaces in should be enclosed in braces)

```
\newcommand*{\Name}[2][]{%
  \def\@authorlist{#1}%
  \def\@forenames{}%
  \def\@surname{}%
  \def\nametag##1{}%
  \@parsename#2 \@nil\end@parsename
  \ifx\@shortauthor\@empty
    \ifx\@sauthor\@empty
      \global\let\@shortauthor\@surname
      \global\let\@firstsurname\@surname
    \fi
    \ifx\@authorlist\@empty
      \protected@xdef\@jmlrauthors{\@initials\space\@surname}%
    \else
      \protected@xdef\@jmlrauthors{\@authorlist}%
    \fi
    \global\let\@firstauthor\@jmlrauthors
  \else
    \ifx\@sauthor\@empty
      \expandafter\toks@\expandafter{\@shortauthor}%
      \protected@xdef\@shortauthor{\the\toks@\space\@surname}%
    \fi
    \ifx\@authorlist\@empty
      \ifx\@jmlrauthors\@empty
```

```
        \protected@xdef\@jmlrauthors{\@initials\space\@surname}%
      \else
        \protected@xdef\@jmlrauthors{\@jmlrauthors
          \noexpand\@jmlr@authors@sep
          \@initials\space\@surname}%
      \fi
    \else
      \ifx\@jmlrauthors\@empty
        \protected@xdef\@jmlrauthors{\@authorlist}%
      \else
        \protected@xdef\@jmlrauthors{\@jmlrauthors
          \noexpand\@jmlr@authors@sep
          \@authorlist
        }%
      \fi
    \fi
  \fi
  \def\nametag##1{##1}%
  \@name #2%
}
```

\jmlrabbrnamelist Display list of names in abbreviated form. (Mainly designed for use with make-jmlrbook for the preface authors.) The author should be grouped if the name contains a comma.

```
\newcommand*{\jmlrabbrnamelist}[1]{%
  \def\nametag##1{}%
  \def\@jmlr@authors@sep{, }%
  \def\@jmlr@namelist{}%
  \@for\@thisname:=#1\do{%
    \expandafter\@jmlrabbrname\expandafter{\@thisname}%
    \ifx\@jmlr@namelist\@empty
       \protected@edef\@jmlr@namelist{%
          \@initials\space\@surname
       }%
    \else
       \protected@edef\@jmlr@namelist{%
          \@jmlr@namelist
          \noexpand\@jmlr@authors@sep
          \@initials\space\@surname
       }%
    \fi
  }%
  \def\@jmlr@authors@sep{ \& }%
  \@jmlr@namelist
}
```

\@jmlrabbrname

```
\newcommand*{\@jmlrabbrname}[1]{%
  \def\@initials{}%
```

```
  \def\@surname{}%
  \def\@forenames{}%
  \@parsename#1 \@nil\end@parsename
}
```

`\Email`

```
\newcommand*{\Email}[1]{{\@email #1}}
```

`\jmlrpostauthor`

```
\def\jmlrpostauthor{\@endauthor\egroup
  \par
  \vskip \aftermaketitskip
  \noindent
  \ifx\@editor\@empty
  \else
    \@starteditor \@editor \@endeditor
  \fi
  \vskip \aftermaketitskip
}
```

`\@jmlrmaketitle`

```
\def\@jmlrmaketitle{\vbox{\hsize\textwidth
 \linewidth\hsize
 \jmlrpretitle
  {%
    \def\titletag##1{##1}%
    \@title
  }%
 \jmlrposttitle
 \jmlrpreauthor \@author \jmlrpostauthor
}}
```

`\kernelmachines` Convenience command

```
\newcommand*\kernelmachines{(for
  {\textsc{http://www.kernel-machines.org}})}
```

`\editorname` Label for the editor

```
\newcommand*{\editorname}{Editor}
```

`\editorsname` Label for the editor

```
\newcommand*{\editorsname}{Editors}
```

`\@edname` This will either be Editor or Editors depending on whether `\editor` or `\editors` is used. Defaults to `\editorname`

```
\let\@edname\editorname
```

`\@editor` The editor or editors are stored in `\@editor`

```
\def\@editor{}
```

\editor A single editor

```
\def\editor#1{%
  \global\let\@edname\editorname
  \gdef\@editor{#1}%
}
```

\editors Multiple editors

```
\def\editors#1{%
  \global\let\@edname\editorsname
  \gdef\@editor{#1}%
}
```

4.1.6 Pagestyles

This is taken from jmlr2e.sty

\firstpageno Set the page counter.

```
\def\firstpageno#1{\setcounter{page}{#1}}
```

\startpage If \startpage has been defined, use its value for the first page.

```
\@ifundefined{startpage}{}{\firstpageno{\startpage}}
```

Label end page.

\@jmlrenddoc Label end page

```
\newcommand*{\@jmlrenddoc}{%
  \phantomsection
  \protected@edef\@currentlabelname{end of \@shorttitle}%
  \label{jmlrend}\null
  \global\let\@reprint\@empty
}
```

\@titlefoot

```
\newcommand*{\@titlefoot}{\scriptsize\copyright\space\@jmlryear
    \space\@jmlr@authors.\hfill
    \@reprint
}
```

\reprint

```
\let\@reprint\@empty
\newcommand{\reprint}[1]{%
  \gdef\@reprint{Reprinted with permission for JMLR#1}}
```

\ps@jmlrtps Title page style

```
\newcommand\ps@jmlrtps{%
  \let\@mkboth\@gobbletwo
  \def\@oddhead{\scriptsize \@jmlrproceedings
    \ifx\@jmlrvolume\@empty
```

```
    \else
       \space\@jmlrvolume
       \ifx\@jmlrissue\@empty\else(\@jmlrissue)\fi
       \ifx\@jmlrpages\@empty
          \ifx\@jmlryear\@empty
          \else
             \if\@jmlrissue\@empty,\fi
          \fi
       \else
          :%
       \fi
    \fi
    \ifx\@jmlrpages\@empty
    \else
       \ifx\@jmlrvolume\@empty\space\fi
       \@jmlrpages
       \ifx\@jmlryear\@empty\else,\fi
    \fi
    \ifx\@jmlryear\@empty\else\space\@jmlryear\fi
    \hfill
    \ifx\@jmlrworkshop\@empty
      \ifx\@jmlrsubmitted\@empty
      \else
        Submitted \@jmlrsubmitted
        \ifx\@jmlrpublished\@empty\else;\fi
      \fi
      \ifx\@jmlrpublished\@empty
      \else
        \space Published \@jmlrpublished
      \fi
    \else
      \space\@jmlrworkshop
    \fi
  }%
  \let\@evenhead\@oddhead
  \def\@oddfoot{\@titlefoot}%
  \let\@evenfoot\@oddfoot
}
```

\ps@jmlrps Page style for subsequent pages

```
\def\ps@jmlrps{%
  \let\@mkboth\@gobbletwo
  \def\@oddhead{\hfill {\small\scshape \@shorttitle} \hfill}%
  \def\@oddfoot{\hfill \small\rmfamily \thepage \hfill}%
  \def\@evenhead{\hfill {\small\scshape \@shortauthor} \hfill}%
  \def\@evenfoot{\hfill \small\rmfamily \thepage \hfill}%
}%
```

Set the page style:

```
\pagestyle{jmlrps}
```

Set the heading information:

\@jmlrvolume The volume number:

```
\providecommand*{\@jmlrvolume}{}
```

\jmlrvolume

```
\newcommand*{\jmlrvolume}[1]{\renewcommand*{\@jmlrvolume}{#1}}
```

\@jmlrissue The issue number:

```
\providecommand*{\@jmlrissue}{}
```

\jmlrissue

```
\newcommand*{\jmlrissue}[1]{\renewcommand*{\@jmlrissue}{#1}}
```

\@jmlryear The year of publication:

```
\providecommand*{\@jmlryear}{}
```

\jmlryear

```
\newcommand*{\jmlryear}[1]{\renewcommand*{\@jmlryear}{#1}}
```

\@jmlrpages The page range:

```
\providecommand*\@jmlrpages{\pageref{jmlrstart}--\pageref{jmlrend}}
```

\jmlrpages

```
\newcommand*{\jmlrpages}[1]{\renewcommand*{\@jmlrpages}{#1}}
```

\@jmlrsubmitted The date the article was submitted:

```
\providecommand*\@jmlrsubmitted{}
```

\jmlrsubmitted

```
\newcommand*{\jmlrsubmitted}[1]{\renewcommand*{\@jmlrsubmitted}{#1}}
```

\@jmlrpublished The date the article was published:

```
\providecommand*\@jmlrpublished{}
```

\jmlrpublished

```
\newcommand*{\jmlrpublished}[1]{\renewcommand*{\@jmlrpublished}{#1}}
```

\@jmlrworkshop The name of the workshop:

```
\providecommand*\@jmlrworkshop{}
```

\jmlrworkshop

```
\newcommand*{\jmlrworkshop}[1]{%
 \renewcommand*{\@jmlrworkshop}{#1}%
 \protected@write\@auxout{}{\string\jmlr@workshop{#1}}%
}
```

\jmlr@workshop
```
\newcommand*{\jmlr@workshop}[1]{}
```
\date
```
\renewcommand*{\date}[1]{%
 \renewcommand*{\@date}{#1}%
 \protected@write\@auxout{}{\string\jmlr@date{#1}}%
}
```
\jmlr@date
```
\newcommand*{\jmlr@date}[1]{}
```
\@jmlrauthors
```
\newcommand*{\@jmlrauthors}{}
```
\@jmlr@authors
```
\newcommand*{\@jmlr@authors}{\@jmlrauthors}
```
\jmlrauthors This is provided in case \Name doesn't set \@jmlrauthors correctly.
```
\newcommand*{\jmlrauthors}[1]{\global\def\@jmlr@authors{#1}}
```

4.1.7 Miscellany

This code was taken from jmlr2e.sty.

Define macros for figure captions and table titles

```
\def\figurecaption#1#2{\noindent\hangindent 40pt
                       \hbox to 36pt {\small\slshape #1 \hfil}
                       \ignorespaces {\small #2}}
```

Figurecenter prints the caption title centered.

```
\def\figurecenter#1#2{\centerline{{\slshape #1} #2}}
\def\figurecenter#1#2{\centerline{{\small\slshape #1} {\small #2}}}
```

Allow "hanging indents" in long captions

\@makecaption
```
\long\def\@makecaption#1#2{%
   \vskip 10pt
   \setbox\@tempboxa\hbox{#1: #2}%
   \ifdim \wd\@tempboxa >\hsize               % IF longer than one line:
       \begin{list}{#1:}{%
       \settowidth{\labelwidth}{#1:}
       \setlength{\leftmargin}{\labelwidth}
       \addtolength{\leftmargin}{\labelsep}
        }\item #2 \end{list}\par   % Output in quote mode
     \else                                     %   ELSE  center.
       \hbox to\hsize{\hfil\box\@tempboxa\hfil}
   \fi}
```

Define strut macros for skipping spaces above and below text in a tabular environment.

```
\def\abovestrut#1{\rule[0in]{0in}{#1}\ignorespaces}
\def\belowstrut#1{\rule[-#1]{0in}{#1}\ignorespaces}
```

`\acks` Acknowledgments

```
\long\def\acks#1{\section*{Acknowledgments}#1}
```

Research Note

`\researchnote`

```
\long\def\researchnote#1{\noindent {\LARGE\itshape Research Note} #1}
```

`\set`

```
\newcommand*{\set}[1]{\ensuremath{\mathcal{#1}}}
```

Convenient macros for cross-referencing.

```
\newcommand*{\@jmlr@reflistsep}{, }
\newcommand*{\@jmlr@reflistlastsep}{ and }
\newcommand*{\sectionrefname}{Section}
\newcommand*{\sectionsrefname}{Sections}
\newcommand*{\equationrefname}{Equation}
\newcommand*{\equationsrefname}{Equations}
\newcommand*{\tablerefname}{Table}
\newcommand*{\tablesrefname}{Tables}
\newcommand*{\figurerefname}{Figure}
\newcommand*{\figuresrefname}{Figures}
\newcommand*{\algorithmrefname}{Algorithm}
\newcommand*{\algorithmsrefname}{Algorithms}
\newcommand*{\theoremrefname}{Theorem}
\newcommand*{\theoremsrefname}{Theorems}
\newcommand*{\lemmarefname}{Lemma}
\newcommand*{\lemmasrefname}{Lemmas}
\newcommand*{\remarkrefname}{Remark}
\newcommand*{\remarksrefname}{Remarks}
\newcommand*{\corollaryrefname}{Corollary}
\newcommand*{\corollarysrefname}{Corollaries}
\newcommand*{\definitionrefname}{Definition}
\newcommand*{\definitionsrefname}{Definitions}
\newcommand*{\conjecturerefname}{Conjecture}
\newcommand*{\conjecturesrefname}{Conjectures}
\newcommand*{\axiomrefname}{Axiom}
\newcommand*{\axiomsrefname}{Axioms}
\newcommand*{\examplerefname}{Example}
\newcommand*{\examplesrefname}{Examples}
\newcommand*{\appendixrefname}{Appendix}
\newcommand*{\appendixsrefname}{Appendices}
\newcommand*{\partrefname}{Part}
\newcommand*{\partsrefname}{Parts}
```

\objectref Cross-reference a particular structural element. The first argument is the list of labels, the second argument is a control sequence containing the singular tag, the third argument a control sequence containing the plural tag, the fourth argument is text to go before the reference number, e.g. an opening bracket, and the fifth argument is text to go after the reference number, e.g. a closing bracket.

```
\DeclareRobustCommand*{\objectref}[5]{%
  \let\@objectname\@empty
  \def\@objectref{}%
  \let\@prevsep\@empty
  \@for\@thislabel:=#1\do{%
    \toks@{\@prevsep}%
    \protected@edef\@objectref{\@objectref\the\toks@
      #4\ref{\@thislabel}#5}%
    \ifx\@objectname\@empty
      \let\@objectname#2% singular tag
    \else
      \let\@objectname#3% plural tag
      \let\@prevsep\@jmlr@reflistsep
    \fi
  }%
  \ifx\@objectname#3% plural tag
    \let\@prevsep\@jmlr@reflistlastsep
  \fi
  \@objectname~\@objectref
}
```

\sectionref

```
\newcommand*{\sectionref}[1]{%
  \objectref{#1}{\sectionrefname}{\sectionsrefname}{}{}}
```

\equationref

```
\newcommand*{\equationref}[1]{%
  \objectref{#1}{\equationrefname}{\equationsrefname}()}
```

\tableref

```
\newcommand*{\tableref}[1]{%
  \objectref{#1}{\tablerefname}{\tablesrefname}{}{}}
```

\figureref

```
\newcommand*{\figureref}[1]{%
  \objectref{#1}{\figurerefname}{\figuresrefname}{}{}}
```

\algorithmref

```
\newcommand*{\algorithmref}[1]{%
  \objectref{#1}{\algorithmrefname}{\algorithmsrefname}{}{}}
```

\theoremmref

```
\newcommand*{\theoremref}[1]{%
  \objectref{#1}{\theoremrefname}{\theoremsrefname}{}{}}
```

\lemmaref

```
\newcommand*{\lemmaref}[1]{%
  \objectref{#1}{\lemmarefname}{\lemmasrefname}{}{}}
```

\remarkref

```
\newcommand*{\remarkref}[1]{%
  \objectref{#1}{\remarkrefname}{\remarksrefname}{}{}}
```

\corollaryref

```
\newcommand*{\corollaryref}[1]{%
  \objectref{#1}{\corollaryrefname}{\corollarysrefname}{}{}}
```

\definitionref

```
\newcommand*{\definitionref}[1]{%
  \objectref{#1}{\definitionrefname}{\definitionsrefname}{}{}}
```

\conjectureref

```
\newcommand*{\conjectureref}[1]{%
  \objectref{#1}{\conjecturerefname}{\conjecturesrefname}{}{}}
```

\axiomref

```
\newcommand*{\axiomref}[1]{%
  \objectref{#1}{\axiomrefname}{\axiomsrefname}{}{}}
```

\exampleref

```
\newcommand*{\exampleref}[1]{%
  \objectref{#1}{\examplerefname}{\examplesrefname}{}{}}
```

\appendixref

```
\newcommand*{\appendixref}[1]{%
  \objectref{#1}{\appendixrefname}{\appendixsrefname}{}{}}
```

\partref

```
\newcommand*{\partref}[1]{%
  \objectref{#1}{\partrefname}{\partsrefname}{}{}}
```

\floatconts The first argument is the label, the second argument contains the caption (using \caption) and the third argument is the contents of the float

```
\newcommand{\floatconts}[3]{%
  \@ifundefined{\@captype conts}{\tableconts{#1}{#2}{#3}}%
  {\csname\@captype conts\endcsname{#1}{#2}{#3}}%
}
```

\tableconts

```
\newcommand{\tableconts}[3]{%
  \iftablecaptiontop
    #2\label{#1}\vskip\baselineskip
    {\centering #3\par}%
  \else
    {\centering #3\par}%
    \vskip\baselineskip
    #2\label{#1}%
  \fi
}
```

\figureconts

```
\newcommand{\figureconts}[3]{%
  {\centering #3\par}%
  \vskip\baselineskip
  #2\label{#1}%
}
```

\algocfconts

```
\newcommand{\algocfconts}[3]{%
  \@algocf@pre@ruled
  #2\label{#1}\kern2pt\hrule height.8pt depth0pt\kern2pt%
  #3\@algocf@pre@ruled
}
```

\includeteximage Provide a command like \includegraphics that includes a file containing LaTeX picture code (e.g. pgf).

```
\newcommand*{\includeteximage}[2][]{%
  \def\Gin@req@sizes{%
    \Gin@req@height\Gin@nat@height
    \Gin@req@width\Gin@nat@width}%
  \begingroup
    \@tempswafalse
    \let\input@path\Ginput@path
    \toks@{\InputIfFileExists{#2}{}{\@warning{File `#1' not found}}}%
    \setkeys{Gin}{#1}%
    \Gin@esetsize
    \the\toks@
  \endgroup
}
```

\ifprint Provide command to check if this is the printed greyscale version or the online colour version.

```
\providecommand{\ifprint}[2]{\ifgrayscale#1\else#2\fi}
```

Modify \includegraphics so that it can pick up the greyscale version of images if this is the print version.

```
\ifjmlrhtml
\else
  \let\@org@Ginclude@graphics\Ginclude@graphics
  \def\Ginclude@graphics#1{%
    \begingroup
    \let\input@path\Ginput@path
    \ifprint{\filename@parse{#1-gray}}{\filename@parse{#1}}%
    \ifx\filename@ext\relax
      \@for\Gin@temp:=\Gin@extensions\do{%
        \ifx\Gin@ext\relax
          \Gin@getbase\Gin@temp
        \fi}%
    \else
      \ifprint{\filename@parse{#1}}{}%
      \Gin@getbase{\Gin@sepdefault\filename@ext}%
      \ifx\Gin@ext\relax
         \@warning{File `#1' not found}%
         \def\Gin@base{\filename@area\filename@base}%
         \edef\Gin@ext{\Gin@sepdefault\filename@ext}%
      \fi
    \fi
      \ifx\Gin@ext\relax
        \ifprint{\@org@Ginclude@graphics{#1}}%
        {%
           \@latex@error{File `#1' not found}%
           {I could not locate the file with any of these extensions:^^J%
            \Gin@extensions^^J\@ehc}%
        }%
      \else
         \@ifundefined{Gin@rule@\Gin@ext}%
           {\ifx\Gin@rule@*\@undefined
              \@latex@error{Unknown graphics extension: \Gin@ext}\@ehc
            \else
              \expandafter\Gin@setfile\Gin@rule@*{\Gin@base\Gin@ext}%
             \fi}%
           {\expandafter\expandafter\expandafter\Gin@setfile
               \csname Gin@rule@\Gin@ext\endcsname{\Gin@base\Gin@ext}}%
      \fi
    \endgroup}
\fi
```

The algorithm environment should float like a figure or table. It should use the same counter as the algorithm2e environment.

```
\newenvironment{algorithm}[1][htbp]%
{%
  \begin{algocf}[#1]%
  \renewcommand\@makecaption[2]{%
    \hskip\AlCapHSkip
    \parbox[t]{\hsize}{\algocf@captiontext{##1}{##2}}%
  }%
```

```
}%
{%
  \end{algocf}%
}
```

Set the algorithm margin to zero.

```
\setlength\algomargin{0pt}
```

\artappendix Switch to appendices in an article

```
\newcommand{\artappendix}{\par
  \setcounter{section}{0}
  \setcounter{subsection}{0}
  \def\thesection{\Alph{section}}

  \def\theHsection{\theHchapter.\Alph{section}}
  \def\presectionnum{Appendix~}%
}
```

The default assumes a stand-alone article.

\appendix

```
\let\appendix\artappendix
```

\booklinebreak Provided for book production editors to fine tune the book line breaking. Does nothing in the standalone article.

```
\newcommand{\booklinebreak}[1][]{}
```

4.1.8 Proofs and Theorems

This code is taken from jmlr2e.sty

\BlackBox End of proof marker

```
\newcommand{\BlackBox}{\rule{1.5ex}{1.5ex}}
```

proof Proof environment

```
\newenvironment{proof}{\par\noindent{\bfseries\upshape
  Proof\ }}{\hfill\BlackBox\\[2mm]}
```

Since theorem, ntheorem and amsthm all cause problems with this class, provide a simple alternative.

\theorembodyfont `\theorembodyfont{⟨font declarations⟩}`

```
\newcommand*{\theorembodyfont}[1]{%
  \renewcommand*{\@theorembodyfont}{#1}%
}
\newcommand*{\@theorembodyfont}{\normalfont\itshape}%
```

\theoremheaderfont

\theoremheaderfont{⟨*font declarations*⟩}

```
\newcommand*{\theoremheaderfont}[1]{%
  \renewcommand*{\@theoremheaderfont}{#1}%
}
\newcommand*{\@theoremheaderfont}{\normalfont\bfseries }%
```

\theoremsep

\theoremsep{⟨*separation code*⟩}

```
\newcommand*{\theoremsep}[1]{%
  \renewcommand*{\@theoremsep}{#1}%
}
\newcommand*{\@theoremsep}{}%
```

\theorempostheader

\theorempostheader{⟨*text*⟩}

```
\newcommand*{\theorempostheader}[1]{%
  \renewcommand*{\@theorempostheader}{#1}%
}
\newcommand*{\@theorempostheader}{}%
```

\newtheorem

```
\let\jmlr@org@newtheorem\newtheorem
\renewcommand*{\newtheorem}{\@ifstar\jmlr@snewtheorem\jmlr@newtheorem}
```

Define starred version:

\newtheorem*{⟨*env-name*⟩}{⟨*title tag*⟩}

```
\newcommand*{\jmlr@snewtheorem}[2]{%
  \cslet{jmlr@thm@#1@body@font}{\@theorembodyfont}%
  \cslet{jmlr@thm@#1@header@font}{\@theoremheaderfont}%
  \cslet{jmlr@thm@#1@sep}{\@theoremsep}%
  \cslet{jmlr@thm@#1@postheader}{\@theorempostheader}%
  \newenvironment{#1}%
  {%
    \trivlist
      \item
      [%
        \hskip\labelsep{\csuse{jmlr@thm@#1@header@font}#2%
          \csuse{jmlr@thm@#1@postheader}%
        }%
      ]%
      \mbox{}\csuse{jmlr@thm@#1@sep}%
      \csuse{jmlr@thm@#1@body@font}%
  }%
```

```
  {%
    \endtrivlist
  }%
}
```

Unstarred version needs adjusting to take the style into account:

\@othm

```
\newcommand{\jmlr@newtheorem}[1]{%
  \cslet{jmlr@thm@#1@body@font}{\@theorembodyfont}%
  \cslet{jmlr@thm@#1@header@font}{\@theoremheaderfont}%
  \cslet{jmlr@thm@#1@sep}{\@theoremsep}%
  \cslet{jmlr@thm@#1@postheader}{\@theorempostheader}%
  \jmlr@org@newtheorem{#1}%
}
```

\@xthm

```
\renewcommand*{\@xthm}[2]{%
  \def\@jmlr@currentthm{#1}%
  \@begintheorem{#2}{\csname the#1\endcsname}%
  \ignorespaces
}
```

\@ythm

```
\def\@ythm#1#2[#3]{%
  \def\@jmlr@currentthm{#1}%
  \@opargbegintheorem{#2}{\csname the#1\endcsname}{#3}%
  \ignorespaces
}
```

\@begintheorem

```
\renewcommand*{\@begintheorem}[2]{%
  \ifdef{\@jmlr@currentthm}%
  {%
    \letcs{\jmlr@this@theoremheader}{jmlr@thm@\@jmlr@currentthm @header@font}%
    \letcs{\jmlr@this@theorembody}{jmlr@thm@\@jmlr@currentthm @body@font}%
    \letcs{\jmlr@this@theoremsep}{jmlr@thm@\@jmlr@currentthm @sep}%
    \letcs{\jmlr@this@theorempostheader}%
       {jmlr@thm@\@jmlr@currentthm @postheader}%
  }%
  {%
    \let\jmlr@this@theorembody\@theorembodyfont
    \let\jmlr@this@theoremheader\@theoremheaderfont
    \let\jmlr@this@theoremsep\@theoremsep
    \let\jmlr@this@theorempostheader\@theorempostheader
  }%
  \trivlist
    \item
     [%
```

```
      \hskip\labelsep{\jmlr@this@theoremheader #1\ #2%
       \jmlr@this@theorempostheader}%
     ]%
    \mbox{}\jmlr@this@theoremsep
    \jmlr@this@theorembody
}

\@opargbegintheorem

\renewcommand*{\@opargbegintheorem}[3]{%
  \ifdef{\@jmlr@currentthm}%
  {%
    \letcs{\jmlr@this@theoremheader}{jmlr@thm@\@jmlr@currentthm @header@font}%
    \letcs{\jmlr@this@theorembody}{jmlr@thm@\@jmlr@currentthm @body@font}%
    \letcs{\jmlr@this@theoremsep}{jmlr@thm@\@jmlr@currentthm @sep}%
    \letcs{\jmlr@this@theorempostheader}%
       {jmlr@thm@\@jmlr@currentthm @postheader}%
  }%
  {%
    \let\jmlr@this@theorembody\@theorembodyfont
    \let\jmlr@this@theoremheader\@theoremheaderfont
    \let\jmlr@this@theoremsep\@theoremsep
    \let\jmlr@this@theorempostheader\@theorempostheader
  }%
  \trivlist
   \item[\hskip\labelsep{\jmlr@this@theoremheader #1\ #2\ (#3)%
     \jmlr@this@theorempostheader}]%
   \mbox{}\jmlr@this@theoremsep
   \jmlr@this@theorembody
}

      example

\newtheorem{example}{Example}

      theorem

\newtheorem{theorem}{Theorem}

        lemma

\newtheorem{lemma}[theorem]{Lemma}

   proposition

\newtheorem{proposition}[theorem]{Proposition}

       remark

\newtheorem{remark}[theorem]{Remark}

     corollary

\newtheorem{corollary}[theorem]{Corollary}
```

definition

```
\newtheorem{definition}[theorem]{Definition}
```

conjecture

```
\newtheorem{conjecture}[theorem]{Conjecture}
```

axiom

```
\newtheorem{axiom}[theorem]{Axiom}
```

\vec Redefine \vec to produce a bold symbol

```
\renewcommand*{\vec}[1]{\boldsymbol{#1}}
```

enumerate* Define an enumerate style environment where the nested environments all use the same counter. It uses the enumi counter.

```
\newenvironment{enumerate*}%
{%
  \ifnum\@enumdepth=0\relax
    \setcounter{enumi}{0}%
  \fi
  \ifnum\@enumdepth>\thr@@
    \@toodeep
  \else
    \advance\@enumdepth\@ne
    \def\@enumctr{enumi}%
    \list
      {\labelenumi}%
      {\@nmbrlisttrue\def\@listctr{enumi}%
       \def\makelabel##1{\hss\llap{##1}}}%
  \fi
}%
{\endlist}
```

altdescription Define a description like environment where the indent is computed from the widest label. The optional argument is the widest label.

```
\newenvironment{altdescription}[1]%
  {\list{}%
    {%
      \settowidth{\labelwidth}{\altdescriptionlabel{#1}}%
      \setlength{\labelsep}{15pt}%
      \setlength{\leftmargin}{2\labelsep}%
      \addtolength{\leftmargin}{\labelwidth}%
      \setlength{\rightmargin}{\labelsep}%
      \let\makelabel\altdescriptionlabel
    }%
  }%
  {\endlist}

\newcommand*{\altdescriptionlabel}[1]{\normalfont\bfseries #1\hfill}
```

\mailto Syntax: \mailto{⟨*address*⟩}

```
\newcommand*{\mailto}[1]{\texttt{#1}}
```

The subfig package breaks jmlrbook.cls, so define \subfig here. (This is fairly primitive.)

\c@subfigure Define subfigure counter:

```
\newcounter{subfigure}
\@addtoreset{subfigure}{figure}
```

\thesubfigure

```
\renewcommand*{\thesubfigure}{\alph{subfigure}}
```

\p@subfigure

```
\renewcommand*{\p@subfigure}{\expandafter\@p@subfigure}
\newcommand*{\@p@subfigure}[1]{%
  \protect\@subfigurelabel{\thefigure}{\thesubfigure}%
}
```

\@subfigurelabel Define how label appears.

```
\newcommand*\@subfigurelabel[2]{#1\subfigurelabel{#2}}
```

\subfigref Reference the sub-figure without including the figure number.

```
\newcommand*\@subfigref[1]{%
  {%
    \def\@subfigurelabel##1##2{\subfigurelabel{##2}}%
    \ref{#1}%
  }%
}
\newcommand*{\subfigref}[1]{%
  \let\@objectname\@empty
  \def\@objectref{}%
  \let\@prevsep\@empty
  \@for\@thislabel:=#1\do{%
    \toks@{\@prevsep}%
    \protected@edef\@objectref{\@objectref\the\toks@
      \protect\@subfigref{\@thislabel}}%
      \ifx\@objectname\@empty
\let\@objectname\@nil
      \else
\let\@objectname\relax
        \let\@prevsep\@jmlr@reflistsep
      \fi
  }%
  \ifx\@objectname\relax
    \let\@prevsep\@jmlr@reflistlastsep
  \fi
  \@objectref
}
```

\subfigurelabel

```
\newcommand*{\subfigurelabel}[1]{(\emph{#1})}
```

\@subfloatcapbox Box to store subfloat caption.

```
\newsavebox\@subfloatcapbox
```

\@subfloatcontsbox Box to store subfloat contents.

```
\newsavebox\@subfloatcontsbox
```

\subfigure

```
\newcommand*{\subfigure}[1][]{%
  \bgroup
  \def\@subfigcap{#1}%
  \@subfigure
}

\newcommand*{\@subfigure}[2][b]{%
  \advance\c@figure by 1\relax
  \refstepcounter{subfigure}%
  \sbox\@subfloatcapbox{\subfigurelabel{\thesubfigure}%
  \ifx\@subfigcap\@empty
  \else
    \space\@subfigcap
  \fi}%
  \sbox\@subfloatcontsbox{#2}%
  \settowidth{\@tempdima}{\usebox\@subfloatcontsbox}%
  \settowidth{\@tempdimb}{\usebox\@subfloatcapbox}%
  \ifdim\@tempdimb>\@tempdima
    \settowidth\@tempdimb{\subfigurelabel{\thesubfigure}\space}%
    \addtolength{\@tempdima}{-\@tempdimb}%
    \sbox\@subfloatcapbox{\subfigurelabel{\thesubfigure}\space
      \parbox[t]{\@tempdima}{\@subfigcap}}%
  \fi
  \begin{tabular}[#1]{@{}c@{}}%
  \usebox\@subfloatcontsbox\\\usebox\@subfloatcapbox
  \end{tabular}%
  \egroup
}
```

Sub-tables:

\c@subtable Define subtable counter:

```
\newcounter{subtable}
\@addtoreset{subtable}{table}
```

\thesubtable

```
\renewcommand*{\thesubtable}{\alph{subtable}}
```

\p@subtable

```
\renewcommand*{\p@subtable}{\expandafter\@p@subtable}
\newcommand*{\@p@subtable}[1]{%
  \protect\@subtablelabel{\thetable}{\thesubtable}%
}
```

\@subtablelabel Define how label appears.

```
\newcommand*\@subtablelabel[2]{#1\subtablelabel{#2}}
```

\subtabref Reference the sub-table without including the table number.

```
\newcommand*\@subtabref[1]{%
  {%
    \def\@subtablelabel##1##2{\subtablelabel{##2}}%
    \ref{#1}%
  }%
}
\newcommand*{\subtabref}[1]{%
  \let\@objectname\@empty
  \def\@objectref{}%
  \let\@prevsep\@empty
  \@for\@thislabel:=#1\do{%
    \toks@{\@prevsep}%
    \protected@edef\@objectref{\@objectref\the\toks@
      \protect\@subtabref{\@thislabel}}%
      \ifx\@objectname\@empty
\let\@objectname\@nil
      \else
\let\@objectname\relax
        \let\@prevsep\@jmlr@reflistsep
      \fi
  }%
  \ifx\@objectname\relax
    \let\@prevsep\@jmlr@reflistlastsep
  \fi
  \@objectref
}
```

\subtablelabel

```
\newcommand*{\subtablelabel}[1]{(\emph{#1})}
```

\subtable

```
\newcommand*{\subtable}[1][]{%
  \def\@subtabcap{#1}%
  \@subtable
}

\newcommand*{\@subtable}[2][t]{%
  \refstepcounter{subtable}%
  \sbox\@subfloatcapbox{\subtablelabel{\thesubtable}%
```

```
  \ifx\@subtabcap\@empty
  \else
    \space\@subtabcap
  \fi}%
  \sbox\@subfloatcontsbox{#2}%
  \settowidth{\@tempdima}{\usebox\@subfloatcontsbox}%
  \settowidth{\@tempdimb}{\usebox\@subfloatcapbox}%
  \ifdim\@tempdimb>\@tempdima
    \settowidth\@tempdimb{\subtablelabel{\thesubtable}\space}%
    \addtolength{\@tempdima}{-\@tempdimb}%
    \sbox\@subfloatcapbox{\subtablelabel{\thesubtable}\space
      \parbox[t]{\@tempdima}{\@subtabcap}}%
  \fi
  \begin{tabular}[#1]{@{}c@{}}%
  \usebox\@subfloatcapbox\\\usebox\@subfloatcontsbox
  \end{tabular}
}
```

4.1.9 Compatibility with combine.cls

Define chapters to make this class play nicely with combine. These definitions are just copied from book.cls

```
\newcounter{chapter}
\renewcommand\thechapter{\@arabic\c@chapter}
\newcommand\@chapapp{\chaptername}
```

Add sections to the chapter reset.

```
\@addtoreset{section}{chapter}
```

`\chaptermark`

```
\newcommand*\chaptermark[1]{}
```

Chapters should only be defined when we're combining documents into a book.

`\bookchapter`

```
\newcommand\bookchapter{%
  \if@openright\cleardoublepage\else\clearpage\fi
                     \thispagestyle{plain}%
                     \global\@topnum\z@
                     \@afterindentfalse
                     \secdef\@chapter\@schapter}
```

`\artchapter` Disable chapters for articles.

```
\newcommand\artchapter{%
  \ClassError{jmlr}{Chapters not permitted in articles}{}}
```

`\chapter` The default assumes a stand-alone document.

```
\let\chapter\artchapter
```

Label for the chapter entries in the toc.

```
\def\@chaptoclabel{chapter}
```

`\@chapter` Numbered chapters

```
\def\@chapter[#1]#2{\ifnum \c@secnumdepth >\m@ne
                      \refstepcounter{chapter}%
                      \if@mainmatter
                        \typeout{\@chapapp\space\thechapter.}%
                        \addcontentsline{toc}{\@chaptoclabel}%
                                  {\protect\numberline{\thechapter}#1}%
                      \else
                        \addcontentsline{toc}{\@chaptoclabel}{#1}%
                      \fi
                    \else
                      \addcontentsline{toc}{\@chaptoclabel}{#1}%
                    \fi
                    \chaptermark{#1}%
                    \addtocontents{lof}{\protect\addvspace{10\p@}}%
                    \addtocontents{lot}{\protect\addvspace{10\p@}}%
                    \if@twocolumn
                      \@topnewpage[\@makechapterhead{#2}]%
                    \else
                      \@makechapterhead{#2}%
                      \@afterheading
                    \fi}
```

`\chaptertitleformat` Formats the chapter title

```
\newcommand{\chaptertitleformat}[1]{%
  \Huge\bfseries#1%
}
```

`\chapternumberformat` Formats the chapter number

```
\newcommand{\chapternumberformat}[1]{%
  \huge\bfseries \@chapapp\space#1\par\nobreak
  \vskip 20\p@
}
```

`\chapterformat` Overall format for chapter headings

```
\newcommand*{\chapterformat}{\raggedright}
```

`\postchapterskip` Vertical gap after chapter heading

```
\newlength\postchapterskip
\setlength\postchapterskip{40pt}
```

`\prechapterskip` Vertical gap before chapter heading

```
\newlength\prechapterskip
\setlength\prechapterskip{50pt}
```

\@makechapterhead Chapter heading for numbered chapters

```
\def\@makechapterhead#1{%
  \null\vskip\prechapterskip
  {\parindent \z@ \normalfont\chapterformat
    \ifnum \c@secnumdepth >\m@ne
      \if@mainmatter
        \chapternumberformat{\thechapter}%
      \fi
    \fi
    \interlinepenalty\@M
    \chaptertitleformat{#1}\par\nobreak
    \vskip \postchapterskip
  }}
```

\@schapter Unnumbered chapters.

```
\def\@schapter#1{\if@twocolumn
                   \@topnewpage[\@makeschapterhead{#1}]%
                 \else
                   \@makeschapterhead{#1}%
                   \@afterheading
                 \fi}
```

\@makeschapterhead Layout for unnumbered chapter headings

```
\def\@makeschapterhead#1{%
  \vspace*{\prechapterskip}%
  {\parindent \z@
    \normalfont\chapterformat
    \interlinepenalty\@M
    \chaptertitleformat{#1}\par\nobreak
    \vskip \postchapterskip
  }}
```

\l@chapter Format for chapter entry in toc

```
\newcommand*\l@chapter[2]{%
  \ifnum \c@tocdepth >\m@ne
    \addpenalty{-\@highpenalty}%
    \vskip 1.0em \@plus\p@
    \setlength\@tempdima{1.5em}%
    \begingroup
      \parindent \z@ \rightskip \@pnumwidth
      \parfillskip -\@pnumwidth
      \leavevmode \large\bfseries
      \advance\leftskip\@tempdima
      \hskip -\leftskip
      #1\nobreak\hfil \nobreak\hb@xt@\@pnumwidth{\hss #2}\par
      \penalty\@highpenalty
    \endgroup
  \fi}
```

\l@appendix Make appendix entries in the toc the same as that for chapters by default

```
\let\l@appendix\l@chapter
```

\chaptername

```
\newcommand\chaptername{Chapter}
```

\frontmatter Start the front matter (in book)

```
\newcommand\frontmatter{%
  \cleardoublepage
  \@mainmatterfalse
  \renewcommand*{\theHchapter}{front-\thechapter}%
  \pagenumbering{roman}%
  \morefrontmatter
}
\newcommand\morefrontmatter{}
```

\mainmatter Start the main matter (in book)

```
\newcommand\mainmatter{%
  \cleardoublepage
  \@mainmattertrue
  \setcounter{chapter}{0}%
  \renewcommand*{\theHchapter}{\thechapter}%
  \pagenumbering{arabic}%
  \moremainmatter
}
\newcommand\moremainmatter{}
```

\backmatter Start the back matter (in book)

```
\newcommand\backmatter{%
  \if@openright
    \cleardoublepage
  \else
    \clearpage
  \fi
  \@mainmatterfalse}
```

\booktocpreamble

```
\newcommand*{\booktocpreamble}{}
```

\booktocpostamble

```
\newcommand*{\booktocpostamble}{}
```

booktableofcontents This is for the main table of contents when using the combine class file, and is not for use in individual articles.

```
\newcommand\booktableofcontents{%
  \if@twocolumn
    \@restonecoltrue\onecolumn
  \else
```

```
    \@restonecolfalse
  \fi
  \chapter*{\contentsname
    \@mkboth{\MakeUppercase\contentsname}{\MakeUppercase\contentsname}}%
  \booktocpreamble
  \@starttoc{toc}%
  \booktocpostamble
  \if@restonecol
    \twocolumn
  \else
    \clearpage
  \fi
  \@mkboth{}{}%
}
```

`\arttableofcontents` Table of contents for individual articles.

```
\let\arttableofcontents\tableofcontents
```

`\artpart` A part in an article

```
\newcommand{\artpart}{%

  \def\toclevel@part{0}%
  \if@noskipsec \leavevmode\fi
  \par
  \addvspace{4ex}%
  \@afterindentfalse
  \secdef\@artpart\@sartpart
}
\let\@artpart\@part
\let\@sartpart\@spart
```

`\bookpart` A part in a book forming a collection of articles

```
\newcommand\bookpart{%

  \def\toclevel@part{-1}%
  \if@openright
    \cleardoublepage
  \else
    \clearpage
  \fi
  \thispagestyle{plain}%
  \if@twocolumn
    \onecolumn
    \@tempswatrue
  \else
    \@tempswafalse
  \fi
  \preparthook
  \secdef\@bookpart\@sbookpart}
```

\parttitleformat Format of the title for a part (in a book)

```
\newcommand{\parttitleformat}[1]{%
  \Huge\bfseries#1%
}
```

Part labels

```
\newcommand*{\@parttoclabel}{part}
```

\@partapp

```
\def\@partapp{\partname}
```

\partnumberformat Format of the part number (in a book)

```
\newcommand{\partnumberformat}[1]{%
  \Huge\bfseries \@partapp\nobreakspace#1\par\nobreak
  \vskip 20\p@
}
```

\preparthook Hook at the start of a part (in a book)

```
\newcommand{\preparthook}{\null\vfil}
```

\partformat Overall format of part

```
\newcommand*{\partformat}{\centering}
```

\@bookpart Numbered book part format

```
\def\@bookpart[#1]#2{%
    \ifnum \c@secnumdepth >-2\relax
      \refstepcounter{part}%
      \addcontentsline{toc}{\@parttoclabel}{\protect\numberline{\thepart}#1}%
    \else
      \addcontentsline{toc}{\@parttoclabel}{#1}%
    \fi
    \markboth{}{}%
    {\interlinepenalty \@M
     \normalfont\partformat
     \ifnum \c@secnumdepth >-2\relax
       \partnumberformat{\thepart}%
     \fi
     \parttitleformat{#2}\par}%
    \postparthook}
```

\@sbookpart Unnumbered book part format

```
\def\@sbookpart#1{%
    {\interlinepenalty \@M
     \normalfont\partformat
     \parttitleformat{#1}\par}%
    \postparthook}
```

\postparthook Hook after part heading

```
\def\postparthook{\vfil\newpage
                  \if@twoside
                   \if@openright
                    \null
                    \thispagestyle{empty}%
                    \newpage
                   \fi
                  \fi
                  \if@tempswa
                    \twocolumn
                  \fi}
```

\bookappendix Switch to appendices in book

```
\newcommand\bookappendix{\par
  \setcounter{table}{0}%
  \setcounter{figure}{0}%
  \zeroextracounters
  \par
  \gdef\theHchapter{\Alph {chapter}}%
  \xdef\Hy@chapapp{\Hy@appendixstring}%
  \setcounter{chapter}{0}%
  \setcounter{section}{0}%
  \gdef\@chapapp{\appendixname}%
  \gdef\thechapter{\@Alph\c@chapter}%
  \def\@write@jmlr@import{\@@write@jmlr@apdimport}%
  \csname appendixmore\endcsname
}
```

Define commands to switch between book/article modes

\jmlrbookcommands Switch to book commands

```
\newcommand*{\jmlrbookcommands}{%
  \let\part\bookpart
  \let\chapter\bookchapter
  \let\appendix\bookappendix
  \let\tableofcontents\booktableofcontents
  \def\thesection{\thechapter.\arabic{section}}%
}
```

\jmlrarticlecommands Switch to article commands

```
\newcommand*{\jmlrarticlecommands}{%
  \let\part\artpart
  \let\chapter\artchapter
  \let\appendix\artappendix
  \let\tableofcontents\arttableofcontents
  \def\thesection{\arabic{section}}%
}
```

Check for packages that are known to cause problems when combining articles into a book.

jmlr@check@packages

```
\newcommand*{\@jmlr@check@packages}{%
  \@ifpackageloaded{epsfig}{%
    \ClassError{jmlr}{Obsolete package ‘epsfig’ detected.
     \MessageBreak
     Please use \string\includegraphics\space to include images
     instead}{}}{}%
  \@ifpackageloaded{psfig}{%
    \ClassError{jmlr}{Obsolete package ‘psfig’ detected.
     \MessageBreak
     Please use \string\includegraphics\space to include images
     instead}{}}{}%
  \@ifpackageloaded{subfig}{%
    \ClassError{jmlr}{Package ‘subfig’ detected.\MessageBreak
    This will cause a conflict if the article is incorporated
    \MessageBreak
    into a book using jmlbook.cls.
    \MessageBreak
    Please use \string\subfigure\space and
    \string\subtable\space instead}{}}{}%
  \@ifpackageloaded{theorem}{%
   \ClassError{jmlr}{Package ‘theorem’ detected.\MessageBreak
    This can cause a conflict with other packages used by jmlr}{}}{}%
  \@ifpackageloaded{ntheorem}{%
   \ClassError{jmlr}{Package ‘ntheorem’ detected.\MessageBreak
    This can cause a conflict with other packages used by jmlr}{}}{}%
  \@ifpackageloaded{amsthm}{%
   \ClassError{jmlr}{Package ‘amsthm’ detected.\MessageBreak
    This package conflicts with the jmlr class}{}}{}%
  \@ifpackageloaded{pdfpages}{Package ‘pdfpages’ detected.\MessageBreak
   This can cause a problem for jmlrbook.}{}%
  \@ifpackageloaded{geometry}{Package ‘geometry’ detected.\MessageBreak
   This can cause a problem for jmlrbook.}{}%
  \@ifpackageloaded{tabularx}{%
   \ClassError{jmlr}{Package ‘tabularx’ detected.\MessageBreak
    This will break footnote links.}{}}{}%
}
\AtBeginDocument{%
\@jmlr@check@packages
\let\@jmlr@check@packages\relax
}
```

ppressPackageChecks Don’t check for potentially problematic packages. (If I find this in any paper sent to me for inclusion in a book, it will annoy me.)

```
\newcommand*{\jmlrSuppressPackageChecks}{%
  \let\@jmlr@check@packages\relax
```

```
}
```

Discourage authors from using obsolete commands:

\obsoletefontcs

```
\DeclareRobustCommand*{\obsoletefontcs}[1]{%
  \ClassWarning{jmlr}{Obsolete command
    \expandafter\string\csname#1\endcsname\space detected}%
  \csname #1 \endcsname
}
```

\bf

```
\renewcommand*{\bf}{%
  \obsoletefontcs{bf}%
}
```

\it

```
\renewcommand*{\it}{%
  \obsoletefontcs{it}%
}
```

\sc

```
\renewcommand*{\sc}{%
  \obsoletefontcs{sc}%
}
```

\rm

```
\renewcommand*{\rm}{%
  \obsoletefontcs{rm}%
}
```

\sf

```
\renewcommand*{\sf}{%
  \obsoletefontcs{sf}%
}
```

\tt

```
\renewcommand*{\tt}{%
  \obsoletefontcs{tt}%
}
```

4.2 jmlrbook.cls Code

Class file for books composed of articles using the jmlr class.

```
\NeedsTeXFormat{LaTeX2e}
```

Declare class:

```
\ProvidesClass{jmlrbook}[2014/10/15 v1.20 (NLCT) JMLR Book Style]
```

Need xkeyval package to have key=value class options

```
\RequirePackage{xkeyval}
```

Requires double spacing for the title page

```
\RequirePackage{setspace}
```

Path used to determine if the preface is in the main document or in a separate file.

`\jmlrprefacefile`

```
\newcommand*\jmlrprefacepath{}
```

The fink package is now deprecated, so only use it if currfile isn't installed.

```
\IfFileExists{currfile.sty}%
{
  \RequirePackage{currfile}
  \renewcommand*\jmlrprefacepath{\currfilepath}
}%
{%
  \RequirePackage{fink}
  \ifdef\finkpath
  {%
    \renewcommand*\jmlrprefacepath{\finkpath}%
  }
  {%
```

fink version too old.

```
    \ClassWarning{jmlrbook}{Install 'currfile' package or update
      'fink' package}
  }
}
```

Some packages need to be loaded before hyperref so provide a hook to do this:

```
\providecommand*{\jmlrprehyperref}{}
```

`\ifgrayscale` Determine whether to select color or grayscale

```
\newif\ifgrayscale
\grayscalefalse
```

`draft`

```
\DeclareOptionX{draft}{\setlength\overfullrule{5pt}}
```

`final`

```
\DeclareOptionX{final}{\setlength\overfullrule{0pt}}
```

`color`

```
\DeclareOptionX{color}{\grayscalefalse}
```

`gray`

```
\DeclareOptionX{gray}{\grayscaletrue}
```

Pass letterpaper and 7x10 to jmlr.

letterpaper

```
\DeclareOptionX{letterpaper}{\PassOptionsToClass{\CurrentOption}{jmlr}}
```

7x10

```
\DeclareOptionX{7x10}{\PassOptionsToClass{\CurrentOption}{jmlr}}
```

Pass html and nohtml to jmlr. (Used by `make jmlrbookgui`)

html

```
\DeclareOptionX{html}{\PassOptionsToClass{\CurrentOption}{jmlr}}
```

nohtml

```
\DeclareOptionX{nohtml}{\PassOptionsToClass{\CurrentOption}{jmlr}}
```

\jmlrprefaceheader

```
\newcommand*{\jmlrprefaceheader}{%
  \phantomsection
  \chapter*{\prefacename}%
  \addcontentsline{toc}{chapter}{\prefacename}%
  \markboth{\prefacename}{\prefacename}%
}
```

Pass wcp and nowcp options to jmlr and set preface header.

wcp

```
\DeclareOptionX{wcp}{%
  \PassOptionsToClass{\CurrentOption}{jmlr}%
  \renewcommand*{\jmlrprefaceheader}{\chapter*{\prefacename}}
}
```

nowcp

```
\DeclareOptionX{nowcp}{%
  \PassOptionsToClass{\CurrentOption}{jmlr}%
  \renewcommand*{\jmlrprefaceheader}{\chapter{\prefacename}}
}
```

Pass tablecaptiontop and tablecaptionbottom options to jmlr.

tablecaptiontop

```
\DeclareOptionX{tablecaptiontop}{\PassOptionsToClass{\CurrentOption}{jmlr}}
```

tablecaptionbottom

```
\DeclareOptionX{tablecaptionbottom}{\PassOptionsToClass{\CurrentOption}{jmlr}}
```

Pass font size commands to jmlr

10pt

```
\DeclareOptionX{10pt}{\PassOptionsToClass{\CurrentOption}{jmlr}}
```

11pt

```
\DeclareOptionX{11pt}{\PassOptionsToClass{\CurrentOption}{jmlr}}
```

12pt

```
\DeclareOptionX{12pt}{\PassOptionsToClass{\CurrentOption}{jmlr}}
```

pdfxa

```
\define@boolkey{jmlrbook.cls}[jmlr]{pdfxa}[true]{}
\jmlrpdfxafalse
```

Process options

```
\ProcessOptionsX
```

If `\jmlrgrayscale` has been defined, let it override the class options. If it is defined, it should be set to 0 for the online version and any other number for the grayscale print version.

```
\@ifundefined{jmlrgrayscale}{}%
{%
  \ifnum\jmlrgrayscale=0\relax
    \grayscalefalse
  \else
    \grayscaletrue
  \fi
}
```

This next bit is a modification of pdfx. It's only used for the print version when the pdfxa option is used.

```
\ifgrayscale
  \newcommand*{\jmlrwritepdfinfo}{%
     \protected@write\@auxout{}{\string\jmlrbook@info{\xmpAuthor}{\xmpTitle}}%
  }
  \ifjmlrpdfxa
   \def\convertDate{\getYear}
   {\catcode`\D=12
    \gdef\getYear D:#1#2#3#4{\edef\xYear{#1#2#3#4}\getMonth}
   }
   \def\getMonth#1#2{\edef\xMonth{#1#2}\getDay}
   \def\getDay#1#2{\edef\xDay{#1#2}\getHour}
   \def\getHour#1#2{\edef\xHour{#1#2}\getMin}
   \def\getMin#1#2{\edef\xMin{#1#2}\getSec}
   \def\getSec#1#2{\edef\xSec{#1#2}\getTZh}
   {%
     \catcode`\Z=12
     \gdef\tmpz{Z}
   }
  \def\hash{\expandafter\@gobble\string\#}%
  \def\amp{\expandafter\@gobble\string\&}%
  \def\xmpAmp{\amp\hash x0026;}%
  \def\sep{</rdf:li><rdf:li>}
```

```
\def\TextCopyright{\amp\hash x00A9;}
\def\Title#1{\gdef\xmpTitle{#1}}
\def\Author#1{\gdef\xmpAuthor{#1}}
\def\Keywords#1{\gdef\xmpKeywords{#1}}
 \let\xmpKeywords\@empty
 \let\xmpSubject\xmpKeywords
\def\Creator#1{\gdef\xmpCreator{#1}}
 \def\xmpCreator{\@pdfcreator}
\def\Producer#1{\gdef\xmpProducer{#1}}
 \def\xmpProducer{pdfTeX}
\def\Volume#1{\gdef\xmpVolume{#1}}
 \let\xmpVolume\@empty
\def\Issue#1{\gdef\xmpIssue{#1}}
 \let\xmpIssue\@empty
\def\CoverDisplayDate#1{\gdef\xmpCoverDisplayDate{#1}}
 \let\xmpCoverDisplayDate\@empty
\def\CoverDate#1{\gdef\xmpCoverDate{#1}}
 \let\xmpCoverDate\@empty
\def\Copyright#1{\gdef\xmpCopyright{#1}}
 \let\xmpCopyright\@empty
\def\Doi#1{\gdef\xmpDoi{#1}}
 \let\xmpDoi\@empty
\def\Lastpage#1{\gdef\xmpLastpage{#1}}
 \let\xmpLastpage\@empty
\def\Firstpage#1{\gdef\xmpFirstpage{#1}}
 \let\xmpFirstpage\@empty
\def\Journaltitle#1{\gdef\xmpJournaltitle{#1}}
 \let\xmpJournaltitle\@empty
\def\Journalnumber#1{\gdef\xmpJournalnumber{#1}}
 \let\xmpJournalnumber\@empty
\def\Org#1{\gdef\xmpOrg{#1}}
 \let\xmpOrg\@empty
\def\CreatorTool#1{\gdef\xmpCreatorTool{#1}}
 \def\xmpCreatorTool{\xmpProducer}
\def\AuthoritativeDomain#1{\gdef\xmpAuthoritativeDomain{#1}}
 \let\xmpAuthoritativeDomain\@empty
\def\findUUID#1{\edef\tmpstring{\pdfmdfivesum{#1}}
     \expandafter\eightofnine\tmpstring\end}
\def\eightofnine#1#2#3#4#5#6#7#8#9\end{%
     \xdef\eightchars{#1#2#3#4#5#6#7#8}
     \fouroffive#9\end}
\def\fouroffive#1#2#3#4#5\end{\xdef\ffourchars{#1#2#3#4}
     \sfouroffive#5\end}
\def\sfouroffive#1#2#3#4#5\end{\xdef\sfourchars{#1#2#3#4}
     \tfouroffive#5\end}
\def\tfouroffive#1#2#3#4#5\end{\xdef\tfourchars{#1#2#3#4}
     \xdef\laststring{#5}}
\def\uuid{\eightchars-%
          \ffourchars-%
```

```
            \sfourchars-%
            \tfourchars-%
            \laststring}
```

`\getTZh` This is a modification of the command from pdfx that also works for zero and negative hours.

```
\def\getTZh#1{%
  \def\TZprefix{#1}%
  \ifx\TZprefix\tmpz
    \def\xTZsign{+}%
    \def\xTZh{00}%
    \def\xTZm{00}%
    \let\getTZnext\doConvDate
  \else
    \let\xTZsign\TZprefix
    \let\getTZnext\getTZhm
  \fi
  \getTZnext
}
```

`\getTZm` This is a modified version of the command from pdfx.

```
\def\getTZhm#1#2'#3#4'{%
    \edef\xTZh{#1#2}%
    \edef\xTZm{#3#4}%
  \doConvDate
}
```

`\doConvDate` Defines the date using information derived from parsing `\pdfcreationdate`

```
\def\doConvDate{%
    \edef\convDate{\xYear-\xMonth-\xDay
      T\xHour:\xMin:\xSec\xTZsign\xTZh:\xTZm}%
}
```

`\@pre@hyperref` This macro contains a trimmed down version of pdfx.

```
\newcommand{\@pre@hyperref}{%
 \IfFileExists{FOGRA39L.icc}%
 {%
   \pdfminorversion=3
   \pdfpageattr{/MediaBox[0 0 595 793]
                /BleedBox[0 0 595 793]
                /TrimBox[25 20 570 773]}%
    \findUUID{\jobname.pdf}%
    \edef\xmpdocid{\uuid}%
    \findUUID{\pdfcreationdate}%
    \edef\xmpinstid{\uuid}%
    \InputIfFileExists{\jobname.xmpdata}{}{}%
    \RequirePackage{xmpincl}%
    \expandafter\convertDate\pdfcreationdate
    \def\@pctchar{\expandafter\@gobble\string\%}
```

```
    \def\@bchar{\expandafter\@gobble\string\\}
    \immediate\pdfobj stream attr{/N 4}  file{FOGRA39L.icc}
    \edef\OBJ@CVR{\the\pdflastobj}
    \pdfcatalog{/OutputIntents [ <<
     /Type/OutputIntent
     /S/GTS_PDFX
     /OutputCondition (FOGRA39)
     /OutputConditionIdentifier (FOGRA39 \@bchar(ISO Coated v2
      300\@pctchar\space \@bchar(ECI\@bchar)\@bchar))
     /DestOutputProfile \OBJ@CVR\space 0 R
     /RegistryName(http://www.color.org)
    >> ]}
    \input glyphtounicode.tex
    \input glyphtounicode-cmr.tex
    \pdfgentounicode=1
    \RequirePackage[draft,pdftex,pdfpagemode=UseNone,bookmarks=false]{hyperref}%
  }%
  {%
     \ClassError{jmlrbook}{Can't find 'FOGRA39L.icc'}%
       {Download ISOcoated\string_v2\string_330\string_bas.icc from
       http://www.colormanagement.org/en/isoprofile.html
       Rename it FOGRA39L.icc and put it in the pdfx folder}%
  }%
}
\renewcommand*{\jmlrwritepdfinfo}{%
    \begingroup
      \let\&=\xmpAmp
      \IfFileExists{pdfx-1a.xmp}{%
         \pdfcompresslevel=0
       \immediate\pdfobj stream attr {/Type /Metadata /Subtype /XML}
       file{pdfx-1a.xmpi}
       \pdfcatalog{/Metadata \the\pdflastobj\space 0 R}
      }%
      {}%
    \endgroup
    \protected@write\@auxout{}{\string\jmlrbook@info{\xmpAuthor}{\xmpTitle}}%
    \pdfinfo{
        /Author(\xmpAuthor)%
        /Title(\xmpTitle)%
        /Creator(\xmpProducer)%
        /CreationDate(\convDate)%
        /ModDate(\convDate)%
        /Producer(\xmpProducer)%
        /Trapped /False
        /GTS_PDFXVersion (PDF/X-1:2001)%
        /GTS_PDFXConformance (PDF/X-1a:2001)%
    }%
}

\fi
```

```
\else
  \newcommand*{\jmlrwritepdfinfo}{}
\fi
```

`\jmlrbook@info` Not needed (information provided for MakeJmlrBookGUI)

```
\newcommand*{\jmlrbook@info}[2]{}
```

`\jmlrbook@location` Not needed (information provided for MakeJmlrBookGUI)

```
\newcommand*{\jmlrbook@location}[1]{}
```

`\@post@hyperref`

```
\newcommand*{\@post@hyperref}{%
  \let\@org@c@lenddoca\c@lenddoca
  \let\c@lenddoca\undefined
}
```

Load combine class. This requires a little bit of trickery.

```
\let\@org@LoadClass\LoadClass
\def\LoadClass#1{\let\LoadClass\@org@LoadClass\@org@LoadClass{jmlr}}
\@org@LoadClass{combine}
\let\c@lenddoca\@org@c@lenddoca
```

Requires combnat to work with natbib:

```
\RequirePackage{combnat}
```

Need to apply a patch to combnat (this has now been fixed in combnat, but user might be using an old version):

```
\renewcommand\c@laNAT@parse[1]{{%
      \let\protect=\@unexpandable@protect\let~\relax
      \let\active@prefix=\@gobble
      \xdef\NAT@temp{\csname b@#1\@extra@b@citeb\endcsname}}%
      \expandafter\NAT@split\NAT@temp?????@@%
      \expandafter\NAT@parse@date\NAT@date??????@@%
      \ifciteindex\NAT@index\fi}

\renewcommand\c@lbNAT@parse[1]{{%
      \let\protect=\@unexpandable@protect\let~\relax
      \let\active@prefix=\@gobble
      \xdef\NAT@temp{\csname B?\jobname?@#1\@extra@b@citeb\endcsname}}%
      \expandafter\NAT@split\NAT@temp?????@@%
      \expandafter\NAT@parse@date\NAT@date??????@@%
      \ifciteindex\NAT@index\fi}
```

Switch on two-side mode

```
\@twosidetrue
```

Start new chapters on the right hand page:

```
\newif\if@openright
\@openrighttrue
\newif\if@mainmatter
```

Define commands that affect the formatting:

`\pagerule` Draw line across the text block.

```
\newcommand*{\pagerule}[1][0pt]{\par\noindent
  \rule[#1]{\linewidth}{2pt}\par}
```

`preface` The preface environment starts a new chapter but also writes information to the main aux file for `makejmlrbook`. The optional argument is the file name for the extracted preface.

```
\ifjmlrhtml
  \newenvironment{preface}[1][preface]%
  {%
    \noindent\HCode{<h2>\prefacename</h2>}%
  }%
  {%
  }
\else
  \newenvironment{preface}[1][preface]%
  {%
```

The preface should be in the front matter, so the chapter numbering should automatically be suppressed.

```
    \jmlrprefaceheader
    \protected@write\@mainauxout
      {}{\string\@prefacestart{\thepage}{\arabic{page}}}%
    \protected@write\@mainauxout{}{\string\@prefacefile{\jmlrprefacepath}{#1}}%
  }%
  {%
    \protected@write\@mainauxout{}{\string\@prefaceend{\thepage}}%
  }
\fi
```

`\prefacename`

```
\newcommand*{\prefacename}{Preface}
```

`\@prefacefile`

```
\newcommand*{\@prefacefile}[2]{}
```

`\@prefacestart`

```
\newcommand*{\@prefacestart}[2]{}
```

`\@prefaceend`

```
\newcommand*{\@prefaceend}[1]{}
```

`\@prefaceeditor`

```
\newcommand*{\@prefaceeditor}[1]{}
```

Cross-reference chapters:

```
\newcommand*{\chapterrefname}{Chapter}
\newcommand*{\chaptersrefname}{Chapters}
```

\chapterref

```
\newcommand*{\chapterref}[1]{%
  \objectref{#1}{\chapterrefname}{\chaptersrefname}{}{}}
```

Cross-referencing imported articles:

\articlepageref Page number of start of article

```
\newcommand*{\articlepageref}[1]{%
  \pageref{#1jmlrstart}%
}
```

\articlepagesref Page range of article

```
\newcommand*{\articlepagesref}[1]{%
  \pageref{#1jmlrstart}--\pageref{#1jmlrend}%
}
```

\@articlepagesref Page range of article for use within the article

```
\newcommand*{\@articlepagesref}{%
  \pageref{jmlrstart}--\pageref{jmlrend}%
}
```

\articletitleref Reference the short title of an imported article

```
\newcommand*{\articletitleref}[1]{\nameref{#1jmlrstart}}
```

\articleauthorref Reference the authors of an imported article

```
\newcommand*{\articleauthorref}[1]{%
  \@ifundefined{@jmlr@author@#1}%
  {%
    \ClassWarning{jmlrbook}{Label `#1' undefined}%
  }%
  {%
    \@nameuse{@jmlr@author@#1}%
  }%
}
```

\jmlrtitlehook Extra title information

```
\renewcommand*\jmlrtitlehook{%
  \hypersetup{pdftitle={\@shorttitle}}%
  \def\xmpTitle{\@shorttitle}%
  \let\jmlrtitlehook\relax
}
\providecommand*{\xmpTitle}{\@title}%
```

\jmlrauthorhook

```
\renewcommand*\jmlrauthorhook{%
  \ifx\@sauthor\@empty
    \hypersetup{pdfauthor={\@author}}%
  \else
    \hypersetup{pdfauthor={\@sauthor}}%
  \fi
  \def\xmpAuthor{\@sauthor}%
  \let\jmlrauthorhook\relax
  \let\@shortauthor\@empty
}
\providecommand*\xmpAuthor{\@author}%
```

\subtitle

```
\newcommand*{\@subtitle}{}
\newcommand*{\subtitle}[1]{\renewcommand*{\@subtitle}{#1}}
```

\volume

```
\newcommand*{\@volume}{\@jmlrvolume}
\newcommand*{\volume}[1]{%
  \renewcommand*{\@volume}{#1}%
  \ifjmlrpdfxa
    \let\xmpVolume\@volume
  \fi
}
```

\jmlrissue

```
\newcommand*{\@issue}{\@jmlrissue}
\newcommand*{\issue}[1]{%
  \renewcommand*{\@issue}{#1}%
  \ifjmlrpdfxa
    \let\xmpIssue\@issue
  \fi
}
```

\thejmlrworkshop Provided in the event that it's required for the title page.

```
\newcommand*{\thejmlrworkshop}{\@jmlrworkshop}
```

\team

```
\newcommand*{\@team}{}
\newcommand*{\team}[1]{\renewcommand*{\@team}{#1}}
```

\jmlrlocation

```
\newcommand*{\@jmlrlocation}{}
\newcommand*{\jmlrlocation}[1]{%
 \renewcommand*{\@jmlrlocation}{#1}%
 \protected@write\@auxout{}{\string\jmlrbook@location{#1}}%
}
```

roductioneditorname

```
\newcommand*{\@productioneditorname}{Production Editor}
```

\productioneditor

```
\newcommand*{\@productioneditor}{}
\newcommand*{\productioneditor}[1]{%
  \renewcommand*{\@productioneditor}{#1}%
  \renewcommand*{\@productioneditorname}{Production Editor}%
}
```

\productioneditors

```
\newcommand*{\productioneditors}[1]{%
  \renewcommand*{\@productioneditor}{#1}%
  \renewcommand*{\@productioneditorname}{Production Editors}%
}
```

\logo Title page image

```
\newcommand*{\@logo}{}
\newcommand*{\logo}[2][]{%
\ifjmlrhtml
  \def\@logo@tmp{#1}%
  \ifx\@logo@tmp\@empty
    \renewcommand*{\@logo}{#2}%
  \else
    \renewcommand*{\@logo}{\HCode{<a href="#1">}#2\HCode{</a>}}%
  \fi
\else
  \renewcommand*{\@logo}{#2}%
\fi
}
```

\booklinebreak Provided for book production editors to fine tune the book line breaking.

```
\renewcommand*{\booklinebreak}[1][4]{\linebreak[#1]}
```

Set article title

```
\def\c@lbmaketitle{\jmlrmaketitle}
```

The book's title:

\maintitle

```
\newcommand*{\maintitle}{}
```

Make it easier to modify the book's title page:

\SetTitleElement

```
\newcommand*{\SetTitleElement}[3]{%
  {%
    \expandafter\ifx\csname @#1\endcsname\@empty
    \else
```

```
      #2\csname @#1\endcsname#3%
    \fi
  }%
}
```

\IfTitleElement Determine if the given element has been set:

```
\newcommand{\IfTitleElement}[3]{%
  \expandafter\ifx\csname @#1\endcsname\@empty
    #2%
  \else
    #3%
  \fi
}
```

\titlebody

```
\newcommand{\titlebody}{%
  \SetTitleElement{title}{\maintitlefont}{\postmaintitle}%
  \SetTitleElement{volume}{\mainvolumefont}{\postmainvolume}%
  \SetTitleElement{subtitle}{\mainsubtitlefont}{\postmainsubtitle}%
  \SetTitleElement{logo}{\mainlogofont}{\postmainlogo}%
  \SetTitleElement{team}{\mainteamfont}{\postmainteam}%
  \SetTitleElement{author}{\mainauthorfont}{\postmainauthor}%
  \SetTitleElement{productioneditor}{\mainproductioneditorfont}%
    {\postmainproductioneditor}%
}
```

\c@lamaketitle

```
\ifjmlrhtml
  \renewcommand{\c@lamaketitle}{%
    \HCode{<table cellpadding="2" cellspacing="2" border="0" width="100\%">}%
    \HCode{<tbody><tr><td valign="top">}%
    \HCode{<h1>}%
    \@title\newline
    \ifx\@jmlrvolume\@empty
      \ifx\@volume\@empty
      \else
        Volume \@volume
        \ifx\@subtitle\@empty\else: \fi
      \fi
    \else
        Volume \@jmlrvolume
        \ifx\@subtitle\@empty\else: \fi
    \fi
    \@subtitle
    \HCode{</h1>}%
    \newline
    \textbf{Editors: \@author}
    \HCode{</td><td valign="top">}%
    \@logo
```

```
    \HCode{</td></tr></tbody></table>}%
    \let\maintitle\@title
  }
\else
  \renewcommand{\c@lamaketitle}{%
    \pagenumbering{alph}%
    \pagestyle{empty}%
    \begin{titlepage}%
      \let\footnotesize\small
      \let\footnoterule\relax
      \let\footnote\thanks
      \titlebody
      \par
      \@thanks
    \end{titlepage}%
    \setcounter{footnote}{0}%
    \let\maintitle\@title
    \c@lmtitlempty
  }
\fi
```

\maintitlefont

```
\renewcommand{\maintitlefont}{%
  \null\vskip15pt\relax\par
  \flushleft\Huge\bfseries\noindent}
```

\postmaintitle

```
\renewcommand{\postmaintitle}{%
  \par\relax
}
```

\mainvolumefont

```
\newcommand{\mainvolumefont}{%
  \flushleft\noindent\LARGE\bfseries Volume
}
```

\postmainvolume

```
\newcommand{\postmainvolume}{%
  \IfTitleElement{subtitle}{}{:}\par\relax
}
```

\mainissuefont

```
\newcommand{\mainissuefont}{%
  \flushleft\noindent\LARGE\bfseries Issue
}
```

\postmainissue

```
\newcommand{\postmainissue}{%
  \par\relax
}
```

```
\mainsubtitlefont
                  \newcommand{\mainsubtitlefont}{%
                    \flushleft\LARGE\bfseries\noindent}

\postmainsubtitle
                  \newcommand{\postmainsubtitle}{\par}

    \mainlogofont
                  \newcommand{\mainlogofont}{%
                    \vfill
                    \begin{center}}

    \postmainlogo
                  \newcommand{\postmainlogo}{\end{center}\vfill\par}

    \mainteamfont
                  \newcommand{\mainteamfont}{\flushleft\bfseries\Large\noindent}

    \postmainteam
                  \newcommand{\postmainteam}{\par}

  \mainauthorfont
                  \renewcommand{\mainauthorfont}{%
                    \flushleft\Large\itshape\doublespacing\noindent}

  \postmainauthor
                  \renewcommand{\postmainauthor}{%
                  \par}

roductioneditorfont
                  \newcommand{\mainproductioneditorfont}{%
                    \flushleft\Large\noindent \@productioneditorname: \itshape}

ainproductioneditor
                  \newcommand{\postmainproductioneditor}{\par}

    \maindatefont
                  \renewcommand{\maindatefont}{}

    \postmaindate
                  \renewcommand{\postmaindate}{}
```

`signoff` Editorial team listed at the end of a preface etc. The mandatory argument is the date, the optional argument is the team title. Each editor should be separated with `\Editor`.

```
                  \ifjmlrhtml
                    \newenvironment{signoff}[2][The Editorial Team]{%
```

```
    \def\Editor##1{##1\par\vskip\baselineskip\noindent\ignorespaces}%
    \def\@editorialteam{#1}%
    \def\@signoffdate{#2}%
    \par\vskip\baselineskip\noindent
    \ifx\@signoffdate\@empty
    \else
      \emph{\@signoffdate}\nopagebreak\par
      \nopagebreak\vskip\baselineskip\noindent
    \fi
    \ifx\@editorialteam\@empty
    \else
      \@editorialteam:\nopagebreak\par\nopagebreak\vskip\baselineskip
    \fi
    \nopagebreak\noindent\ignorespaces
  }%
  {%
  }%
\else
  \newenvironment{signoff}[2][The Editorial Team]{%
    \def\Editor##1{%
      \protected@write\@mainauxout{}{\string\@prefaceeditor{##1}}%
      \begin{tabular}{@{}l@{}}%
      ##1%
      \end{tabular}%
      \par\vskip\baselineskip\noindent\ignorespaces
    }%
    \def\@editorialteam{#1}%
    \def\@signoffdate{#2}%
    \par\vskip\baselineskip\noindent
    \ifx\@signoffdate\@empty
    \else
      \emph{\@signoffdate}\par
      \vskip\baselineskip\noindent
    \fi
    \ifx\@editorialteam\@empty
    \else
      \@editorialteam:\par\vskip\baselineskip
    \fi
    \noindent\ignorespaces
  }%
  {%
  }
\fi
```

`authorsignoff` An author can sign off at the end of a chapter (such as a foreword). Each author should be separated with `\Author`.

```
\newenvironment{authorsignoff}{%
  \def\Author##1{\begin{tabular}{@{}p{\linewidth}@{}}%
    ##1%
```

```
    \end{tabular}%
    \par\vskip\baselineskip\noindent\ignorespaces
  }%
  \par\vskip\baselineskip\noindent\ignorespaces
}{%
}
```

\zeroextracounters Reset counters at the start of each imported article

```
\renewcommand{\zeroextracounters}{%
  \@ifundefined{c@theorem}{}{\setcounter{theorem}{0}}%
  \@ifundefined{c@algorithm}{}{\setcounter{algorithm}{0}}%
  \@ifundefined{c@algocf}{}{\setcounter{algocf}{0}}%
  \@ifundefined{c@example}{}{\setcounter{example}{0}}%
  \@ifundefined{c@definition}{}{\setcounter{definition}{0}}%
}
```

\contentsname Redcfine title of the table of contents

```
\renewcommand*{\contentsname}{Table of Contents}
```

\theHalgorithm

```
\def\theHalgorithm{\theHchapter.\thealgorithm}
```

\theHsection

```
\def\theHsection{\theHchapter.\thesection}
\def\theHsubsection{\theHchapter.\thesubsection}
\def\theHsubsubsection{\theHchapter.\thesubsubsection}
\def\theHparagraph{\theHchapter.\theparagraph}
```

\theHsubfigure

```
\def\theHsubfigure{\theHfigure.\arabic{subfigure}}
\def\theHsubtable{\theHtable.\arabic{subtable}}
```

\theHfootnote

```
\def\theHfootnote{\theHchapter.\alpha{footnote}}
```

\theHtable

```
\def\theHtable{\theHchapter.\arabic{table}}
```

\theHfigure

```
\def\theHfigure{\theHchapter.\arabic{figure}}
```

\theHalgocf

```
\def\theHalgocf{\theHchapter.\thealgocf}
```

\mailto

```
\renewcommand*{\mailto}[1]{%
  \href{mailto:#1}{\nolinkurl{#1}}%
}
```

```
\c@lhaschapterfalse
\let\c@lthesec\thesection
```

Make sure the hyperlinks work

\doimportchapterHref

```
\newcommand\doimportchapterHref{%
  \edef\@currentHref{chapter.\thechapter}%
}
```

\toclevel@appendix Set the toc level for the main appendices

```
\def\toclevel@appendix{-1}
```

hyperref and combine don't play nicely need to fudge the cross-referencing a bit.

\Xprefix

```
\def\Xprefix{}
```

\Xref

```
\DeclareRobustCommand\Xref{\@ifstar\@Xrefstar\T@Xref}%
```

\Xpageref

```
\DeclareRobustCommand\Xpageref{%
  \@ifstar\@Xpagerefstar\T@Xpageref
}%
```

\HyRef@StarSetXRef

```
\def\HyRef@StarSetXRef#1{%
  \begingroup
    \Hy@safe@activestrue
    \edef\x{#1}%
    \@onelevel@sanitize\x
    \edef\x{\endgroup
      \noexpand\HyRef@@StarSetRef
        \expandafter\noexpand\csname r@\Xprefix\x\endcsname{\x}%
    }%
  \x
}
%    \end{macocode}
%\end{macro}
%
%\begin{macro}{\@Xrefstar}
%    \begin{macrocode}
\def\@Xrefstar#1{%
  \HyRef@StarSetXRef{#1}\@firstoffive
}
```

\@Xpagerefstar

```
\def\@Xpagerefstar#1{%
  \HyRef@StarSetXRef{#1}\@secondoffive
}
```

\T@Xref

```
\def\T@Xref#1{%
  \Hy@safe@activestrue
  \expandafter\@setXref\csname r@\Xprefix#1\endcsname\@firstoffive{#1}%
  \Hy@safe@activesfalse
}%
```

\T@Xpageref

```
\def\T@Xpageref#1{%
  \Hy@safe@activestrue
  \expandafter\@setXref\csname r@\Xprefix#1\endcsname\@secondoffive{#1}%
  \Hy@safe@activesfalse
}%
```

\Xlabel

```
\def\Xlabel#1{%
  \@bsphack
    \begingroup
      \@onelevel@sanitize\@currentlabelname
      \edef\@currentlabelname{%
        \expandafter\strip@period\@currentlabelname\relax.\relax\@@@
      }%
      \protected@write\@mainauxout{}{%
        \string\newlabel{\Xprefix#1}{{\@currentlabel}{\thepage}%
          {\@currentlabelname}{\@currentHref}{}}%
      }%
    \endgroup
  \@esphack
}
\let\ltx@label\Xlabel
```

\@setXref

```
\def\@setXref#1#2#3{% csname, extract group, refname
  \ifx#1\relax
    \protect\G@refundefinedtrue
    \nfss@text{\reset@font\bfseries ??}%
    \@latex@warning{%
      Reference `#3' on page \thepage \space undefined%
    }%
  \else
    \expandafter\Hy@setref@link#1\@empty\@empty\@nil{#2}%
  \fi
}
```

\@secondoffive Something's redefining \@secondoffive incorrectly at the start of the document when hyperref's draft mode is on. Need to fix it.

```
\AtBeginDocument{%
  \renewcommand\@secondoffive[5]{#2}%
  \jmlrwritepdfinfo
  \let\jmlrwritepdfinfo\relax
}
```

Need to write imported chapter label to main auxfile.

\@setimportlabel

```
\def\@setimportlabel{%
  \let\@mainauxout\@auxout
  \let\HRlabel\label
}
```

```
\AtBeginDocument{\@jmlrbegindoc}
```

\@jmlrbegindoc

```
\newcommand*\@jmlrbegindoc{
  \@setimportlabel
  \gdef\@setimportlabel{\let\ref\Xref \let\pageref\Xpageref}%
  \let\ReadBookmarks\relax
```

Patch to work with auxhook if loaded

```
  \@ifundefined{@beginmainauxhook}{}{\@beginmainauxhook}%
}
```

Imported papers modify \InputIfFileExists so save original definition.

```
\let\@org@InputIfFileExists\InputIfFileExists
```

jmlrpapers

```
\newenvironment{jmlrpapers}{%
```

```
\def\@begindocumenthook{%
  \@jmlrbegindoc
  \let\bibcite\c@lbNATbibcite
}
\def\@enddocumenthook{%
  \@jmlrenddoc
  \let\bibcite\c@lbNAT@testdef
}
  \begin{papers}[]

  \if@twocolumn
    \def\@jmlr@restore{\twocolumn}%
  \else
    \def\@jmlr@restore{\onecolumn}%
  \fi
  \jmlrarticlecommands
```

```
    \let\importpubpaper\@importpubpaper
    \let\importpaper\@importpaper
    \let\importarticle\@importarticle
    \let\label\Xlabel
    \let\ref\Xref
    \pagestyle{article}%
}{%
    \@jmlr@restore
    \end{papers}
}
```

\addtomaincontents

```
\newcommand{\addtomaincontents}[2]{%
    \protected@write\@mainauxout{\let\label\@gobble\let\index\@gobble
      \let\glossary\@gobble}{\string\@writefile{#1}{#2}}%
}
```

\@write@author

```
\newcommand*{\@write@author}[2]{%
    \def\@jmlr@authors@sep{ and }%
    \protected@write\@mainauxout{}{%
      \string\@new@articleauthor{#1}{#2}%
    }%
}
```

\@new@articleauthor

```
\newcommand*{\@new@articleauthor}[2]{%
    \expandafter\gdef\csname @jmlr@author@#1\endcsname{%
      \hyperref[#1jmlrstart]{#2}}%
}
```

@@write@jmlr@import

The accompanying `makejmlrbook` Perl script scans the aux file for information. Any articles imported using `\importpubpaper`, `\importpaper` or `\importarticle` need to write the relevant information to the aux file.

```
\newcommand*{\@@write@jmlr@import}[3]{%
    \protected@write\@mainauxout{}{\string\@jmlr@import{#1}{#2}{#3}}%
}
```

\@jmlr@import

LaTeX should ignore `\@jmlr@import` as it's only needed for `makejmlrbook`:

```
\newcommand*{\@jmlr@import}[3]{}
```

rite@jmlr@apdimport

As above but for files imported in the appendix.

```
\newcommand*{\@@write@jmlr@apdimport}[3]{%
    \protected@write\@mainauxout{}{\string\@jmlr@apdimport{#1}{#2}{#3}}%
}
```

\@jmlr@apdimport

As above but for files imported in the appendix. LaTeX should ignore `\@jmlr@apdimport` as it's only needed for `makejmlrbookgui`:

```
\newcommand*{\@jmlr@apdimport}[3]{}
```

\@write@jmlr@import Initialise to \@@write@jmlr@import and switch to \@@write@jmlr@apdimport in the appendices.

```
\def\@write@jmlr@import{\@@write@jmlr@import}
```

mlrpremaketitlehook Redefine \jmlrpremaketitlehook

```
\def\jmlrpremaketitlehook{%
  \cleardoublepage
  \phantomsection
  \let\@currentlabelname\@shorttitle

  \refstepcounter{chapter}%
}%
```

\jmlrimporthook Hook just before document is imported.

```
\newcommand*{\jmlrimporthook}{}
```

\importpubpaper Import a document that has already been published. Syntax: \importpubpaper[⟨*label*⟩]{⟨*dir*⟩}{⟨*file*⟩}{⟨*pag*
where ⟨*dir*⟩ is the directory in which the paper is located, ⟨*file*⟩ is the name of the file and ⟨*pages*⟩ indicates the page range *for the original version.* The optional argument is a label. This is used to prefix the labels and citations in the document so they don't clash with other imported articles. If omitted, ⟨*dir*⟩/⟨*file*⟩ is used instead.

```
\newcommand*{\@importpubpaper}[4][\@importdir\@importfile]{%
  \bgroup
    \def\@importdir{#2/}%
    \def\@importfile{#3}%
    \@write@jmlr@import{#1}{#2}{#3}%
    \def\@extra@b@citeb{#1}%
    \def\@extra@binfo{#1}%
    \jmlrpages{#4}%
    \graphicspath{{\@importdir}}%
    \def\jmlrmaketitlehook{%

      \label{}%
      \def\titlebreak{ }%
      \addtomaincontents{toc}%

        {%
          \protect\contentsline{papertitle}{\@title}{\thepage}%
   {page.\thepage}}%
      \pdfbookmark{\@shorttitle}{chapter.\theHchapter}%
      \def\@jmlr@authors@sep{ \& }%

      \tocchapterpubauthor{\@jmlr@authors}%
      {%
        \@jmlrabbrvproceedings
        \ifx\@jmlrvolume\@empty
           \ifx\@jmlrpages\@empty\else\space\fi
```

```
        \else
           \space\@jmlrvolume
           \ifx\@jmlrissue\@empty
           \else
              (\@jmlrissue)%
           \fi
           \ifx\@jmlrpages\@empty\else:\fi
        \fi
        \ifx\@jmlrpages\@empty
        \else
           \@jmlrpages
           \ifx\@jmlryear\@empty\else,\fi
        \fi
        \space\@jmlryear
      }%

      \@write@author{#1}{\@jmlr@authors}%
    }%
    \def\InputIfFileExists##1##2##3{%
       \IfFileExists{##1}{%
          \@org@InputIfFileExists{##1}{##2}{##3}%
       }%
       {%
          \@org@InputIfFileExists{\@importdir##1}{##2}{##3}%
       }%
     }%
    \def\Xprefix{#1}%
    \jmlrimporthook
    \import{\@importdir\@importfile}%
    \def\Xprefix{}%
  \egroup
  \gdef\@shortauthor{}%
  \gdef\@shorttitle{}%
  \gdef\@firstauthor{}%
  \gdef\@jmlr@authors{\@jmlrauthors}%
  \gdef\@jmlrauthors{}%
  \gdef\@firstsurname{}%
}
\newcommand{\importpubpaper}[4][]{%
  \ClassError{jmlrbook}{\string\importpubpaper\space
not permitted outside ‘jmlrpapers’ environment}{}%
}
```

`\importpaper` Like `\importpubpaper` but sets the pages to the page-range for this book.

```
\newcommand{\@importpaper}[3][\@importdir\@importfile]{%
  \bgroup
    \def\@importdir{#2/}%
    \def\@importfile{#3}%
    \@write@jmlr@import{#1}{#2}{#3}%
```

```
    \def\@extra@b@citeb{#1}%
    \def\@extra@binfo{#1}%
    \jmlrpages{\protect\@articlepagesref}%
    \graphicspath{{\@importdir}}%
    \def\jmlrmaketitlehook{%
      \label{}%
      \def\titlebreak{ }%
      \addtomaincontents{toc}%
        {%
          \protect\contentsline{papertitle}{\@title}{\thepage}%
  {page.\thepage}}%
      \pdfbookmark{\@shorttitle}{chapter.\theHchapter}%
      \def\@jmlr@authors@sep{ \& }%
      \tocchapterpubauthor{\@jmlr@authors}%
      {%
        \@jmlrabbrvproceedings
        \ifx\@jmlrvolume\@empty
           \space
        \else
           \space\@jmlrvolume
           \ifx\@jmlrissue\@empty
           \else
              (\@jmlrissue)%
           \fi
           :%
        \fi
        \protect\articlepagesref{#1}%
        \ifx\@jmlryear\@empty\else,\fi
        \space\@jmlryear
      }%
      \@write@author{#1}{\@jmlr@authors}%
    }%
    \def\InputIfFileExists##1##2##3{%
       \IfFileExists{##1}{%
          \@org@InputIfFileExists{##1}{##2}{##3}%
       }%
       {%
          \@org@InputIfFileExists{\@importdir##1}{##2}{##3}%
       }%
     }%
    \def\Xprefix{#1}%
```

Disable `\jmlrvolume`, `\jmlryear`, `\jmlrworkshop` etc (since the imported papers belong to the same volume as the book—use `\importpubpaper` for papers pre-published in another volume).

```
    \let\jmlrvolume\@gobble
```

```
    \let\jmlryear\@gobble
    \let\jmlrworkshop\@gobble
    \let\jmlrissue\@gobble
    \let\jmlrpages\@gobble
    \jmlrimporthook
    \import{\@importdir\@importfile}%
    \def\Xprefix{}%
  \egroup
  \gdef\@shortauthor{}%
  \gdef\@shorttitle{}%
  \gdef\@firstauthor{}%
  \gdef\@jmlr@authors{\@jmlrauthors}%
  \gdef\@jmlrauthors{}%
  \gdef\@firstsurname{}%
}

\newcommand{\importpaper}[3][]{%
  \ClassError{jmlrbook}{\string\importpaper\space
not permitted outside 'jmlrpapers' environment}{}%
}
```

`\importarticle` Import a document that hasn't been published. Syntax: `\importarticle[`⟨*label*⟩`]{`⟨*dir*⟩`}{`⟨*file*⟩`}` where ⟨*dir*⟩ is the directory in which the paper is located and ⟨*file*⟩ is the name of the file. The optional argument is a label. This is used to prefix the labels and citations in the document so they don't clash with other imported articles. If omitted, ⟨*file*⟩ is used instead.

```
\newcommand{\@importarticle}[3][\@importdir\@importfile]{%
  \bgroup
    \def\@importdir{#2/}%
    \def\@importfile{#3}%
    \@write@jmlr@import{#1}{#2}{#3}%
    \def\@extra@b@citeb{#1}%
    \def\@extra@binfo{#1}%
    \def\jmlrmaketitlehook{%
    \def\titlebreak{ }%
      \addtomaincontents{toc}%
        {%
          \protect\contentsline{papertitle}{\@title}{\thepage}%
   {page.\thepage}}%
      \label{}%
      \pdfbookmark{\@shorttitle}{chapter.\theHchapter}%
      \def\@jmlr@authors@sep{ \& }%
      \tocchapterauthor{\@jmlr@authors}%
      \@write@author{#1}{\@jmlr@authors}%
      \jmlrpages{}%
      \jmlrvolume{}%
```

```
      \jmlryear{}%
      \jmlrsubmitted{}%
      \jmlrpublished{}%
      \jmlrproceedings{}{}%
    }%
    \graphicspath{{\@importdir}}%
    \def\InputIfFileExists##1##2##3{%
       \IfFileExists{##1}{%
          \@org@InputIfFileExists{##1}{##2}{##3}%
       }%
       {%
          \@org@InputIfFileExists{\@importdir##1}{##2}{##3}%
       }%
     }%
    \def\Xprefix{#1}%
    \jmlrimporthook

    \let\ps@jmlrtps\ps@articlet
    \import{\@importdir\@importfile}%
    \def\Xprefix{}%
  \egroup
  \gdef\@shortauthor{}%
  \gdef\@shorttitle{}%
  \gdef\@firstauthor{}%
  \gdef\@jmlr@authors{\@jmlrauthors}%
  \gdef\@jmlrauthors{}%
  \gdef\@firstsurname{}%
}
\newcommand{\importarticle}[3][]{%
  \ClassError{jmlrbook}{\string\importarticle\space
not permitted outside ‘jmlrpapers’ environment}{}%
}
```

\addtocpart Add a part to the TOC without printing anything in the text (but does a \cleardoublepage).

```
\newcommand{\addtocpart}[1]{%
  \cleardoublepage
  \refstepcounter{tocpart}%
  \addtocontents{toc}{\protect\tocpart{#1}}%
  \pdfbookmark[-1]{#1}{part.\thetocpart}%
}
\newcounter{tocpart}
```

\tocpart Define the appearance of a part in the TOC.

```
\newcommand{\tocpart}[1]{%
    \addpenalty{-\@highpenalty}%
    \vskip 1.0ex \@plus\p@
    \setlength\@tempdima{2.25em}%
    \begingroup
```

```
      \parindent \z@ \rightskip \@pnumwidth
      \parfillskip -\@pnumwidth
      \leavevmode \large\bfseries
      \advance\leftskip\@tempdima
      \hskip -\leftskip
      #1\nobreak\hfil \nobreak\hb@xt@\@pnumwidth{\hss \null}\par
      \penalty\@highpenalty
    \endgroup
}
```

Set up the layout of the chapter headings

```
\setlength{\prechapterskip}{3em}
\setlength{\postchapterskip}{20pt}
```

\chapternumberformat

```
\renewcommand{\chapternumberformat}[1]{%
 \Large\bfseries \@chapapp\space#1\par
}
```

\chaptertitleformat

```
\renewcommand{\chaptertitleformat}[1]{%
 \Large\bfseries #1}
```

\chapterformat

```
\renewcommand*{\chapterformat}{%
   \raggedright
}
```

Set up the format of a part in the book (not a part in an article).

\preparthook

```
\renewcommand{\preparthook}{\cleardoublepage\null\vfil}
```

\partnumberformat

```
\renewcommand{\partnumberformat}[1]{%
  \Huge\bfseries \@partapp\nobreakspace#1\par\nobreak
  \vskip 20\p@
}
```

\postparthook

```
\def\postparthook{%
  \thispagestyle{empty}%
  \vfil\newpage
  \null
  \thispagestyle{empty}%
  \newpage
}
```

\@curparthead The heading of the current part

```
\newcommand{\@curparthead}{}
```

\parttitleformat

```
\renewcommand{\parttitleformat}[1]{#1%
  \gdef\@curparthead{\@partapp\space \thepart. #1}%
  \@mkboth{\@curparthead}{\@curparthead}%
}
```

\firstpageno Change \firstpageno to do nothing as the page number will be determined by the book.

```
\renewcommand{\firstpageno}[1]{}
```

\tocchapterauthor Add the author of the current chapter to the table of contents.

```
\newcommand{\tocchapterauthor}[1]{%
  \addtomaincontents{toc}{\protect\contentsline{chapterauthor}{%
  #1}{}{}}%
}
```

tocchapterpubauthor Add the author of an imported prepublished paper to the table of contents. The first argument is the author (or list of authors). The second argument is the reference to the published article.

```
\newcommand{\tocchapterpubauthor}[2]{%
  \addtomaincontents{toc}{\protect\contentsline{chapterauthor}{%
  #1; #2.}{}{}}%
}
```

Set up the formatting in the TOC

```
\renewcommand*\@pnumwidth{2em}
```

\l@part Format for book parts

```
\renewcommand*\l@part[2]{%
  \ifnum \c@tocdepth >\m@ne
    \addpenalty{-\@highpenalty}%
    \vskip 1.0em \@plus\p@
    %\setlength\@tempdima{5em}%
    \settowidth\@tempdima{\large\bfseries \@partapp\space MM}%
    \vbox{%
      \pagerule
      \begingroup
        \parindent \z@ \rightskip \@pnumwidth
        \parfillskip -\@pnumwidth
        \leavevmode \large\bfseries
        \advance\leftskip\@tempdima
        \hskip -\leftskip
        \renewcommand*\numberline[1]{\hb@xt@ \@tempdima
          {\@partapp\space ##1\hfil }}%
        #1\nobreak\hfil \nobreak\hb@xt@\@pnumwidth{\hss
```

```
            \normalfont\normalsize #2}\par
          \penalty\@highpenalty
        \endgroup
        \pagerule
      }%
    \fi}
```

`\l@chapter`

```
\renewcommand{\l@chapter}[2]{%
  \ifnum\c@tocdepth>\m@ne
    \addpenalty{-\@highpenalty}%
    \vskip 1.0em \@plus \p@
    \setlength\@tempdima{2em}%
    \begingroup
      \parindent \z@
      \rightskip \@pnumwidth
      \parfillskip -\@pnumwidth
      \leavevmode \large \bfseries
      \advance \leftskip \@tempdima
      \hskip -\leftskip
        \renewcommand*\numberline[1]{\hb@xt@ \@tempdima
          {##1\hfil }}%
      #1\nobreak \hfil \nobreak \hb@xt@ \@pnumwidth {\hss
       \normalfont\normalsize #2}\par
      \penalty \@highpenalty
    \endgroup
  \fi
}
```

`\l@papertitle`

```
\newcommand*{\l@papertitle}[2]{%
  \ifnum \c@tocdepth >\m@ne
    \addpenalty{-\@highpenalty}%
    \vskip 1.0em \@plus\p@
    \setlength\@tempdima{3em}%
    \begingroup
      \leavevmode \raggedright\itshape
      #1\nobreak\hfill \nobreak\hb@xt@\@pnumwidth{\hss
       \normalfont#2}%
       \par
      \penalty\@highpenalty
    \endgroup
  \fi
}
```

`\l@chapterauthor`

```
\newcommand*\l@chapterauthor[2]{%
  \ifnum \c@tocdepth >\m@ne
```

```
    \begingroup
      \parindent \z@
      \rightskip \@pnumwidth
      \parfillskip -\@pnumwidth
      \leavevmode \raggedright
      \parbox{\linewidth-\@pnumwidth}{\raggedright#1\par}%
       \par
    \endgroup
  \fi}
```

\l@section

```
\renewcommand*\l@section[2]{%
  \ifnum \c@tocdepth >\m@ne
    \addpenalty{-\@highpenalty}%
    \vskip 1.0em \@plus\p@
    \setlength\@tempdima{3em}%
    \begingroup
      \parindent \z@ \rightskip \@pnumwidth
      \parfillskip -\@pnumwidth
      \leavevmode \normalsize\mdseries
      \advance\leftskip\@tempdima
      \hskip -\leftskip
      #1\nobreak\hfil \nobreak\hb@xt@\@pnumwidth{\hss #2}\par
      \penalty\@highpenalty
    \endgroup
  \fi}
```

\l@subsection

```
\renewcommand*\l@subsection[2]{%
  \ifnum \c@tocdepth >\m@ne
    \addpenalty{-\@highpenalty}%
    \vskip 1.0em \@plus\p@
    \setlength\@tempdima{3.5em}%
    \begingroup
      \parindent \z@ \rightskip \@pnumwidth
      \parfillskip -\@pnumwidth
      \leavevmode \normalsize\mdseries
      \advance\leftskip\@tempdima
      \hskip -\leftskip
      #1\nobreak\hfil \nobreak\hb@xt@\@pnumwidth{\hss #2}\par
      \penalty\@highpenalty
    \endgroup
  \fi}
```

\chaptermark

```
\renewcommand*{\chaptermark}[1]{%
  \@mkboth{\@curparthead}{\protect\thechapter. #1}%
}
```

Set up page styles

\firstpagehead

```
\newcommand{\firstpagehead}{}
```

\firstpagefoot

```
\newcommand{\firstpagefoot}{%
  \@reprint\hfill\thepage
}
```

\headfont Set the header font

```
\newcommand*{\headfont}{\reset@font\small\scshape}%
```

\footfont Set the footer font

```
\newcommand*{\footfont}{\reset@font\small\itshape}%
```

\ps@chplain Page style for first page of a chapter

```
\newcommand*{\ps@chplain}{%
  \let\@mkboth\@gobbletwo
  \renewcommand*{\@oddhead}{\headfont\firstpagehead}%
  \renewcommand*{\@evenhead}{}%
  \renewcommand*{\@oddfoot}{\footfont\firstpagefoot}%
  \renewcommand*{\@evenfoot}{\footfont\thepage\hfill
  }%
}
\let\ps@plain\ps@chplain
```

\ps@article Page style for the imported articles.

```
\newcommand*{\ps@article}{%
  \let\@mkboth\@gobbletwo
  \renewcommand*{\@oddhead}{\headfont\hfill\@shorttitle}%
  \renewcommand*{\@evenhead}{\headfont\@shortauthor\hfill}%
  \renewcommand*{\@oddfoot}{\footfont\hfill\thepage}
  \renewcommand*{\@evenfoot}{\footfont\thepage\hfill}
}
```

\ps@articlet Title page style for imported articles (imported using \importarticle)

```
\newcommand*{\ps@articlet}{%
  \let\@mkboth\@gobbletwo
  \renewcommand*{\@oddhead}{}%
  \renewcommand*{\@evenhead}{}%
  \renewcommand*{\@oddfoot}{\footfont\hfill\thepage}
  \renewcommand*{\@evenfoot}{\footfont\thepage\hfill}
}
```

\ps@jmlrbook Page style for book

```
\newcommand*{\ps@jmlrbook}{%
  \renewcommand*{\@oddfoot}{\footfont\hfill\thepage}
```

```
  \renewcommand*{\@evenfoot}{\footfont\thepage\hfill}
  \def\@evenhead{\headfont\leftmark\hfill}%
  \def\@oddhead{\hfill\headfont\rightmark}%
  \let\@mkboth\markboth
  \renewcommand*{\sectionmark}[1]{}%
}
```

`\markleft` Provide a command to set just the left header mark.

```
\newcommand*{\markleft}[1]{%
  \begingroup
    \let\label\relax
    \let\index\relax
    \let\glossary\relax
    \expandafter\@markleft\@themark{#1}%
    \@temptokena
    \expandafter{\@themark}%
    \mark{\the\@temptokena}
  \endgroup
  \if@nobreak
    \ifvmode
      \nobreak
    \fi
  \fi
}
\newcommand*{\@markleft}[3]{%
  \@temptokena{#2}%
  \unrestored@protected@xdef\@themark{{#3}{\the\@temptokena}}
}
```

`\morefrontmatter`

```
\renewcommand*{\morefrontmatter}{\pagestyle{jmlrbook}%
  \def\chaptermark##1{%
    \@mkboth{##1\hfill}{\hfill##1}}%
}
```

`\moremainmatter`

```
\renewcommand*{\moremainmatter}{\pagestyle{jmlrbook}%
  \def\chaptermark##1{%
    \@mkboth{\@curparthead}{\protect\thechapter. ##1}%
  }%
}
```

`\bibsection` Set the bibliography headings in the articles

```
\renewcommand*\bibsection{\section*{\refname}}
```

Set up the book commands:

```
\jmlrbookcommands
```

In the event that authors have used different versions of algorithm2e, define old command names.

```
\providecommand*{\SetNoLine}{\SetAlgoNoLine}
\providecommand*{\SetVline}{\SetAlgoVlined}
\providecommand*{\Setvlineskip}{\SetVlineSkip}
\providecommand*{\SetLine}{\SetAlgoLined}
\providecommand*{\dontprintsemicolon}{\DontPrintSemicolon}
\providecommand*{\printsemicolon}{\PrintSemicolon}
\providecommand*{\incmargin}{\IncMargin}
\providecommand*{\decmargin}[1]{\DecMargin{-#1}}
\providecommand*{\setnlskip}{\SetNlSkip}
\providecommand*{\Setnlskip}{\SetNlSkip}
\providecommand*{\setalcapskip}{\SetAlCapSkip}
\providecommand*{\setalcaphskip}{\SetAlCapHSkip}
\providecommand*{\nlSty}{\NlSty}
\providecommand*{\Setnlsty}{\SetNlSty}
\providecommand*{\linesnumbered}{\LinesNumbered}
\providecommand*{\linesnotnumbered}{\LinesNotNumbered}
\providecommand*{\linesnumberedhidden}{\LinesNumberedHidden}
\providecommand*{\showln}{\ShowLn}
\providecommand*{\showlnlabel}{\ShowLnLabel}
\providecommand*{\nocaptionofalgo}{\NoCaptionOfAlgo}
\providecommand*{\restorecaptionofalgo}{\RestoreCaptionOfAlgo}
\providecommand*{\restylealgo}{\RestyleAlgo}
\providecommand*{\Titleofalgo}{\TitleOfAlgo}
```

Index

Numbers written in italic refer to the page where the corresponding entry is described; numbers underlined refer to the code line of the definition; numbers in roman refer to the code lines where the entry is used.