

\LaTeX 2 ϵ Classes for the Journal of Machine Learning Research (JMLR) and Proceedings of Machine Learning Research (PMLR)

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2020-01-17 (version 1.25)

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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. Note that JMLR W&CP (JMLR: Workshop and Conference Proceedings) has been renamed PMLR (Proceedings of Machine Learning Research). Articles for new proceedings should use the `pmlr` class option.

The `jmlrbook` class is for combining articles that use the `jmlr` class into a book. The `jmlrbook` 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 PDF \LaTeX so authors should ensure that their articles can compile with PDF \LaTeX . Section 3 describes how to use the `jmlrbook` class.

As from v1.24, some non-class dependent commands and environments have been moved to a new package `jmlrutils` (see Section 2.5). This package is automatically loaded by `jmlr`, but may be used with other classes. (Note that you will need to explicitly load `algorithm2e` if you want to use the `algorithm` environment.)

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`

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 bib file for the proceedings (according to the PMLR specifications). It can also create a grey nonhyperlinked PDF/X compliant print version of

¹Currently `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.

the book. The application can be downloaded from <http://www.dickimaw-books.com/software/makejmlrbookgui/> where there is also a [troubleshooting section](#).

There is also a Perl script called `makejmlrbook`, which is distributed with the `jmlr` and `jmlrbook` bundle, however it is now deprecated and has been superseded by `makejmlrbookgui`. Note that PMLR (formerly JMLR W&CP) has new format guidelines that are followed by new versions of `makejmlrbookgui` but not by the Perl script `makejmlrbook`, so that script is no longer documented or supported and may be dropped from future versions of this bundle.

1.1 Required Packages

The `jmlr` class is based on the `article` class and loads the following packages: `jmlrutils` (see Section 2.5), `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 and \TeX . (GhostScript is also required for the print-ready version of the book.)

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).

pmlr The article is for the Proceedings of Machine Learning Research (PMLR).

wcp The article is for JMLR Workshop and Conference Proceedings (JMLR W&CP).

twocolumn Use two-column style.

onecolumn Use one-column style (default).

color Color version (see Section 2.6).

gray Grayscale version (see Section 2.6).

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 than 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 $\text{\LaTeX 2}_{\epsilon}$ font changing commands, such as `\bfseries` or `\textbf{<text>}`, rather than the obsolete \LaTeX 2.09 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/}
```

This command is provided by the url package which is automatically loaded.

`\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`. This command is provided by the supplementary package `jmlrutils`. Other commands are described in Section 2.5.

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` documentation¹ for further details.

2.5 jmlrutils supplementary package

The `jmlrutils` package is automatically loaded by the `jmlr` class but may be used with other classes.

2.5.1 Package Options

The following options may be passed to the `jmlrutils` package if it is to be used without the `jmlr` class.

maths Define the commands `\set` and `\oldvec` and redefine `\vec`. This will also automatically load the `amsmath` package. (Default.)

¹<http://ctan.org/pkg/natbib>

nomaths Don't define `\set` and `\oldvec` and don't redefine `\vec`.

theorems Define the theorem commands and environments listed in Section 2.5.5. (Default.)

notheorems Don't define the theorem commands and environments.

subfloats Define the sub-figure and sub-table commands listed in Section 2.5.2. (Default.)

nosubfloats Don't define the sub-figure and sub-table commands.

The non-default options are provided when `jmlrutils` is loaded without the `jmlr` class. Don't try passing the non-default options to `jmlrutils` if you are using the `jmlr` class as this could interfere with the build process for the proceedings or book.

The `jmlrutils` package doesn't recognise any of the `jmlr` class options (such as `tablecaption`).

2.5.2 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 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 `jmlrutils` package provides the following command for displaying the contents of a figure or table:

```
\floatconts
```

| |
|--|
| <pre>\floatconts{<label>}{<caption command>}{<contents>}</pre> |
|--|

This ensures that the caption is correctly positioned and that the contents are centred. 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}

```

If the `jmlr` class is used, the table caption (when used with `\floatconts`) will obey the table-caption class option, otherwise it will be placed above the table contents. Within the figure environment, `\floatconts` will put the caption below the contents. This command may be used within other floats.

The `jmlr` class automatically loads `graphicx` which defines:

`\includegraphics`

```
\includegraphics[<options>]{<file name>}
```

where *<options>* is a comma-separated list of options. If you are using `jmlrutils` with another class you need to load `graphicx` in order to use this command. See the documentation for the `graphicx` package for further details of this command and other provided commands.

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 when using the `jmlr` class. It's helpful if you can also provide a grayscale version of colour images. This should be labelled as the colour image but with `-gray` immediately before the extension. (The extension need not be the same as that of the colour 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 2.6 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`. Some of the keys specific to image files (such as the bounding box and type keys) do nothing with `\includeteximage`.

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. If you aren't using the `jmlr` class, you can prevent `jmlrutils` from defining these commands with the `nosubfloats` package option.

`\subfigure` `\subfigure[$\langle title \rangle$][$\langle valign \rangle$]{ $\langle contents \rangle$ }`

This makes a sub-figure where $\langle contents \rangle$ denotes the contents of the sub-figure. This should also include the `\label`. The first optional argument $\langle title \rangle$ 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 $\langle valign \rangle$, which may be one of: `t` (top), `c` (centred) or `b` (base).

For example, suppose there are two image files, `mypic1.png` and `mypic2.png`, in the sub-directory `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}
  }\quad % space out the images a bit
  \subfigure{%
    \label{fig:pic2}% label for this sub-figure
    \includegraphics{images/mypic2}
  }
}
\end{figure}
```

`\subtable` `\subtable[$\langle title \rangle$][$\langle valign \rangle$]{ $\langle contents \rangle$ }`

This is an analogous command for sub-tables. The default value for $\langle valign \rangle$ is `t`.

2.5.3 Algorithms

The `jmlr` class automatically loads the `algorithm2e` package. If you are using `jmlrutils` with another class, you will need to load `algorithm2e` if you want to use the `algorithm` and `algorithm2e` environments described below.

`algorithm` `\begin{algorithm}[$\langle placement \rangle$]`
`\langle contents \rangle`
`\end{algorithm}`

Enumerated textual algorithms can be displayed using the `algorithm` environment. The optional argument is as for `figure` and `table`.

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 `jmlrutils` package. For example:

```
\begin{algorithm}
\floatconts{alg:path}{%label
{\caption{Shortest Path}}}% caption
{% contents
\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*}
\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{ $x_1, \dots, x_n, w_1, \dots, w_n$ }
\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 documentation² for more details.

2.5.4 Description Lists

```
\begin{altdescription}{\langle widest label \rangle}
\item[\langle label \rangle] \langle item text \rangle
\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}
```

2.5.5 Theorems, Lemmas etc

The jmlrbook class doesn't work well with common theorem packages, so jmlrutils provides theorem code that won't conflict with jmlrbook. If you're using jmlrutils without the jmlr class, you can prevent the definition of these commands with the notheorems package option.

The jmlrutils package 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 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{\langle name \rangle}[\langle counter \rangle]{\langle title \rangle}[\langle outer counter \rangle]
```

²<http://ctan.org/pkg/algorithm2e>

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 unnumbered theorem-like environment.
\end{note}
```

2.5.6 Cross-Referencing

Always use `\label` when cross-referencing, rather than writing the number explicitly. The `jmlrutils` package provides some convenience commands to assist referencing. These com-

mands, 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.

`\exempleref` `\exempleref{\label list}`

Used to refer to an example or multiple examples.

2.5.7 Mathematics

The `jmlr` class loads the `amsmath` package so you can use any of the commands and environments defined in that package. The `jmlrutils` package will load `amsmath` if the default `maths` package option is used but won't load `amsmath` if the `nomaths` option is used. A brief summary of some of the more common commands and environments is provided here. See the `amsmath` documentation³ for further details.

`\set` `\set{\maths}`

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

The universal set is denoted \set{U}

This command won't be provided if the `nomaths` option is used.

³<http://ctan.org/pkg/amsmath>

`\vec` `\vec{<maths>}`

The `\vec` command is redefined by `jmlrutils` to use `\boldsymbol`, which is provided by `amsmath`. (This command won't be redefined if the `nomaths` option is used.) If you require the original `\vec`, you can access it with:

`\orgvec` `\orgvec{<maths>}`

This command won't be provided if the `nomaths` option is used.

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}
```

The above are provided by the \LaTeX kernel but may be adjusted by packages such as `amsmath`. The commands and environments below are provided by `amsmath`.

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*}
```

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 interrupt 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*`).

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

| | | | | | | | |
|----------------------|---------------------|-------------------------|---------------------|--------------------------|---------------------|-----------------------|----------------------|
| <code>\arccos</code> | <code>arccos</code> | <code>\deg</code> | <code>deg</code> | <code>\lg</code> | <code>lg</code> | <code>\projlim</code> | <code>projlim</code> |
| <code>\arcsin</code> | <code>arcsin</code> | <code>\det</code> | <code>det</code> | <code>\lim</code> | <code>lim</code> | <code>\sec</code> | <code>sec</code> |
| <code>\arctan</code> | <code>arctan</code> | <code>\dim</code> | <code>dim</code> | <code>\liminf</code> | <code>liminf</code> | <code>\sin</code> | <code>sin</code> |
| <code>\arg</code> | <code>arg</code> | <code>\exp</code> | <code>exp</code> | <code>\limsup</code> | <code>limsup</code> | <code>\sinh</code> | <code>sinh</code> |
| <code>\cos</code> | <code>cos</code> | <code>\gcd</code> | <code>gcd</code> | <code>\ln</code> | <code>ln</code> | <code>\sup</code> | <code>sup</code> |
| <code>\cosh</code> | <code>cosh</code> | <code>\hom</code> | <code>hom</code> | <code>\log</code> | <code>log</code> | <code>\tan</code> | <code>tan</code> |
| <code>\cot</code> | <code>cot</code> | <code>\inf</code> | <code>inf</code> | <code>\max</code> | <code>max</code> | <code>\tanh</code> | <code>tanh</code> |
| <code>\coth</code> | <code>coth</code> | <code>\injlim</code> | <code>injlim</code> | <code>\min</code> | <code>min</code> | | |
| <code>\csc</code> | <code>csc</code> | <code>\ker</code> | <code>ker</code> | <code>\Pr</code> | <code>Pr</code> | | |
| | | <code>\varlimsup</code> | \varlimsup | <code>\varinjlim</code> | \varinjlim | | |
| | | <code>\varliminf</code> | \varliminf | <code>\varprojlim</code> | \varprojlim | | |

2.6 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). This check is performed by code provided by the jmlr class not the jmlrutils package.

`\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` documentation⁴).

2.7 Where To Go For Help

If you have a general \LaTeX query, the first place to go to is the UK TUG FAQ⁵.

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> or have a look at [\$\text{\LaTeX}\$ for Complete Novices](#).

There are also forums, mailing lists and newsgroups. For example, \TeX on StackExchange (<http://tex.stackexchange.com/>), the \LaTeX Community (<http://www.latex-community.org/>), the texhax mailing list (<http://tug.org/mailman/listinfo/texhax>) and `comp.text.tex` (archives available at <http://groups.google.com/group/comp.text.tex/>).

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.

⁴<http://ctan.org/pkg/xcolor>

⁵<http://www.tex.ac.uk/faq>

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. See <http://www.dickimaw-books.com/software/makejmlrbookgui/> for details.

3.1 `jmlrbook` Class Options

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

pmlr The imported pre-published articles were published in the Proceedings of Machine Learning Research (PMLR).

wcp The imported pre-published articles were published in the JMLR Workshop and Conference Proceedings (JMLR W&CP).

If the book has a mixture of JMLR, JMLR W&CP or PMLR articles, you can switch between them using

`\jmlrnowcp`

`\jmlrnowcp`

(for JMLR) or

`\jmlrwcp`

`\jmlrwcp`

(for JMLR W&CP) or

`\jmlrpmlr`

`\jmlrpmlr`

(for PMLR). Alternatively, you can set the name of the journal or conference proceedings using:

jmlrproceedings

```
\jmlrproceedings{\short title}{\long title}
```

color Color version (see Section 2.6). Use this option for the on-line version with hyperlinks enabled (default).

gray Grayscale version (see Section 2.6). 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 than 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 2.6 for further details.) The optional argument, if present, was formerly used by `makejmlrbookgui` to make the logo a link to *<url>* on the index HTML page. (The HTML pages are no longer generated by the application as PMLR now generate the HTML from the .bib file for the proceedings.)

`\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 PMLR guidelines, should be changed to the surname of the first author (editor) followed by the final two digits of the year. See the PMLR 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 2.5.6, 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 be 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, issue¹, 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}{\mainvolume font}{\postmainvolume}
```

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

`\IfTitleElement`

```
\IfTitleElement{<element>}{<>true part>}{<>false part>}
```

¹The default title page layout doesn't use issue, but if required it can be set with `\issue{<number>}`

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 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 [troubleshooting section](#).

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

4 The Code

4.1 jmlrutils.sty Code

Non-class dependent code. This package is automatically loaded by jmlr but may be used with other classes.

```
1 \ProvidesPackage{jmlrutils}[2020/01/17 v1.25 (NLCT)]
```

Package options:

fjmlrutilsmaths Determine if the maths commands should be provided.

```
2 \newif\ifjmlrutilsmaths
3 \jmlrutilsmathstrue

4 \DeclareOption{maths}{\jmlrutilsmathstrue}
5 \DeclareOption{nomaths}{\jmlrutilsmathsfalse}
```

lutilstheorems Determine if the theorem environments should be provided.

```
6 \newif\ifjmlrutilstheorems
7 \jmlrutilstheoremstrue

8 \DeclareOption{theorems}{\jmlrutilstheoremstrue}
9 \DeclareOption{notheorems}{\jmlrutilstheoremsfalse}
```

rutilssubfloats Determine if the sub-floats should be provided.

```
10 \newif\ifjmlrutilssubfloats
11 \jmlrutilssubfloatstrue

12 \DeclareOption{subfloats}{\jmlrutilssubfloatstrue}
13 \DeclareOption{nosubfloats}{\jmlrutilssubfloatsfalse}

14 \ProcessOptions
```

Requires etoolbox:

```
15 \RequirePackage{etoolbox}
```

If the maths commands are needed, load amsmath.

```
16 \ifjmlrutilsmaths
17   \RequirePackage{amsmath}
18 \fi
```

The conditional `\iftablecaptiontop` will already have been defined by the jmlr class, so only needs to be defined if not already done.

tablecaptiontop

```

19 \ifundefined{iftablecaptiontop}
20 {\newif\iftablecaptiontop
21 \tablecaptiontoptrue}
22 {}

```

4.1.1 Cross-Referencing

Convenient macros for cross-referencing.

```

23 \newcommand*{\@jmlr@reflistsep}{, }
24 \newcommand*{\@jmlr@reflistlastsep}{ and }
25 \newcommand*{\sectionrefname}{Section}
26 \newcommand*{\sectionsrefname}{Sections}
27 \newcommand*{\equationrefname}{Equation}
28 \newcommand*{\equationsrefname}{Equations}
29 \newcommand*{\tablerefname}{Table}
30 \newcommand*{\tablesrefname}{Tables}
31 \newcommand*{\figurerefname}{Figure}
32 \newcommand*{\figuresrefname}{Figures}
33 \newcommand*{\algorithmrefname}{Algorithm}
34 \newcommand*{\algorithmsrefname}{Algorithms}
35 \newcommand*{\theoremrefname}{Theorem}
36 \newcommand*{\theoremsrefname}{Theorems}
37 \newcommand*{\lemmarefname}{Lemma}
38 \newcommand*{\lemmasrefname}{Lemmas}
39 \newcommand*{\remarkrefname}{Remark}
40 \newcommand*{\remarksrefname}{Remarks}
41 \newcommand*{\corollaryrefname}{Corollary}
42 \newcommand*{\corollarysrefname}{Corollaries}
43 \newcommand*{\definitionrefname}{Definition}
44 \newcommand*{\definitionsrefname}{Definitions}
45 \newcommand*{\conjecturerefname}{Conjecture}
46 \newcommand*{\conjecturesrefname}{Conjectures}
47 \newcommand*{\axiomrefname}{Axiom}
48 \newcommand*{\axiomsrefname}{Axioms}
49 \newcommand*{\examplerefname}{Example}
50 \newcommand*{\examplesrefname}{Examples}
51 \newcommand*{\appendixrefname}{Appendix}
52 \newcommand*{\appendixsrefname}{Appendices}
53 \newcommand*{\partrefname}{Part}
54 \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.

```

55 \newrobustcmd*{\objectref}[5]{%

```

```

56 \let\@objectname\@empty
57 \def\@objectref{}%
58 \let\@prevsep\@empty
59 \@for\@thislabel:=#1\do{%
60   \toks@{\@prevsep}%
61   \protected@edef\@objectref{\@objectref\the\toks@
62     #4\ref{\@thislabel}#5}%
63   \ifx\@objectname\@empty
64     \let\@objectname#2% singular tag
65   \else
66     \let\@objectname#3% plural tag
67     \let\@prevsep\@jmlr@reflistsep
68   \fi
69 }%
70 \ifx\@objectname#3% plural tag
71   \let\@prevsep\@jmlr@reflistlastsep
72 \fi
73 \@objectname~\@objectref
74 }

```

\sectionref

```

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

```

\equationref

```

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

```

\tableref

```

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

```

\figureref

```

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

```

\algorithmref

```

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

```

\theoremref

```

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

```

\lemmaref

```

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

```

`\remarkref`

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

`\corollaryref`

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

`\definitionref`

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

`\conjectureref`

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

`\axiomref`

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

`\exempleref`

```
99 \newcommand*{\exempleref}[1]{%
100   \objectref{#1}{\exemplerefname}{\examplesrefname}{}}{}}
```

`\appendixref`

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

`\partref`

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

4.1.2 Figures, Tables and Algorithms

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

```
105 \newcommand{\floatconts}[3]{%
106   \@ifundefined{@capttype conts}{\tableconts{#1}{#2}{#3}}%
107   {\csname\@capttype conts\endcsname{#1}{#2}{#3}}%
108 }
```

`\tableconts` This will already have been defined if the `jmlr` class was loaded.

```
109 \providecommand{\tableconts}[3]{%
110   #2\label{#1}\vskip\baselineskip
111   {\centering #3\par}%
112 }
```

`\figureconts`

```
113 \newcommand{\figureconts}[3]{%
114   {\centering #3\par}%
115   \vskip\baselineskip
116   #2\label{#1}%
117 }
```

The following macro and environment assume that `algorithm2e` has been loaded (which is done by the `jmlr` class). If the `jmlrutils` package is loaded without the `jmlr` class, the `algorithm2e` package will have to be explicitly loaded.

`\algocfconts` Command used by `\floatconts` to display the caption contents.

```
118 \newcommand{\algocfconts}[3]{%
119   \@algocf@pre@ruled
120   #2\label{#1}\kern2pt\hrule height.8pt depth0pt\kern2pt%
121   #3\@algocf@pre@ruled
122 }
```

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

```
123 \newenvironment{algorithm}[1][htbp]%
124 {%
125   \ifundef{\algocf}%
126   {'algorithm2e' package is required if you want to
127    use the algorithm environment}%
128   {}%
129   \begin{algocf}[#1]%
130   \renewcommand\@makecaption[2]{%
131     \hskip\AlCapHSkip
132     \parbox[t]{\hsize}{\algocf@captiontext{##1}{##2}}%
133   }%
134 }%
135 {%
136   \end{algocf}%
137 }
```

`fgraphicxloaded`

```
138 \AtBeginDocument{%
139   \@ifpackageloaded{graphicx}%
140   {\let\@jmlr@ifgraphicxloaded\@firstoftwo}%
141   {\let\@jmlr@ifgraphicxloaded\@secondoftwo}%
142 }
```

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

```
143 \newcommand*\includeteximage[2][ ]{%
144   \@jmlr@ifgraphicxloaded
145   {%
```

```

146 \def\Gin@req@sizes{%
147   \Gin@req@height\Gin@nat@height
148   \Gin@req@width\Gin@nat@width}%
149 \begingroup
150   \let\input@path\Ginput@path
151   \IfFileExists{#2}%
152   {%
153     \toks@{\input{#2}}%
154     \ifstrempy{#1}
155     {}%
156     {%
157       \@tempswatrue
158       \setkeys{Gin}{#1}%
159       \Gin@esetsize
160     }%
161     \the\toks@
162   }%
163   {\@warning{File ‘#2’ not found}}}%
164 \endgroup
165 }%
166 {\PackageError{jmlrutils}{'graphicx' package is required
167  if you want to use \string\includeteximage}{}}}%
168 }

```

Sub floats.

```
169 \ifjmlrutilssubfloats
```

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

\c@subfigure Define subfigure counter:

```

170 \newcounter{subfigure}
171 \@addtoreset{subfigure}{figure}

```

\thesubfigure

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

\p@subfigure

```

173 \renewcommand*{\p@subfigure}{\expandafter\@p@subfigure}
174 \newcommand*{\@p@subfigure}[1]{%
175   \protect\@subfigurelabel{\thefigure}{\thesubfigure}%
176 }

```

@subfigurelabel Define how label appears.

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

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

```

178 \newcommand*\@subfigref[1]{%
179   {%
180     \def\@subfigurelabel##1##2{\subfigurelabel{##2}}%

```

```

181     \ref{#1}%
182   }%
183 }
184 \newcommand*{\subfigref}[1]{%
185   \let\@objectname\@empty
186   \def\@objectref{}%
187   \let\@prevsep\@empty
188   \@for\@thislabel:=#1\do{%
189     \toks@{\@prevsep}%
190     \protected@edef\@objectref{\@objectref\the\toks@
191       \protect\@subfigref{\@thislabel}}%
192     \ifx\@objectname\@empty
193 \let\@objectname\@nil
194     \else
195 \let\@objectname\relax
196     \let\@prevsep\@jmlr@reflistsep
197     \fi
198   }%
199   \ifx\@objectname\relax
200     \let\@prevsep\@jmlr@reflistlastsep
201   \fi
202   \@objectref
203 }

```

\subfigurelabel

```

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

```

@subfloatcapbox Box to store subfloat caption.

```

205 \newsavebox\@subfloatcapbox

```

subfloatcontsbox Box to store subfloat contents.

```

206 \newsavebox\@subfloatcontsbox

```

\subfigure

```

207 \newcommand*{\subfigure}[1][b]{%
208   \bgroup
209   \def\@subfigcap{#1}%
210   \@subfigure
211 }

212 \newcommand*{\@subfigure}[2][b]{%
213   \advance\c@figure by 1\relax
214   \refstepcounter{subfigure}%
215   \sbox\@subfloatcapbox{\subfigurelabel{\thesubfigure}}%
216   \ifx\@subfigcap\@empty
217   \else
218     \space\@subfigcap
219   \fi}%
220   \sbox\@subfloatcontsbox{#2}%

```

```

221 \settowidth{\@tempdima}{\usebox\@subfloatcontsbox}%
222 \settowidth{\@tempdimb}{\usebox\@subfloatcapbox}%
223 \ifdim\@tempdimb>\@tempdima
224 \settowidth\@tempdimb{\subfigurelabel{\thesubfigure}\space}%
225 \addtolength{\@tempdima}{-\@tempdimb}%
226 \sbox\@subfloatcapbox{\subfigurelabel{\thesubfigure}\space
227 \parbox[t]{\@tempdima}{\@subfigcap}}%
228 \fi
229 \begin{tabular}[#1]{@{}c{}}%
230 \usebox\@subfloatcontsbox\\ \usebox\@subfloatcapbox
231 \end{tabular}%
232 \egroup
233 }

```

Sub-tables:

`\c@subtable` Define subtable counter:

```

234 \newcounter{subtable}
235 \@addtoreset{subtable}{table}

```

`\thesubtable`

```

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

```

`\p@subtable`

```

237 \renewcommand*{\p@subtable}{\expandafter\@p@subtable}
238 \newcommand*{\@p@subtable}[1]{%
239 \protect\@subtablelabel{\thetable}{\thesubtable}%
240 }

```

`\@subtablelabel` Define how label appears.

```

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

```

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

```

242 \newcommand*\@subtabref[1]{%
243 {%
244 \def\@subtablelabel##1##2{\subtablelabel{##2}}%
245 \ref{#1}%
246 }%
247 }
248 \newcommand*\@subtabref[1]{%
249 \let\@objectname\@empty
250 \def\@objectref{}%
251 \let\@prevsep\@empty
252 \@for\@thislabel:=#1\do{%
253 \toks@{\@prevsep}%
254 \protected@edef\@objectref{\@objectref\the\toks@
255 \protect\@subtabref{\@thislabel}}%
256 \ifx\@objectname\@empty
257 \let\@objectname\@nil

```



```

258         \else
259 \let\@objectname\relax
260         \let\@prevsep\@jmlr@reflistsep
261         \fi
262     }%
263     \ifx\@objectname\relax
264         \let\@prevsep\@jmlr@reflistlastsep
265     \fi
266     \@objectref
267 }

```

`\subtablelabel`

```

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

```

`\subtable`

```

269 \newcommand*{\subtable}[1][t]{%
270     \def\@subtabcap{#1}%
271     \@subtable
272 }

273 \newcommand*{\@subtable}[2][t]{%
274     \refstepcounter{subtable}%
275     \sbox\@subfloatcapbox{\subtablelabel{\thesubtable}}%
276     \ifx\@subtabcap\@empty
277     \else
278         \space\@subtabcap
279     \fi}%
280     \sbox\@subfloatcontsbox{#2}%
281     \settowidth{\@tempdima}{\usebox\@subfloatcontsbox}%
282     \settowidth{\@tempdimb}{\usebox\@subfloatcapbox}%
283     \ifdim\@tempdimb>\@tempdima
284         \settowidth\@tempdimb{\subtablelabel{\thesubtable}\space}%
285         \addtolength{\@tempdima}{-\@tempdimb}%
286         \sbox\@subfloatcapbox{\subtablelabel{\thesubtable}\space}
287         \parbox[t]{\@tempdima}{\@subtabcap}}%
288     \fi
289     \begin{tabular}[#1]{@{}c@{}}%
290     \usebox\@subfloatcapbox\\ \usebox\@subfloatcontsbox
291     \end{tabular}
292 }

```

End of sub-floats.

```

293 \fi

```

4.1.3 General Markup

Provide maths command if required.

```

294 \ifjmlrutilsmaths

```

`\set`

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

`\orgvec` Keep a copy of original `\vec` in case it's wanted.

```
296 \let\orgvec\vec
```

`\vec` Redefine `\vec` to produce a bold symbol. The `amsmath` package is required for this.

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

End of maths commands.

```
298 \fi
```

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

```
299 \newenvironment{enumerate*}%
300 {%
301   \ifnum\@enumdepth=0\relax
302     \setcounter{enumi}{0}%
303   \fi
304   \ifnum\@enumdepth>\thr@@
305     \@toodeep
306   \else
307     \advance\@enumdepth\@ne
308     \def\@enumctr{enumi}%
309     \list
310       {\labelenumi}%
311       {\@nmblisttrue\def\@listctr{enumi}%
312         \def\makelabel##1{\hss\llap{##1}}}%
313   \fi
314 }%
315 {\endlist}
```

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

```
316 \newenvironment{altdescription}[1]%
317   {\list{}}%
318   {%
319     \settowidth{\labelwidth}{\altdescriptionlabel{#1}}%
320     \setlength{\labelsep}{15pt}%
321     \setlength{\leftmargin}{2\labelsep}%
322     \addtolength{\leftmargin}{\labelwidth}%
323     \setlength{\rightmargin}{\labelsep}%
324     \let\makelabel\altdescriptionlabel
325   }%
326 }%
327 {\endlist}
328
329 \newcommand*{\altdescriptionlabel}[1]{\normalfont\bfseries #1\hfill}
```

`\mailto` Syntax: `\mailto{<address>}`
 330 `\newcommand*{\mailto}[1]{\texttt{#1}}`

4.1.4 Proofs and Theorems

331 `\ifjmlrutilstheorems`

This code is taken from `jmlr2e.sty`

`\jmlrBlackBox` End of proof marker. This command was formerly called `\BlackBox` but has been renamed in case of a clash with symbol packages.

332 `\newcommand{\jmlrBlackBox}{\rule{1.5ex}{1.5ex}}`

`\BlackBox` Backward compatibility in case it was used explicitly.

333 `\providecommand{\BlackBox}{\jmlrBlackBox}`

`\jmlrQED`

334 `\newcommand{\jmlrQED}{\hfill\jmlrBlackBox\par\bigskip}`

`\proofname`

335 `\providecommand{\proofname}{Proof}`

`proof` Proof environment

336 `\newenvironment{proof}%`

337 `{%`

338 `\par\noindent{\bfseries\upshape \proofname\ }%`

339 `}%`

340 `{\jmlrQED}`

Since `theorem`, `ntheorem` and `amsthm` all cause problems with the `jmlr` and `jmlrbook` classes, this package provides a simple alternative.

`\theorembodyfont`

`\theorembodyfont{}`

341 `\newcommand*{\theorembodyfont}[1]{%`

342 `\renewcommand*{\@theorembodyfont}{#1}%`

343 `}`

344 `\newcommand*{\@theorembodyfont}{\normalfont\itshape}%`

`theoremheaderfont`

`\theoremheaderfont{}`

345 `\newcommand*{\theoremheaderfont}[1]{%`

346 `\renewcommand*{\@theoremheaderfont}{#1}%`

347 `}`

348 `\newcommand*{\@theoremheaderfont}{\normalfont\bfseries }%`

`\theoremsep` `\theoremsep{<separation code>}`

```

349 \newcommand*{\theoremsep}[1]{%
350   \renewcommand*{\@theoremsep}{#1}%
351 }
352 \newcommand*{\@theoremsep}{}%

```

`\theorempostheader` `\theorempostheader{<text>}`

```

353 \newcommand*{\theorempostheader}[1]{%
354   \renewcommand*{\@theorempostheader}{#1}%
355 }
356 \newcommand*{\@theorempostheader}{}%

```

`\newtheorem`

```

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

```

Define starred version:

`\newtheorem*{<env-name>}{<title tag>}`

```

359 \newcommand*{\jmlr@snewtheorem}[2]{%
360   \cslet{\jmlr@thm@#1@body@font}{\@theorembodyfont}%
361   \cslet{\jmlr@thm@#1@header@font}{\@theoremheaderfont}%
362   \cslet{\jmlr@thm@#1@sep}{\@theoremsep}%
363   \cslet{\jmlr@thm@#1@postheader}{\@theorempostheader}%
364   \newenvironment{#1}%
365   {%
366     \trivlist
367     \item
368     [%
369       \hskip\labelsep{\csuse{\jmlr@thm@#1@header@font}#2%
370       \csuse{\jmlr@thm@#1@postheader}%
371     ]%
372     \mbox{}{\csuse{\jmlr@thm@#1@sep}%
373     \csuse{\jmlr@thm@#1@body@font}%
374   }%
375   {%
376     \endtrivlist
377   }%
378 }
379 }

```

Unstarred version needs adjusting to take the style into account:

`\@othm`

```

380 \newcommand{\jmlr@newtheorem}[1]{%
381   \cslet{\jmlr@thm@#1@body@font}{\@theorembodyfont}%
382   \cslet{\jmlr@thm@#1@header@font}{\@theoremheaderfont}%
383   \cslet{\jmlr@thm@#1@sep}{\@theoremsep}%
384   \cslet{\jmlr@thm@#1@postheader}{\@theorempostheader}%
385   \jmlr@org@newtheorem{#1}%
386 }

```

\@xthm

```

387 \renewcommand*{\@xthm}[2]{%
388   \def\@jmlr@currentthm{#1}%
389   \@begintheorem{#2}{\csname the#1\endcsname}%
390   \ignorespaces
391 }

```

\@ythm

```

392 \def\@ythm#1#2[#3]{%
393   \def\@jmlr@currentthm{#1}%
394   \@opargbegintheorem{#2}{\csname the#1\endcsname}{#3}%
395   \ignorespaces
396 }

```

\@begintheorem

```

397 \renewcommand*{\@begintheorem}[2]{%
398   \ifdef{\@jmlr@currentthm}%
399   {%
400     \letcs{\jmlr@this@theoremheader}{\jmlr@thm@\@jmlr@currentthm @header@font}%
401     \letcs{\jmlr@this@theorembody}{\jmlr@thm@\@jmlr@currentthm @body@font}%
402     \letcs{\jmlr@this@theoremsep}{\jmlr@thm@\@jmlr@currentthm @sep}%
403     \letcs{\jmlr@this@theorempostheader}{%
404       \jmlr@thm@\@jmlr@currentthm @postheader}%
405   }%
406   {%
407     \let\jmlr@this@theorembody\@theorembodyfont
408     \let\jmlr@this@theoremheader\@theoremheaderfont
409     \let\jmlr@this@theoremsep\@theoremsep
410     \let\jmlr@this@theorempostheader\@theorempostheader
411   }%
412   \trivlist
413     \item
414       [%
415         \hskip\labelsep{\jmlr@this@theoremheader #1\ #2%
416           \jmlr@this@theorempostheader}%
417       ]%
418     \mbox{}{\jmlr@this@theoremsep
419       \jmlr@this@theorembody
420 }

```

argbegintheorem

```

421 \renewcommand*{\@opargbegintheorem}[3]{%
422   \ifdef{\@jmlr@currentthm}%
423   {%
424     \letcs{\jmlr@this@theoremheader}{\jmlr@thm@\@jmlr@currentthm @header@font}%
425     \letcs{\jmlr@this@theorembody}{\jmlr@thm@\@jmlr@currentthm @body@font}%
426     \letcs{\jmlr@this@theoremsep}{\jmlr@thm@\@jmlr@currentthm @sep}%
427     \letcs{\jmlr@this@theorempostheader}%
428       {\jmlr@thm@\@jmlr@currentthm @postheader}%
429   }%
430   {%
431     \let\jmlr@this@theorembody\@theorembodyfont
432     \let\jmlr@this@theoremheader\@theoremheaderfont
433     \let\jmlr@this@theoremsep\@theoremsep
434     \let\jmlr@this@theorempostheader\@theorempostheader
435   }%
436   \trivlist
437   \item[\hskip\labelsep{\jmlr@this@theoremheader #1\ #2\ (#3)%
438     \jmlr@this@theorempostheader}]%
439   \mbox{}\jmlr@this@theoremsep
440   \jmlr@this@theorembody
441 }

```

example

```

442 \newtheorem{example}{Example}

```

theorem

```

443 \newtheorem{theorem}{Theorem}

```

lemma

```

444 \newtheorem{lemma}[theorem]{Lemma}

```

proposition

```

445 \newtheorem{proposition}[theorem]{Proposition}

```

remark

```

446 \newtheorem{remark}[theorem]{Remark}

```

corollary

```

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

```

definition

```

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

```

conjecture

```

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

```

axiom

```

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

```

End of theorem definitions.

451 \fi

4.2 jmlr.cls Code

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

Declare class and required TeX format:

452 \NeedsTeXFormat{LaTeX2e}

453 \ProvidesClass{jmlr}[2020/01/17 v1.25 (NLCT) Journal of Machine Learning Research]

Need xkeyval package to have key=value class options

454 \RequirePackage{xkeyval}

455 \RequirePackage{calc}

456 \RequirePackage{etoolbox}

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

jmlrprehyperref

457 \providecommand*{\jmlrprehyperref}{{}}

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

458 \newif\if@openright

459 \newif\if@mainmatter \@mainmattertrue

\ifgrayscale Determine whether to select grayscale alternatives

460 \@ifundefined{ifgrayscale}{

461 \newif\ifgrayscale

462 \grayscalefalse

463 }{{}}

464 \DeclareOptionX{color}{{\grayscalefalse

465 \PassOptionsToPackage{color}{xcolor}}}

466 \DeclareOptionX{gray}{{\grayscaletrue

467 \PassOptionsToPackage{gray}{xcolor}}}

draft

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

final

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

Can't load jmlrutils here but need the \iftablecaptiontop conditional for the class options.

tablecaptiontop

470 \newif\iftablecaptiontop

471 \tablecaptiontoptrue

Provide table contents command that uses this conditional. (The jmlrutils package doesn't use it.)

`\tablecnts`

```
472 \newcommand{\tablecnts}[3]{%
473   \iftablecaptiontop
474     #2\label{#1}\vskip\baselineskip
475     {\centering #3\par}%
476   \else
477     {\centering #3\par}%
478     \vskip\baselineskip
479     #2\label{#1}%
480   \fi
481 }
```

Determine if the table captions should go at the top.

`tablecaptiontop`

```
482 \DeclareOptionX{tablecaptiontop}{\tablecaptiontoptrue}
```

`tablecaptiontop`

```
483 \DeclareOptionX{tablecaptionbottom}{\tablecaptiontopfalse}
```

`tablecaption` Key=value interface.

```
484 \define@choicekey{jmlr.cls}{tablecaption}[\val\nr]{top,bottom}{%
485   \ifcase\nr\relax
486     \tablecaptiontoptrue
487   \or
488     \tablecaptiontopfalse
489   \fi
490 }
```

`\ifjmlrhtml` Determine if we are using TeX4ht. (Deprecated.) This option should no longer be used. The PMLR have changed the submission guidelines and the production editor should no longer supply HTML files.

```
491 \newif\ifjmlrhtml
492 \jmlrhtmlfalse
493 \DeclareOptionX{html}{%
494   \ClassWarning{jmlr}{html option is now deprecated}%
495   \jmlrhtmltrue}
496 \DeclareOptionX{nohtml}{\jmlrhtmlfalse}
```

Normal font size (default is 11pt).

```
497 \def\pt@size{11pt}
498 \DeclareOptionX{10pt}{\renewcommand{\pt@size}{10pt}}
499 \DeclareOptionX{11pt}{\renewcommand{\pt@size}{11pt}}
500 \DeclareOptionX{12pt}{\renewcommand{\pt@size}{12pt}}
```


jmlrproceedings The name of the proceedings.
501 \newcommand*{\@jmlrproceedings}{Journal of Machine Learning Research}

abbrvproceedings The abbreviated name of the proceedings.
502 \newcommand*{\@jmlrabbrvproceedings}{JMLR}

jmlrproceedings Sets the title and abbreviation of the proceedings
503 \newcommand*{\jmlrproceedings}[2]{%
504 \renewcommand*{\@jmlrabbrvproceedings}{#1}%
505 \renewcommand*{\@jmlrproceedings}{#2}%
506 }

\jmlrnowcp
507 \newcommand*{\jmlrnowcp}{%
508 \jmlrproceedings{JMLR}{Journal of Machine Learning Research}%
509 }

\jmlrwc
510 \newcommand*{\jmlrwc}{%
511 \jmlrproceedings{JMLR W&CP}{JMLR: Workshop and Conference Proceedings}%
512 }

\jmlrpmlr The JMLR W&CP has been renamed PMLR, so provide code to switch to this instead,
513 \newcommand*{\jmlrpmlr}{%
514 \jmlrproceedings{PMLR}{Proceedings of Machine Learning Research}%
515 }

This is a journal (non JMLR W&CP/PMLR) article:
516 \DeclareOptionX{nowcp}{\jmlrnowcp}

This is an article for JMLR W&CP
517 \DeclareOptionX{wcp}{\jmlrwc}

This is an article for PMLR
518 \DeclareOptionX{pmlr}{\jmlrpmlr}

oneside
519 \DeclareOptionX{oneside}{\@twosidefalse \@mparswitchfalse}

twoside
520 \DeclareOptionX{twoside}{\@twosidetrue \@mparswitchtrue}

Set two-sided format
521 \@twosidetrue

The default paper size is letter, but provide 7 × 10in alternative:
522 \newif\ifviiXx
523 \viiXxfalse
524 \DeclareOptionX{7x10}{\viiXxtrue}
525 \DeclareOptionX{letterpaper}{\PassOptionsToPackage{letterpaper}{typearea}}

Pass all remaining options to article class:

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

Execute required options:

```
527 \ExecuteOptions{letterpaper}
```

Process options:

```
528 \ProcessOptionsX
```

Load article class.

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

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

```
530 \ifviiXx
531   \setlength{\paperwidth}{7in}
532   \setlength{\paperheight}{10in}
533   \setlength{\textwidth}{5.25in}
534   \setlength{\textheight}{8.2in}
535   \setlength{\topmargin}{0.4in}
536   \setlength{\headheight}{0.2in}
537   \setlength{\headsep}{0.2in}
538   \setlength{\hoffset}{-1in}
539   \setlength{\voffset}{-1in}
540   \setlength{\evensidemargin}{0.75in}
541   \setlength{\oddsidemargin}{1.0in}
542 \else
543   \setlength{\oddsidemargin}{0.25in}
544   \setlength{\evensidemargin}{0.25in}
545   \setlength{\marginparwidth}{0.07 true in}
546   \setlength{\topmargin}{-0.5in}
547   \addtolength{\headsep}{0.25in}
548   \setlength{\textheight}{8.5 true in}
549   \setlength{\textwidth}{6.0 true in}
550 \fi
```

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

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

Required packages:

```
552 \RequirePackage{amsmath}
553 \RequirePackage{amssymb}
554 \RequirePackage{natbib}
555 \RequirePackage{graphicx}
556 \RequirePackage{url}
557 \PassOptionsToPackage{x11names}{xcolor}
558 \RequirePackage{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.) For some reason, loading algorithm2e causes the message

(\end occurred inside a group at level 1)

I don't know why, but it's outside the control of this class.

```
559 \PassOptionsToPackage{algo2e,ruled}{algorithm2e}
560 \RequirePackage{algorithm2e}
```

Set the algorithm margin to zero.

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

Load jmlrutils before hyperref.

```
562 \RequirePackage{jmlrutils}
```

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

```
563 \jmlrprehyperref
```

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

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

Load hyperref:

```
565 \RequirePackage{hyperref}
566 \RequirePackage{nameref}
```

```
567 % Do stuff that has to come immediately after \sty{hyperref} and
568 % \sty{nameref} are loaded:
```

```
569 %\changes{1.16}{2012/05/15}{added \cs{@post@hyperref}}
570 \@ifundefined{@post@hyperref}{}{\@post@hyperref}
```

Set up hyperref options:

```
571 \hypersetup{colorlinks,
572             linkcolor=blue,
573             citecolor=blue,
574             urlcolor=magenta,
575             linktocpage,
576             plainpages=false}
```

```
577 \ifgrayscale
```

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

```
578 \hypersetup{draft}
579 \fi
```

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

```
580 \renewcommand{\topfraction}{0.95} % let figure take up nearly whole page
581 \renewcommand{\textfraction}{0.05} % let figure take up nearly whole page
widows/orphans
```

```
582 \widowpenalty=10000\relax
583 \clubpenalty=10000\relax
```

Put marginal notes on the outside of the page

```
584 \mparswitchtrue
```

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

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

4.2.1 Sections

`\section`

```
587 \renewcommand{\section}{\@startsection{section}{1}{\z@}%  
588   {-0.24in \@plus -1ex \@minus -.2ex}%  
589   {0.10in \@plus .2ex}%  
590   {\normalfont\rmfamily\bfseries\large\raggedright}%  
591 }
```

`\subsection`

```
592 \renewcommand\subsection{\@startsection{subsection}{2}{\z@}%  
593   {-0.20in \@plus -1ex \@minus -.2ex}%  
594   {0.08in \@plus .2ex}%  
595   {\normalfont\rmfamily\bfseries\normalsize\raggedright}%  
596 }
```

`\subsubsection`

```
597 \renewcommand\subsubsection{\@startsection{subsubsection}{3}{\z@}%  
598   {-0.18in \@plus -1ex \@minus -.2ex}%  
599   {0.08in \@plus .2ex}%  
600   {\normalfont\normalsize\rmfamily\mdseries\scshape\raggedright}%  
601 }
```

`\paragraph`

```
602 \renewcommand\paragraph{\@startsection{paragraph}{4}{\z@}%  
603   {1.5ex plus 0.5ex minus .2ex}%  
604   {-1em}%  
605   {\normalfont\normalsize\rmfamily\bfseries}%  
606 }
```

`\subparagraph`

```
607 \renewcommand\subparagraph{\@startsection{subparagraph}{5}{\z@}%  
608   {1.5ex plus 0.5ex minus .2ex}%  
609   {-1em}%  
610   {\normalfont\normalsize\rmfamily\bfseries\itshape}}
```

`\@secntformat` Redefine the way the section number appears in the section heading.

```
611 \renewcommand*\@secntformat[1]{%  
612   \csname pre#1num\endcsname  
613   \csname the#1\endcsname.\enskip  
614 }
```

4.2.2 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.)

```
615 \renewcommand*\@makefntext[1]{%  
616   \@setpar
```

```

617 {%
618   \@@par
619   \@tempdima\hsize
620   \advance \@tempdima -15pt\relax
621   \parshape \@ne 15pt \@tempdima
622 }%
623 \par
624 \parindent 2em\noindent
625 \hbox to \z@ {\hss {\@thefnmark }\footnoteseptext\hfil }#1%
626 }

```

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

```

627 \newcommand*{\footnoteseptext}{. }

```

`\thanks` Added optional argument to `\footnotetext` as per <http://tex.stackexchange.com/questions/229295>.

```

628 \renewcommand*{\thanks}[1]{%
629   \footnotemark
630   \protected@xdef\@thanks{\@thanks
631     \protect\footnotetext[\arabic{footnote}]{#1}}%
632 }

```

4.2.3 Article abstract

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

`abstract`

```

633 \ifjmlrhtml
634   \renewenvironment{abstract}{\HCode{<h3>}Abstract\HCode{</h3>}}{%
635   \else
636     \renewenvironment{abstract}

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

```

4.2.4 Keywords

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

`keywords`

```

642 \newenvironment{keywords}
643 {\bgroup\leftskip 20pt\rightskip 20pt \small\noindent{\bfseries
644 Keywords:} \ignorespaces}%
645 {\par\egroup\vskip 0.25ex}

```

4.2.5 Title Page Information

This code has been taken from jmlr2e.sty.

Title stuff, borrowed in part from aaai92.sty

```
646 \newlength\aftertitskip      \newlength\beforetitskip
647 \newlength\interauthorskip  \newlength\aftermaketitskip
```

Changeable parameters.

```
648 \setlength\aftertitskip{0.1in plus 0.2in minus 0.2in}
649 \setlength\beforetitskip{0.05in plus 0.08in minus 0.08in}
650 \setlength\interauthorskip{0.08in plus 0.1in minus 0.1in}
651 \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.

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

`\titletag`

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

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

```
654 \renewcommand*{\title}[2][\@title]{%
655   \def\@shorttitle{#1}%
656   \def\@title{#2}%
657   \protected@write\@auxout{}{\string\jmlr@title{#1}{#2}}%
658   \jmlrtitlehook
659 }
```

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

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

`\jmlrtitlehook`

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

`\jmlr@title` AUX command provided for MakeJmlrBookGUI

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

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

```
663 \renewcommand*{\author}[2][{}]{%
664   \def\@author{#2}%
665   \def\@sauthor{#1}%
666   \def\@jmlr@aux@author{#2}\@onelevel@sanitize\@jmlr@aux@author
667   \ifx\@sauthor\@empty
668     \let\@jmlr@aux@sauthor\@jmlr@aux@author
669   \else
670     \let\@shortauthor\@sauthor
```

```

671 \def\@jmlr@aux@sauthor{#1}\@onelevel@sanitize\@jmlr@aux@sauthor
672 \fi
673 \jmlrauthorhook
674 \protected@write\@auxout
675 {}{\string\jmlr@author{\@jmlr@aux@sauthor}{\@jmlr@aux@author}}%
676 }

```

\jmlrauthorhook

```

677 \newcommand*{\jmlrauthorhook}{}

```

\jmlr@author AUX command provided for MakeJmlrBookGUI

```

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

```

\@shortauthor

```

679 \newcommand*{\@shortauthor}{}

```

\@firstauthor

```

680 \newcommand*{\@firstauthor}{}

```

\@firstsurname

```

681 \newcommand*{\@firstsurname}{}

```

\jmlrlength

```

682 \newlength\jmlrlength

```

\jmlrmaketitle Make the title

```

683 \def\jmlrmaketitle{%
684 \jmlrpremaketitlehook
685 \def\@jmlr@authors@sep{, }%
686 \par
687 \begingroup

688 \def\footnoteseptext{ }%
689 \def\thempfn{\textsuperscript{\thefootnote}}%
690 \def\thefootnote{\fnsymbol{footnote}}%

691 \if@twocolumn
692 \twocolumn[\@jmlrmaketitle]%
693 \else
694 \@jmlrmaketitle
695 \fi
696 \@thanks
697 \endgroup
698 \label{jmlrstart}%
699 \ifx\@sauthor\@empty
700 \settowidth{\jmlrlength}{\@evenhead}%
701 \ifdim\jmlrlength>\textwidth
702 \def\@shortauthor{\@firstsurname\space et al.}%

```

```

703 \fi
704 \fi
705 \settowidth{\jmlrlength}{\@titlefoot}%
706 \ifdim\jmlrlength>\textwidth
707 \def\@jmlrauthors{\@firstauthor\space \emph{et al}}%
708 \fi
709 \jmlrmaketitlehook
710 \thispagestyle{jmlrtps}%
711 \setcounter{footnote}{0}%
712 \let\maketitle\relax \let\@maketitle\relax
713 \gdef\@thanks{}\gdef\@author{}\let\thanks\@gobble
714 \def\@jmlr@authors@sep{ \& }%
715 }

```

lrmaketitlehook

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

```

remaketitlehook

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

```

Provide a different title layout for HTML

lrhtmlmaketitle

```

718 \newcommand{\jmlrhtmlmaketitle}{%
719 \ifx\@jmlr@authors\@empty
720 \sbox\jmlrbox{\let\addr\relax\@author}%
721 \fi
722 \noindent\HCode{<h2>}\@title\HCode{</h2>}
723 \noindent\@jmlr@authors
724 }

```

\jmlrbox Define a save box

```
725 \newsavebox\jmlrbox

```

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

```

726 \ifjmlrhtml
727 \let\maketitle\jmlrhtmlmaketitle
728 \else
729 \let\maketitle\jmlrmaketitle
730 \fi

```

Author and editor information.

```

731 \def\@startauthor{\noindent \normalsize\bfseries}
732 \def\@endauthor{}
733 \def\@starteditor{\noindent \small {\bfseries \@edname:~}}
734 \def\@endeditor{\normalsize}

```

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


```

\jmlrprettitle
735 \def\jmlrprettitle{\vskip\beforetitskip\begin{center}\Large\bfseries}

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

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

\jmlrpreauthor
738 \def\jmlrpreauthor{%
739 \bgroup
740   \def\nametag##1{##1}%
741   \def\and{\unskip\enspace{\normalfont and}\enspace}%

742   \def\addr{\mdseries\small\itshape}%
743   \def\name{\ClassError{jmlr}{Use \string\Name{Author's Name} not \string\name}{}}%
744   \def\email{\ClassError{jmlr}{Use \string\Email{address} not \string\email}{}}%
745   \def\AND{\@endauthor\normalfont\hss \vskip \interauthorskip
746     \@startauthor}%
747   \@startauthor
748 }

\addr  Initialise to do nothing if used outside of \author
749 \newcommand{\addr}{}

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

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

\@parsename  Parse a name. Appends forename to \@forenames and stores surname in \@surname.
752 \def\@parsename#1 #2\end@parsename{%
753   \def\@tmp{#2}%
754   \ifx\@tmp\@nnil
755     \def\@surname{#1}%
756     \let\@nextparsename\@parsenamenoop
757   \else
758     \@getinitial#1-\relax\relax\end@getinitial
759     \ifx\@forenames\@empty
760       \def\@forenames{#1}%
761       \protected@edef\@initials{\@initial}%
762     \else
763       \expandafter\toks@\expandafter{\@forenames}%
764       \edef\@forenames{\space\the\toks@}%
765       \expandafter\toks@\expandafter{\@initials}%
766       \protected@edef\@initials{\the\toks@\@initial}%

```

```

767 \fi
768 \let\@nextparsename\@parsename
769 \fi
770 \@nextparsename#2\end@parsename
771 }
772 \def\@parsenamenoop#1\end@parsename{}

```

\@getinitial

```

773 \def\@getinitial#1#2-#3#4\end@getinitial{%
774 \def\@jmlr@tmp{#3}%
775 \if\@jmlr@tmp\relax
776 \def\@initial{#1.}%
777 \else
778 \def\@initial{#1.-#3.}%
779 \fi
780 }

```

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

```

781 \newcommand*{\Name}[2][{}]{%
782 \def\@authorlist{#1}%
783 \def\@forenames{}%
784 \def\@surname{}%
785 \def\@nametag##1{}%
786 \@parsename#2 \@nil\end@parsename
787 \ifx\@shortauthor\@empty
788 \ifx\@sauthor\@empty
789 \global\let\@shortauthor\@surname
790 \global\let\@firstsurname\@surname
791 \fi
792 \ifx\@authorlist\@empty
793 \protected@xdef\@jmlrauthors{\@initials\space\@surname}%
794 \else
795 \protected@xdef\@jmlrauthors{\@authorlist}%
796 \fi
797 \global\let\@firstauthor\@jmlrauthors
798 \else
799 \ifx\@sauthor\@empty
800 \expandafter\toks@\expandafter{\@shortauthor}%
801 \protected@xdef\@shortauthor{\the\toks@\space\@surname}%
802 \fi
803 \ifx\@authorlist\@empty
804 \ifx\@jmlrauthors\@empty
805 \protected@xdef\@jmlrauthors{\@initials\space\@surname}%
806 \else
807 \protected@xdef\@jmlrauthors{\@jmlrauthors
808 \noexpand\@jmlr@authors@sep
809 \@initials\space\@surname}%
810 \fi

```

```

811 \else
812 \ifx\@jmlrauthors\@empty
813 \protected@xdef\@jmlrauthors{\@authorlist}%
814 \else
815 \protected@xdef\@jmlrauthors{\@jmlrauthors
816 \noexpand\@jmlr@authors@sep
817 \@authorlist
818 }%
819 \fi
820 \fi
821 \fi
822 \def\nametag##1{##1}%
823 \@name #2%
824 }

```

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

```

825 \newcommand*{\jmlrabbrnamelist}[1]{%
826 \def\nametag##1{%
827 \def\@jmlr@authors@sep{,}%
828 \def\@jmlr@namelist{}%
829 \@for\@thisname:=#1\do{%
830 \expandafter\@jmlrabbrname\expandafter{\@thisname}%
831 \ifx\@jmlr@namelist\@empty
832 \protected@edef\@jmlr@namelist{%
833 \@initials\space\@surname
834 }%
835 \else
836 \protected@edef\@jmlr@namelist{%
837 \@jmlr@namelist
838 \noexpand\@jmlr@authors@sep
839 \@initials\space\@surname
840 }%
841 \fi
842 }%
843 \def\@jmlr@authors@sep{ \& }%
844 \@jmlr@namelist
845 }

```

\@jmlrabbrname

```

846 \newcommand*{\@jmlrabbrname}[1]{%
847 \def\@initials{}%
848 \def\@surname{}%
849 \def\@forenames{}%
850 \@parsename#1 \@nil\end@parsename
851 }

```

\Email

```

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

```

\jmlrpostauthor

```
853 \def\jmlrpostauthor{\@endauthor\egroup
854   \par
855   \vskip \aftermaketitskip
856   \noindent
857   \ifx\@editor\@empty
858   \else
859     \@starteditor \@editor \@endeditor
860   \fi
861   \vskip \aftermaketitskip
862 }
```

\@jmlrmaketitle

```
863 \def\@jmlrmaketitle{\vbox{\hsize\textwidth
864   \linewidth\hsize
865   \jmlrprettitle
866   {%
867     \def\titletag##1{##1}%
868     \@title
869   }%
870   \jmlrposttitle
871   \jmlrpreauthor \@author \jmlrpostauthor
872 }}
```

\kernelmachines Convenience command

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

\editorname Label for the editor

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

\editorsname Label for the editor

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

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

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

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

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

\editor A single editor

```
879 \def\editor#1{%
880   \global\let\@edname\editorname
881   \gdef\@editor{#1}%
882 }
```

`\editors` Multiple editors

```
883 \def\editors#1{%
884   \global\let\@edname\editorsname
885   \gdef\@editor{#1}%
886 }
```

4.2.6 Pagestyles

This is taken from `jmlr2e.sty`

`\firstpageno` Set the page counter.

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

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

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

Label end page.

`\@jmlrenddoc` Label end page

```
889 \newcommand*\@jmlrenddoc{%
890   \phantomsection
891   \protected@edef\@currentlabelname{end of \@shorttitle}%
892   \label{jmlrend}\null
893   \global\let\@reprint\@empty
894 }
```

`\@titlefoot`

```
895 \newcommand*\@titlefoot{\scriptsize\copyright\space\@jmlryear
896   \space\@jmlr@authors.\hfill
897   \@reprint
898 }
```

`\reprint`

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

`\ps@jmlrtps` Title page style

```
902 \newcommand\ps@jmlrtps{%
903   \let\@mkboth\@gobbletwo
904   \def\@oddhead{\scriptsize \@jmlrproceedings
905     \ifx\@jmlrvolume\@empty
906       \else
907         \space\@jmlrvolume
908         \ifx\@jmlrissue\@empty\else(\@jmlrissue)\fi
909         \ifx\@jmlrpages\@empty
910           \ifx\@jmlryear\@empty
911             \else
```

```

912         \if@jmlrissue\@empty,\fi
913     \fi
914     \else
915         :%
916     \fi
917 \fi
918 \ifx\@jmlrpages\@empty
919 \else
920     \ifx\@jmlrvolume\@empty\space\fi
921     \@jmlrpages
922     \ifx\@jmlryear\@empty\else,\fi
923 \fi
924 \ifx\@jmlryear\@empty\else\space\@jmlryear\fi
925 \hfill
926 \ifx\@jmlrworkshop\@empty
927     \ifx\@jmlrsubmitted\@empty
928     \else
929         Submitted \@jmlrsubmitted
930         \ifx\@jmlrpublished\@empty\else;\fi
931     \fi
932     \ifx\@jmlrpublished\@empty
933     \else
934         \space Published \@jmlrpublished
935     \fi
936 \else
937     \space\@jmlrworkshop
938 \fi
939 }%
940 \let\@evenhead\@oddhead
941 \def\@oddfoot{\@titlefoot}%
942 \let\@evenfoot\@oddfoot
943 }

```

\ps@jmlrps Page style for subsequent pages

```

944 \def\ps@jmlrps{%
945     \let\@mkboth\@gobbletwo
946     \def\@oddhead{\hfill {\small\scshape \@shorttitle} \hfill}%
947     \def\@oddfoot{\hfill \small\rmfamily \thepage \hfill}%
948     \def\@evenhead{\hfill {\small\scshape \@shortauthor} \hfill}%
949     \def\@evenfoot{\hfill \small\rmfamily \thepage \hfill}%
950 }%

```

Set the page style:

```
951 \pagestyle{jmlrps}
```

Set the heading information:

\@jmlrvolume The volume number:

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

```

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

\@jmlrissue The issue number:
954 \providecommand*{\@jmlrissue}{}

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

\@jmlryear The year of publication:
956 \providecommand*{\@jmlryear}{}

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

\@jmlrpages The page range:
958 \providecommand*{\@jmlrpages{\pageref{jmlrstart}--\pageref{jmlrend}}}

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

\@jmlrsubmitted The date the article was submitted:
960 \providecommand*{\@jmlrsubmitted}{}

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

\@jmlrpublished The date the article was published:
962 \providecommand*{\@jmlrpublished}{}

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

\@jmlrworkshop The name of the workshop:
964 \providecommand*{\@jmlrworkshop}{}

\jmlrworkshop
965 \newcommand*{\jmlrworkshop}[1]{%
966 \renewcommand*{\@jmlrworkshop}{#1}%
967 \protected@write\@auxout{}\string\jmlr@workshop{#1}}%
968 }

\jmlr@workshop
969 \newcommand*{\jmlr@workshop}[1]{%

```

```

\date
970 \renewcommand*{\date}[1]{%
971 \renewcommand*{\@date}{#1}%
972 \protected@write\@auxout{}\string\jmlr@date{#1}}%
973 }

```

```

\jmlr@date
974 \newcommand*{\jmlr@date}[1]{}

```

```

\@jmlrauthors
975 \newcommand*{\@jmlrauthors}{}

```

```

\@jmlr@authors
976 \newcommand*{\@jmlr@authors}{\@jmlrauthors}

```

```

\jmlrauthors This is provided in case \Name doesn't set \@jmlrauthors correctly.
977 \newcommand*{\jmlrauthors}[1]{\global\def\@jmlr@authors{#1}}

```

4.2.7 Miscellany

This code was taken from jmlr2e.sty.

Define macros for figure captions and table titles

```

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

```

Figurecenter prints the caption title centered.

```

981 \def\figurecenter#1#2{\centerline{{\slshape #1} #2}}
982 \def\figurecenter#1#2{\centerline{{\small\slshape #1} {\small #2}}}

```

Allow “hanging indents” in long captions

```

\@makecaption
983 \long\def\@makecaption#1#2{%
984 \vskip 10pt
985 \setbox\@tempboxa\hbox{#1: #2}%
986 \ifdim \wd\@tempboxa >\hsize % IF longer than one line:
987 \begin{list}{#1:}{%
988 \settowidth{\labelwidth}{#1:}
989 \setlength{\leftmargin}{\labelwidth}
990 \addtolength{\leftmargin}{\labelsep}
991 }\item #2 \end{list}\par % Output in quote mode
992 \else % ELSE center.
993 \hbox to\hsize{\hfil\box\@tempboxa\hfil}
994 \fi}

```

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

```

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

```


\acks Acknowledgements

```
997 \newcommand{\acks}[1]{\section*{Acknowledgments}#1}
```

Research Note

\researchnote

```
998 \newcommand{\researchnote}[1]{\noindent {\LARGE\itshape Research Note} #1}
```

Other macros now moved to jmlrutils.

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

```
999 \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. (Extension shouldn't be specified.)

```
1000 \ifjmlrhtml
```

```
1001 \else
```

```
1002 \let\@org@Ginclude@graphics\Ginclude@graphics
```

Since graphics 2019/07/01, the file name parsing has changed to allow for UTF-8 characters. So provide patches for the old and new versions and work out which one to use.

\Ginclude@graphics This is a patched version of the old \Ginclude@graphics.

```
1003 \def\@jmlr@old@Ginclude@graphics#1{%
```

```
1004 \begingroup
```

```
1005 \let\input@path\Ginput@path
```

```
1006 \ifprint{\filename@parse{#1-gray}}{\filename@parse{#1}}%
```

```
1007 \ifx\filename@ext\relax
```

```
1008 \@for\Gin@temp:=\Gin@extensions\do{%
```

```
1009 \ifx\Gin@ext\relax
```

```
1010 \Gin@getbase\Gin@temp
```

```
1011 \fi}%
```

```
1012 \else
```

```
1013 \ifprint{\filename@parse{#1}}{\}%
```

```
1014 \Gin@getbase{\Gin@sepdefault\filename@ext}%
```

```
1015 \ifx\Gin@ext\relax
```

```
1016 \@warning{File ‘#1’ not found}%
```

```
1017 \def\Gin@base{\filename@area\filename@base}%
```

```
1018 \edef\Gin@ext{\Gin@sepdefault\filename@ext}%
```

```
1019 \fi
```

```
1020 \fi
```

```
1021 \ifx\Gin@ext\relax
```

```
1022 \ifprint{\@org@Ginclude@graphics{#1}}%
```

```
1023 {%
```

```
1024 \@latex@error{File ‘#1’ not found}%
```

```
1025 {I could not locate the file with any of these extensions:^^J%
```

```
1026 \Gin@extensions^^J\@ehc}%
```

```
1027 }%
```

```
1028 \else
```

```
1029 \@ifundefined{Gin@rule@\Gin@ext}%
```

```

1030         {\ifx\Gin@rule@*\@undefined
1031             \@latex@error{Unknown graphics extension: \Gin@ext}\@ehc
1032         \else
1033             \expandafter\Gin@setfile\Gin@rule@*{\Gin@base\Gin@ext}%
1034             \fi}%
1035     {\expandafter\expandafter\expandafter\Gin@setfile
1036         \csname Gin@rule@\Gin@ext\endcsname{\Gin@base\Gin@ext}}%
1037     \fi
1038 \endgroup}

```

include@graphics This is a patch of the new version.

```

1039 \def\@jmlr@new@Gininclude@graphics#1{%
1040     \ifx\detokenize\@undefined\else
1041         \edef\Gin@extensions{\detokenize\expandafter{\Gin@extensions}}%
1042     \fi
1043     \begingroup
1044     \let\input@path\Gininput@path
1045     \ifprint{\set@curr@file{#1-gray}}{\set@curr@file{#1}}%
1046     \expandafter\filename@parse\expandafter{\@curr@file}%
1047     \ifx\filename@ext\Gin@gzext
1048         \expandafter\filename@parse\expandafter{\filename@base}%
1049     \ifx\filename@ext\relax
1050         \let\filename@ext\Gin@gzext
1051     \else
1052         \edef\Gin@ext{\Gin@ext\Gin@sepdefault\Gin@gzext}%
1053     \fi
1054 \fi
1055 \let\@jmlr@filename@ext\filename@ext
1056 \ifx\filename@ext\relax
1057     \@for\Gin@temp:=\Gin@extensions\do{%
1058         \ifx\Gin@ext\relax
1059             \Gin@getbase\Gin@temp
1060         \fi}%
1061 \ifprint
1062 {\ifx\Gin@ext\relax
1063     \set@curr@file{#1}%
1064     \expandafter\filename@parse\expandafter{\@curr@file}%
1065     \ifx\filename@ext\Gin@gzext
1066         \expandafter\filename@parse\expandafter{\filename@base}%
1067     \ifx\filename@ext\relax
1068         \let\filename@ext\Gin@gzext
1069     \else
1070         \edef\Gin@ext{\Gin@ext\Gin@sepdefault\Gin@gzext}%
1071     \fi
1072 \fi
1073 \let\@jmlr@filename@ext\filename@ext
1074 \ifx\filename@ext\relax
1075     \@for\Gin@temp:=\Gin@extensions\do{%
1076         \ifx\Gin@ext\relax

```

```

1077         \Gin@getbase\Gin@temp
1078     \fi}%
1079 \fi
1080 \fi}{}%
1081 \fi
1082 \ifx\@jmlr@filename@ext\relax
1083 \else
1084     \Gin@getbase{\Gin@sepdefault\filename@ext}%
1085     \ifx\Gin@ext\relax
1086         \let\Gin@savibase\filename@base
1087         \let\Gin@savext\filename@ext
1088         \edef\filename@base{\filename@base\Gin@sepdefault\filename@ext}%
1089         \let\filename@ext\relax
1090         \@for\Gin@temp:=\Gin@extensions\do{%
1091             \ifx\Gin@ext\relax
1092                 \Gin@getbase\Gin@temp
1093             \fi}%
1094             \ifx\Gin@ext\relax
1095                 \let\filename@base\Gin@savibase
1096                 \let\filename@ext\Gin@savext
1097             \fi
1098         \fi
1099         \ifx\Gin@ext\relax
1100             \@warning{File '#1' not found}%
1101             \def\Gin@base{\filename@area\filename@base}%
1102             \edef\Gin@ext{\Gin@sepdefault\filename@ext}%
1103         \fi
1104     \fi
1105     \ifx\Gin@ext\relax
1106         \@latex@error{File '#1' not found}%
1107         {I could not locate the file with any of these extensions:^^J%
1108         \Gin@extensions^^J\@ehc}%
1109     \else
1110         \@ifundefined{Gin@rule@\Gin@ext}%
1111         {\ifx\Gin@rule@\@undefined
1112             \@latex@error{Unknown graphics extension: \Gin@ext}\@ehc
1113         \else
1114             \expandafter\Gin@setfile\Gin@rule*{\Gin@base\Gin@ext}%
1115             \fi}%
1116         {\expandafter\expandafter\expandafter\Gin@setfile
1117         \csname Gin@rule@\Gin@ext\endcsname{\Gin@base\Gin@ext}}%
1118     \fi
1119 \endgroup
1120 }

```

Determine which one to use:

```

1121 \ifpackagelater{graphics}{2019/07/01}
1122 {\let\Gin@include@graphics\@jmlr@new\Gin@include@graphics}%
1123 {\let\Gin@include@graphics\@jmlr@old\Gin@include@graphics}%

```

1124 \fi

\artappendix Switch to appendices in an article

```
1125 \newcommand{\artappendix}{\par
1126   \setcounter{section}{0}
1127   \setcounter{subsection}{0}
1128   \def\thesection{\Alph{section}}

1129   \def\theHsection{\theHchapter.\Alph{section}}
1130   \def\presectionnum{Appendix~}%
1131 }
```

The default assumes a stand-alone article.

\appendix

```
1132 \let\appendix\artappendix
```

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

```
1133 \newcommand{\booklinebreak}[1][{}]{}
```

4.2.8 Compatibility with combine.cls

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

```
1134 \newcounter{chapter}
1135 \renewcommand\thechapter{\@arabic\c@chapter}
1136 \newcommand\@chapapp{\chaptername}
```

Add sections to the chapter reset.

```
1137 \@addtoreset{section}{chapter}
```

\chaptermark

```
1138 \newcommand*\chaptermark[1]{}
```

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

\bookchapter

```
1139 \newcommand\bookchapter{%
1140   \if@openright\cleardoublepage\else\clearpage\fi
1141   \thispagestyle{plain}%
1142   \global\@topnum\z@
1143   \@afterindentfalse
1144   \secdef\@chapter\@schapter}
```

\artchapter Disable chapters for articles.

```
1145 \newcommand\artchapter{%
1146   \ClassError{jmlr}{Chapters not permitted in articles}{}}
```

```

\chapter The default assumes a stand-alone document.
1147 \let\chapter\artchapter

Label for the chapter entries in the toc.
1148 \def\@chaptoclabel{chapter}

\@chapter Numbered chapters
1149 \def\@chapter[#1]#2{\ifnum \c@secnumdepth >\m@ne
1150 \refstepcounter{chapter}%
1151 \if@mainmatter
1152 \typeout{\@chapapp\space\thechapter.}%
1153 \addcontentsline{toc}{\@chaptoclabel}%
1154 {\protect\numberline{\thechapter}#1}%
1155 \else
1156 \addcontentsline{toc}{\@chaptoclabel}{#1}%
1157 \fi
1158 \else
1159 \addcontentsline{toc}{\@chaptoclabel}{#1}%
1160 \fi
1161 \chaptermark{#1}%
1162 \addtocontents{lof}{\protect\addvspace{10\p@}}%
1163 \addtocontents{lot}{\protect\addvspace{10\p@}}%
1164 \if@twocolumn
1165 \@topnewpage[\@makechapterhead{#2}]%
1166 \else
1167 \@makechapterhead{#2}%
1168 \@afterheading
1169 \fi}

\chaptertitleformat Formats the chapter title
1170 \newcommand{\chaptertitleformat}[1]{%
1171 \Huge\bfseries#1%
1172 }

\chapternumberformat Formats the chapter number
1173 \newcommand{\chapternumberformat}[1]{%
1174 \huge\bfseries \@chapapp\space#1\par\nobreak
1175 \vskip 20\p@
1176 }

\chapterformat Overall format for chapter headings
1177 \newcommand*{\chapterformat}{\raggedright}

\postchapterskip Vertical gap after chapter heading
1178 \newlength\postchapterskip
1179 \setlength\postchapterskip{40pt}

```

`\prechapterskip` Vertical gap before chapter heading

```
1180 \newlength\prechapterskip
1181 \setlength\prechapterskip{50pt}
```

`makechapterhead` Chapter heading for numbered chapters

```
1182 \def\@makechapterhead#1{%
1183   \null\vskip\prechapterskip
1184   {\parindent \z@ \normalfont\chapterformat
1185     \ifnum \c@secnumdepth >\m@ne
1186       \if@mainmatter
1187         \chapternumberformat{\thechapter}%
1188       \fi
1189     \fi
1190     \interlinepenalty\@M
1191     \chaptertitleformat{#1}\par\nobreak
1192     \vskip \postchapterskip
1193   }}
```

`\@schapter` Unnumbered chapters.

```
1194 \def\@schapter#1{\if@twocolumn
1195                   \@topnewpage[\@makeschapterhead{#1}]%
1196                   \else
1197                   \@makeschapterhead{#1}%
1198                   \@afterheading
1199                   \fi}
```

`akeschapterhead` Layout for unnumbered chapter headings

```
1200 \def\@makeschapterhead#1{%
1201   \vspace*{\prechapterskip}%
1202   {\parindent \z@
1203     \normalfont\chapterformat
1204     \interlinepenalty\@M
1205     \chaptertitleformat{#1}\par\nobreak
1206     \vskip \postchapterskip
1207   }}
```

`\l@chapter` Format for chapter entry in toc

```
1208 \newcommand*\l@chapter[2]{%
1209   \ifnum \c@tocdepth >\m@ne
1210     \addpenalty{-\@highpenalty}%
1211     \vskip 1.0em \@plus\p@
1212     \setlength\@tempdima{1.5em}%
1213     \begingroup
1214       \parindent \z@ \rightskip \@pnumwidth
1215       \parfillskip -\@pnumwidth
1216       \leavevmode \large\bfseries
1217       \advance\leftskip\@tempdima
1218       \hskip -\leftskip
1219       #1\nobreak\hfil \nobreak\hb@xt@\@pnumwidth{\hss #2}\par
```

```

1220      \penalty\@highpenalty
1221      \endgroup
1222      \fi}

```

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

```

1223 \let\l@appendix\l@chapter

```

`\chaptername`

```

1224 \newcommand\chaptername{Chapter}

```

`\frontmatter` Start the front matter (in book)

```

1225 \newcommand\frontmatter{%
1226   \cleardoublepage
1227   \@mainmatterfalse
1228   \renewcommand*{\theHchapter}{front-\thechapter}%
1229   \pagenumbering{roman}%
1230   \morefrontmatter
1231 }
1232 \newcommand\morefrontmatter{}

```

`\mainmatter` Start the main matter (in book)

```

1233 \newcommand\mainmatter{%
1234   \cleardoublepage
1235   \@mainmattertrue
1236   \setcounter{chapter}{0}%
1237   \renewcommand*{\theHchapter}{\thechapter}%
1238   \pagenumbering{arabic}%
1239   \moremainmatter
1240 }
1241 \newcommand\moremainmatter{}

```

`\backmatter` Start the back matter (in book)

```

1242 \newcommand\backmatter{%
1243   \if@openright
1244     \cleardoublepage
1245   \else
1246     \clearpage
1247   \fi
1248   \@mainmatterfalse}

```

`booktocpreamble`

```

1249 \newcommand*{\booktocpreamble}{}

```

`booktocpostamble`

```

1250 \newcommand*{\booktocpostamble}{}

```

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

```

1251 \newcommand\booktableofcontents{%
1252   \if@twocolumn
1253     \@restonecoltrue\onecolumn
1254   \else
1255     \@restonecolfalse
1256   \fi
1257   \chapter*{\contentsname
1258     \@mkboth{\MakeUppercase\contentsname}{\MakeUppercase\contentsname}}%
1259   \booktocpreamble
1260   \@starttoc{toc}%
1261   \booktocpostamble
1262   \if@restonecol
1263     \twocolumn
1264   \else
1265     \clearpage
1266   \fi
1267   \@mkboth{}{}%
1268 }

```

`tableofcontents` Table of contents for individual articles.

```

1269 \let\arttableofcontents\tableofcontents

```

`\artpart` A part in an article

```

1270 \newcommand{\artpart}{%
1271   \def\toclevel@part{0}%
1272   \if@noskipsec \leavevmode\fi
1273   \par
1274   \addvspace{4ex}%
1275   \@afterindentfalse
1276   \secdef\artpart\artpart
1277 }
1278 \let\@artpart\@part
1279 \let\@sartpart\@spart

```

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

```

1280 \newcommand\bookpart{%
1281   \def\toclevel@part{-1}%
1282   \if@openright
1283     \cleardoublepage
1284   \else
1285     \clearpage
1286   \fi
1287   \thispagestyle{plain}%
1288   \if@twocolumn
1289     \onecolumn
1290     \@tempwattrue
1291   \else
1292     \@tempwafalse

```



```

1293 \fi
1294 \preparthook
1295 \secdef\@bookpart\@sbookpart}

parttitleformat  Format of the title for a part (in a book)
1296 \newcommand{\parttitleformat}[1]{%
1297   \Huge\bfseries#1%
1298 }

      Part labels
1299 \newcommand*{\@parttoclabel}{part}

\@partapp
1300 \def\@partapp{\partname}

partnumberformat  Format of the part number (in a book)
1301 \newcommand{\partnumberformat}[1]{%
1302   \Huge\bfseries \@partapp\nobreakspace#1\par\nobreak
1303   \vskip 20\p@
1304 }

\preparthook  Hook at the start of a part (in a book)
1305 \newcommand{\preparthook}{\null\vfil}

\partformat  Overall format of part
1306 \newcommand*{\partformat}{\centering}

\@bookpart  Numbered book part format
1307 \def\@bookpart[#1]#2{%
1308   \ifnum \c@secnumdepth >-2\relax
1309     \refstepcounter{part}%
1310     \addcontentsline{toc}{\@parttoclabel}{\protect\numberline{\thepart}#1}%
1311   \else
1312     \addcontentsline{toc}{\@parttoclabel}{#1}%
1313   \fi
1314   \markboth{}{}%
1315   {\interlinepenalty \@M
1316     \normalfont\partformat
1317     \ifnum \c@secnumdepth >-2\relax
1318       \partnumberformat{\thepart}%
1319     \fi
1320     \parttitleformat{#2}\par}%
1321   \postparthook}

\@sbookpart  Unnumbered book part format
1322 \def\@sbookpart#1{%
1323   {\interlinepenalty \@M
1324     \normalfont\partformat
1325     \parttitleformat{#1}\par}%
1326   \postparthook}

```

\postparthook Hook after part heading

```
1327 \def\postparthook{\vfil\newpage
1328             \if@twoside
1329             \if@openright
1330             \null
1331             \thispagestyle{empty}%
1332             \newpage
1333             \fi
1334             \fi
1335             \if@tempswa
1336             \twocolumn
1337             \fi}
```

\bookappendix Switch to appendices in book

```
1338 \newcommand\bookappendix{\par
1339 \setcounter{table}{0}%
1340 \setcounter{figure}{0}%
1341 \zeroextracounters
1342 \par
1343 \gdef\theHchapter{\Alph {chapter}}%
1344 \xdef\Hy@chapapp{\Hy@appendixstring}%
1345 \setcounter{chapter}{0}%
1346 \setcounter{section}{0}%
1347 \gdef\@chapapp{\appendixname}%
1348 \gdef\thechapter{\@Alph\c@chapter}%
1349 \def\@write@jmlr@import{\@write@jmlr@apdimport}%
1350 \csname appendixmore\endcsname
1351 }
```

Define commands to switch between book/article modes

jmlrbookcommands Switch to book commands

```
1352 \newcommand*{\jmlrbookcommands}{%
1353 \let\part\bookpart
1354 \let\chapter\bookchapter
1355 \let\appendix\bookappendix
1356 \let\tableofcontents\booktableofcontents
1357 \def\thesection{\thechapter.\arabic{section}}%
1358 }
```

articlecommands Switch to article commands

```
1359 \newcommand*{\jmlrarticlecommands}{%
1360 \let\part\artpart
1361 \let\chapter\artchapter
1362 \let\appendix\artappendix
1363 \let\tableofcontents\arttableofcontents
1364 \def\thesection{\arabic{section}}%
1365 }
```

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

@check@packages

```

1366 \newcommand*{\@jmlr@check@packages}{%
1367   \ifpackageloaded{epsfig}{%
1368     \ClassError{jmlr}{Obsolete package ‘epsfig’ detected.
1369     \MessageBreak
1370     Please use \string\includegraphics\space to include images
1371     instead}}{}{}%
1372   \ifpackageloaded{psfig}{%
1373     \ClassError{jmlr}{Obsolete package ‘psfig’ detected.
1374     \MessageBreak
1375     Please use \string\includegraphics\space to include images
1376     instead}}{}{}%
1377   \@ifpackageloaded{subfig}{%
1378     \ClassError{jmlr}{Package ‘subfig’ detected.\MessageBreak
1379     This will cause a conflict if the article is incorporated
1380     \MessageBreak
1381     into a book using jmlbook.cls.
1382     \MessageBreak
1383     Please use \string\subfigure\space and
1384     \string\subtable\space instead}}{}{}%
1385   \@ifpackageloaded{theorem}{%
1386     \ClassError{jmlr}{Package ‘theorem’ detected.\MessageBreak
1387     This can cause a conflict with other packages used by jmlr}}{}{}%
1388   \@ifpackageloaded{ntheorem}{%
1389     \ClassError{jmlr}{Package ‘ntheorem’ detected.\MessageBreak
1390     This can cause a conflict with other packages used by jmlr}}{}{}%
1391   \@ifpackageloaded{amsthm}{%
1392     \ClassError{jmlr}{Package ‘amsthm’ detected.\MessageBreak
1393     This package conflicts with the jmlr class}}{}{}%
1394   \@ifpackageloaded{pdfpages}{Package ‘pdfpages’ detected.\MessageBreak
1395   This can cause a problem for jmlrbook}}{}{}%
1396   \@ifpackageloaded{geometry}{Package ‘geometry’ detected.\MessageBreak
1397   This can cause a problem for jmlrbook}}{}{}%
1398   \@ifpackageloaded{tabularx}{%
1399     \ClassError{jmlr}{Package ‘tabularx’ detected.\MessageBreak
1400     This will break footnote links}}{}{}%

1401   \@ifpackageloaded{jmlr2e}{%
1402     \ClassError{jmlr}{Package ‘jmlr2e’ detected.\MessageBreak
1403     This can’t be used with the jmlr class}}{}{}%
1404 }
1405 \AtBeginDocument{%
1406   \@jmlr@check@packages
1407   \let\@jmlr@check@packages\relax
1408 }

```

ssPackageChecks 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.)

```

1409 \newcommand*{\jmlrSuppressPackageChecks}{%
1410   \let\@jmlr@check@packages\relax
1411 }

```

Discourage authors from using obsolete commands:

\obsoletefontcs

```

1412 \DeclareRobustCommand*\obsoletefontcs[1]{%
1413   \ClassWarning{jmlr}{Obsolete command
1414     \expandafter\string\csname#1\endcsname\space detected}%
1415   \csname #1 \endcsname
1416 }

```

\bf

```

1417 \renewcommand*\bf{%
1418   \obsoletefontcs{bf}%
1419 }

```

\it

```

1420 \renewcommand*\it{%
1421   \obsoletefontcs{it}%
1422 }

```

\sc

```

1423 \renewcommand*\sc{%
1424   \obsoletefontcs{sc}%
1425 }

```

\rm

```

1426 \renewcommand*\rm{%
1427   \obsoletefontcs{rm}%
1428 }

```

\sf

```

1429 \renewcommand*\sf{%
1430   \obsoletefontcs{sf}%
1431 }

```

\tt

```

1432 \renewcommand*\tt{%
1433   \obsoletefontcs{tt}%
1434 }

```

ckforpseudocode Check for pseudocode package since it conflicts with the algorithm package and quite often both packages are used in the same book or proceedings.

```

1435 \providecommand*\jmlrcheckforpseudocode{%
1436   \@ifpackageloaded{pseudocode}%
1437   {%

```

```

1438 \let\pseudoRETURN\RETURN
1439 \let\pseudoTRUE\TRUE
1440 \let\pseudoFALSE\FALSE
1441 \let\pseudoAND\AND
1442 \let\pseudoOR\OR
1443 \let\pseudoNOT\NOT
1444 \let\pseudoTO\TO
1445 \let\pseudoCOMMENT\COMMENT
1446 \let\pseudoIF\IF
1447 \let\pseudoELSE\ELSE
1448 \let\pseudoFOR\FOR
1449 \let\pseudoFORALL\FORALL
1450 \let\pseudoWHILE\WHILE
1451 \let\pseudoREPEAT\REPEAT
1452 \let\pseudoUNTIL\UNTIL
1453 \let\pseudoENDFOR\ENDFOR
1454 \let\RETURN\undefined
1455 \let\TRUE\undefined
1456 \let\FALSE\undefined
1457 \let\AND\undefined
1458 \let\OR\undefined
1459 \let\NOT\undefined
1460 \let\TO\undefined
1461 \let\COMMENT\undefined
1462 \let\IF\undefined
1463 \let\ELSE\undefined
1464 \let\FOR\undefined
1465 \let\FORALL\undefined
1466 \let\WHILE\undefined
1467 \let\REPEAT\undefined
1468 \let\UNTIL\undefined
1469 \let\ENDFOR\undefined
1470 \preto\pseudocode{%
1471 \let\RETURN\pseudoRETURN
1472 \let\TRUE\pseudoTRUE
1473 \let\FALSE\pseudoFALSE
1474 \let\AND\pseudoAND
1475 \let\OR\pseudoOR
1476 \let\NOT\pseudoNOT
1477 \let\TO\pseudoTO
1478 \let\COMMENT\pseudoCOMMENT
1479 \let\IF\pseudoIF
1480 \let\ELSE\pseudoELSE
1481 \let\FOR\pseudoFOR
1482 \let\FORALL\pseudoFORALL
1483 \let\WHILE\pseudoWHILE
1484 \let\REPEAT\pseudoREPEAT
1485 \let\UNTIL\pseudoUNTIL
1486 \let\ENDFOR\pseudoENDFOR

```

```

1487     }%
1488 }%
1489 {}%
1490 }
1491 \jmlrcheckforpseudocode

```

4.3 jmlrbook.cls Code

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

```

1492 \NeedsTeXFormat{LaTeX2e}

Declare class:
1493 \ProvidesClass{jmlrbook}[2020/01/17 v1.25 (NLCT) JMLR Book Style]

Need xkeyval package to have key=value class options
1494 \RequirePackage{xkeyval}

Requires double spacing for the title page
1495 \RequirePackage{setspace}

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

```

jmlrprefacefile

```

1496 \newcommand*\jmlrprefacepath{}

The fink package is now deprecated, so only use it if currfile isn't installed.
1497 \IfFileExists{currfile.sty}%
1498 {
1499   \RequirePackage{currfile}
1500   \renewcommand*\jmlrprefacepath{\currfilepath}
1501 }%
1502 {%

1503   \RequirePackage{fink}
1504   \ifdef\finkpath
1505   {%
1506     \renewcommand*\jmlrprefacepath{\finkpath}%
1507   }
1508   {%

fink version too old.
1509   \ClassWarning{jmlrbook}{Install 'currfile' package or update
1510     'fink' package}
1511   }
1512 }

```

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

```

1513 \providecommand*\jmlrprehyperref{}

```

\ifgrayscale Determine whether to select color or grayscale

```

1514 \newif\ifgrayscale
1515 \grayscalefalse

```

draft

```
1516 \DeclareOptionX{draft}{\setlength\overfullrule{5pt}}
```

final

```
1517 \DeclareOptionX{final}{\setlength\overfullrule{0pt}}
```

color

```
1518 \DeclareOptionX{color}{\grayscalefalse}
```

gray

```
1519 \DeclareOptionX{gray}{\grayscaletrue}
```

Pass letterpaper and 7x10 to jmlr.

letterpaper

```
1520 \DeclareOptionX{letterpaper}{\PassOptionsToClass{\CurrentOption}{jmlr}}
```

7x10

```
1521 \DeclareOptionX{7x10}{\PassOptionsToClass{\CurrentOption}{jmlr}}
```

Pass html and nohtml to jmlr. (Used by makejmlrbookgui)

html

```
1522 \DeclareOptionX{html}{\PassOptionsToClass{\CurrentOption}{jmlr}}
```

nohtml

```
1523 \DeclareOptionX{nohtml}{\PassOptionsToClass{\CurrentOption}{jmlr}}
```

lrprefaceheader

```
1524 \newcommand*{\jmlrprefaceheader}{%
1525   \phantomsection
1526   \chapter*{\prefacename}%
1527   \addcontentsline{toc}{chapter}{\prefacename}%
1528   \markboth{\prefacename}{\prefacename}%
1529 }
```

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

wcp

```
1530 \DeclareOptionX{wcp}{%
1531   \PassOptionsToClass{\CurrentOption}{jmlr}%
1532 }
```

pmlr

```
1533 \DeclareOptionX{pmlr}{%
1534   \PassOptionsToClass{\CurrentOption}{jmlr}%
1535 }
```

nowcp

```
1536 \DeclareOptionX{nowcp}{%
1537   \PassOptionsToClass{\CurrentOption}{jmlr}%
1538 }
```

Pass tablecaptiontop and tablecaptionbottom options to jmlr.

tablecaptiontop

```
1539 \DeclareOptionX{tablecaptiontop}{\PassOptionsToClass{\CurrentOption}{jmlr}}
```

tablecaptionbottom

```
1540 \DeclareOptionX{tablecaptionbottom}{\PassOptionsToClass{\CurrentOption}{jmlr}}
```

Pass font size commands to jmlr

10pt

```
1541 \DeclareOptionX{10pt}{\PassOptionsToClass{\CurrentOption}{jmlr}}
```

11pt

```
1542 \DeclareOptionX{11pt}{\PassOptionsToClass{\CurrentOption}{jmlr}}
```

12pt

```
1543 \DeclareOptionX{12pt}{\PassOptionsToClass{\CurrentOption}{jmlr}}
```

Switch on two-side mode by default

```
1544 \@twosidetrue
```

oneside

```
1545 \DeclareOptionX{oneside}{\@twosidefalse \@mparswitchfalse}
```

twoside

```
1546 \DeclareOptionX{twoside}{\@twosidetrue \@mparswitchtrue}
```

pdfxa

```
1547 \define@boolkey{jmlrbook.cls}{jmlr}{pdfxa}[true]{}
1548 \jmlrpdfxafalse
```

Process options

```
1549 \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.

```
1550 \@ifundefined{jmlrgrayscale}{}%
1551 {%
1552   \ifnum\jmlrgrayscale=0\relax
1553     \grayscalefalse
1554   \else
1555     \grayscaletrue
1556   \fi
1557 }
```


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

```

1558 \ifgrayscale
1559   \newcommand*{\jmlrwritepdfinfo}{%
1560     \protected@write\auxout{}\string\jmlrbook@info{\xmpAuthor}{\xmpTitle}}%
1561   }
1562   \ifjmlrpdfxa
1563     \def\convertDate{\getYear}
1564     {\catcode'\D=12
1565     \gdef\getYear D:#1#2#3#4{\edef\xYear{#1#2#3#4}\getMonth}
1566     }
1567     \def\getMonth#1#2{\edef\xMonth{#1#2}\getDay}
1568     \def\getDay#1#2{\edef\xDay{#1#2}\getHour}
1569     \def\getHour#1#2{\edef\xHour{#1#2}\getMin}
1570     \def\getMin#1#2{\edef\xMin{#1#2}\getSec}
1571     \def\getSec#1#2{\edef\xSec{#1#2}\getTZ}
1572     {%
1573       \catcode'\Z=12
1574       \gdef\tmpz{Z}
1575     }
1576     \def\hash{\expandafter\@gobble\string\#}%
1577     \def\amp{\expandafter\@gobble\string\&%
1578     \def\xmpAmp{\amp\hash x0026;}%
1579     \def\sep{</rdf:li><rdf:li>}
1580     \def\TextCopyright{\amp\hash x00A9;}
1581     \def\Title#1{\gdef\xmpTitle{#1}}
1582     \def\Author#1{\gdef\xmpAuthor{#1}}
1583     \def\Keywords#1{\gdef\xmpKeywords{#1}}
1584     \let\xmpKeywords\@empty
1585     \let\xmpSubject\xmpKeywords
1586     \def\Creator#1{\gdef\xmpCreator{#1}}
1587     \def\xmpCreator{\@pdfcreator}
1588     \def\Producer#1{\gdef\xmpProducer{#1}}
1589     \def\xmpProducer{pdfTeX}
1590     \def\Volume#1{\gdef\xmpVolume{#1}}
1591     \let\xmpVolume\@empty
1592     \def\Issue#1{\gdef\xmpIssue{#1}}
1593     \let\xmpIssue\@empty
1594     \def\CoverDisplayDate#1{\gdef\xmpCoverDisplayDate{#1}}
1595     \let\xmpCoverDisplayDate\@empty
1596     \def\CoverDate#1{\gdef\xmpCoverDate{#1}}
1597     \let\xmpCoverDate\@empty
1598     \def\Copyright#1{\gdef\xmpCopyright{#1}}
1599     \let\xmpCopyright\@empty
1600     \def\Doi#1{\gdef\xmpDoi{#1}}
1601     \let\xmpDoi\@empty
1602     \def\Lastpage#1{\gdef\xmpLastpage{#1}}
1603     \let\xmpLastpage\@empty
1604     \def\Firstpage#1{\gdef\xmpFirstpage{#1}}

```

```

1605 \let\xmpFirstpage\@empty
1606 \def\Journaltitle#1{\gdef\xmpJournaltitle{#1}}
1607 \let\xmpJournaltitle\@empty
1608 \def\Journalnumber#1{\gdef\xmpJournalnumber{#1}}
1609 \let\xmpJournalnumber\@empty
1610 \def\Org#1{\gdef\xmpOrg{#1}}
1611 \let\xmpOrg\@empty
1612 \def\CreatorTool#1{\gdef\xmpCreatorTool{#1}}
1613 \def\xmpCreatorTool{\xmpProducer}
1614 \def\AuthoritativeDomain#1{\gdef\xmpAuthoritativeDomain{#1}}
1615 \let\xmpAuthoritativeDomain\@empty
1616 \def\findUUID#1{\edef\tmpstring{\pdfmdfivesum{#1}}
1617 \expandafter\eightofnine\tmpstring\end}
1618 \def\eightofnine#1#2#3#4#5#6#7#8#9\end{%
1619 \xdef\eightchars{#1#2#3#4#5#6#7#8}
1620 \fouroffive#9\end}
1621 \def\fouroffive#1#2#3#4#5\end{\xdef\ffourchars{#1#2#3#4}
1622 \sfouroffive#5\end}
1623 \def\sfouroffive#1#2#3#4#5\end{\xdef\sfourchars{#1#2#3#4}
1624 \tfouroffive#5\end}
1625 \def\tfouroffive#1#2#3#4#5\end{\xdef\tfourchars{#1#2#3#4}
1626 \xdef\laststring{#5}}
1627 \def\uuid{\eightchars-%
1628 \ffourchars-%
1629 \sfourchars-%
1630 \tfourchars-%
1631 \laststring}

```

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

```

1632 \def\getTZh#1{%
1633 \def\TZprefix{#1}%
1634 \ifx\TZprefix\tmpz
1635 \def\xTZsign{+}%
1636 \def\xTZh{00}%
1637 \def\xTZm{00}%
1638 \let\getTZnext\doConvDate
1639 \else
1640 \let\xTZsign\TZprefix
1641 \let\getTZnext\getTZhm
1642 \fi
1643 \getTZnext
1644 }

```

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

```

1645 \def\getTZhm#1#2'#3#4'{%
1646 \edef\xTZh{#1#2}%
1647 \edef\xTZm{#3#4}%
1648 \doConvDate
1649 }

```

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

```

1650 \def\doConvDate{%
1651     \edef\convDate{\xYear-\xMonth-\xDay
1652         T\xHour:\xMin:\xSec\xTZsign\xTZh:\xTZm}%
1653 }

```

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

```

1654 \newcommand{\@pre@hyperref}{%
1655     \IfFileExists{FOGRA39L.icc}%
1656     {%
1657         \pdfminorversion=3
1658         \pdfpageattr{/MediaBox[0 0 595 793]
1659             /BleedBox[0 0 595 793]
1660             /TrimBox[25 20 570 773]}%
1661         \findUUID{\jobname.pdf}%
1662         \edef\xmpdocid{\uuid}%
1663         \findUUID{\pdfcreationdate}%
1664         \edef\xmpinstid{\uuid}%
1665         \InputIfFileExists{\jobname.xmpdata}{\}{}%
1666         \RequirePackage{xmpincl}%
1667         \expandafter\convertDate\pdfcreationdate
1668         \def\@pctchar{\expandafter\@gobble\string\}%
1669         \def\@bchar{\expandafter\@gobble\string\}%
1670         \immediate\pdfobj stream attr{/N 4} file{FOGRA39L.icc}
1671         \edef\OBJ@CVR{\the\pdflastobj}
1672         \pdfcatalog{/OutputIntents [ <<
1673             /Type/OutputIntent
1674             /S/GTS_PDFX
1675             /OutputCondition (FOGRA39)
1676             /OutputConditionIdentifier (FOGRA39 \@bchar(ISO Coated v2
1677                 300\@pctchar\space \@bchar(ECI\@bchar)\@bchar))
1678             /DestOutputProfile \OBJ@CVR\space 0 R
1679             /RegistryName(http://www.color.org)
1680             >> ]}
1681         \input glyphtounicode.tex
1682         \input glyphtounicode-cmr.tex
1683         \pdfgentounicode=1
1684         \RequirePackage[draft,pdftex,pdfpagemode=UseNone,bookmarks=false]{hyperref}%
1685     }%
1686     {%
1687         \ClassError{jmlrbook}{Can't find 'FOGRA39L.icc'}%
1688         {Download ISOcoated\string_v2\string_330\string_bas.icc from
1689             http://www.colormangement.org/en/isoprofile.html
1690             Rename it FOGRA39L.icc and put it in the pdfx folder}%
1691     }%
1692 }
1693 \renewcommand*{\jmlrwritepdfinfo}{%
1694     \begingroup
1695     \let\&=\xmpAmp

```

```

1696      \IfFileExists{pdfx-1a.xmp}{%
1697          \pdfcompresslevel=0
1698          \immediate\pdfobj stream attr {/Type /Metadata /Subtype /XML}
1699          file{pdfx-1a.xmpi}
1700          \pdfcatalog{/Metadata \the\pdflastobj\space 0 R}
1701      }%
1702      {}%
1703  \endgroup
1704  \protected@write\auxout{}{\string\jmlrbook@info{\xmpAuthor}{\xmpTitle}}}%
1705  \pdfinfo{
1706      /Author(\xmpAuthor)%
1707      /Title(\xmpTitle)%
1708      /Creator(\xmpProducer)%
1709      /CreationDate(\convDate)%
1710      /ModDate(\convDate)%
1711      /Producer(\xmpProducer)%
1712      /Trapped /False
1713      /GTS_PDFXVersion (PDF/X-1:2001)%
1714      /GTS_PDFXConformance (PDF/X-1a:2001)%
1715  }%
1716  }

1717  \fi
1718  \else
1719      \newcommand*{\jmlrwritepdfinfo}{}
1720  \fi

```

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

```
1721 \newcommand*{\jmlrbook@info}[2] {}
```

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

```
1722 \newcommand*{\jmlrbook@location}[1] {}
```

\@post@hyperref

```

1723 \newcommand*{\@post@hyperref}{%
1724     \let\@org@c@lenddoca\c@lenddoca
1725     \let\c@lenddoca\undefined
1726 }

```

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

```

1727 \let\@org@LoadClass\LoadClass
1728 \def\LoadClass#1{\let\LoadClass\@org@LoadClass\@org@LoadClass{jmlr}}
1729 \@org@LoadClass{combine}
1730 \let\c@lenddoca\@org@c@lenddoca

```

Requires combnat to work with natbib:

```
1731 \RequirePackage{combnat}
```

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

```

1732 \renewcommand\c@laNAT@parse[1]{%
1733     \let\protect=\@unexpandable@protect\let~\relax
1734     \let\active@prefix=\@gobble
1735     \xdef\NAT@temp{\csname b@#1\@extra@b@citeb\endcsname}}%
1736     \expandafter\NAT@split\NAT@temp?????@%
1737     \expandafter\NAT@parse@date\NAT@date?????@%
1738     \ifciteindex\NAT@index\fi}
1739
1740 \renewcommand\c@lbNAT@parse[1]{%
1741     \let\protect=\@unexpandable@protect\let~\relax
1742     \let\active@prefix=\@gobble
1743     \xdef\NAT@temp{\csname B?\jobname?@#1\@extra@b@citeb\endcsname}}%
1744     \expandafter\NAT@split\NAT@temp?????@%
1745     \expandafter\NAT@parse@date\NAT@date?????@%
1746     \ifciteindex\NAT@index\fi}

```

Start new chapters on the right hand page:

```

1747 \newif\if@openright
1748 \@openrighttrue
1749 \newif\if@mainmatter

```

Define commands that affect the formatting:

`\pagerule` Draw line across the text block.

```

1750 \newcommand*{\pagerule}[1][0pt]{\par\noindent
1751     \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.

```

1752 \ifjmlrhtml
1753     \newenvironment{preface}[1][preface]%
1754     {%
1755         \noindent\HCode{<h2>\prefacename</h2>}%
1756     }%
1757     {%
1758     }
1759 \else
1760     \newenvironment{preface}[1][preface]%
1761     {%
1762         \jmlrprefaceheader
1763         \protected@write\@mainauxout
1764             {\string\@prefacestart{\thepage}{\arabic{page}}}%
1765         \protected@write\@mainauxout{\string\@prefacefile{jmlrprefacepath}{#1}}%
1766     }%
1767     {%
1768         \protected@write\@mainauxout{\string\@prefaceend{\thepage}}%
1769     }
1770 \fi

```

```

\prefacename
1771 \newcommand*{\prefacename}{Preface}

\@prefacefile
1772 \newcommand*{\@prefacefile}[2]{}

\@prefacestart
1773 \newcommand*{\@prefacestart}[2]{}

\@prefaceend
1774 \newcommand*{\@prefaceend}[1]{}

\@prefaceeditor
1775 \newcommand*{\@prefaceeditor}[1]{}

Cross-reference chapters:
1776 \newcommand*{\chapterrefname}{Chapter}
1777 \newcommand*{\chaptersrefname}{Chapters}

\chapterref
1778 \newcommand*{\chapterref}[1]{%
1779   \objectref{#1}{\chapterrefname}{\chaptersrefname}{}}{}

Cross-referencing imported articles:

\articlepageref  Page number of start of article
1780 \newcommand*{\articlepageref}[1]{%
1781   \pageref{#1jmlrstart}%
1782 }

articlepagesref  Page range of article
1783 \newcommand*{\articlepagesref}[1]{%
1784   \pageref{#1jmlrstart}--\pageref{#1jmlrend}%
1785 }

articlepagesref  Page range of article for use within the article
1786 \newcommand*{\@articlepagesref}{%
1787   \pageref{jmlrstart}--\pageref{jmlrend}%
1788 }

articletitleref  Reference the short title of an imported article
1789 \newcommand*{\articletitleref}[1]{\nameref{#1jmlrstart}}

articleauthorref  Reference the authors of an imported article
1790 \newcommand*{\articleauthorref}[1]{%
1791   \@ifundefined{jmlr@author@#1}{%
1792     {%
1793       \ClassWarning{jmlrbook}{Label ‘#1’ undefined}%

```

```

1794 }%
1795 {%
1796   \@nameuse{@jmlr@author@#1}%
1797 }%
1798 }

```

\jmlrttitlehook Extra title information

```

1799 \renewcommand*\jmlrttitlehook{%
1800   \hypersetup{pdftitle={\@shorttitle}}%
1801   \def\xmpTitle{\@shorttitle}%
1802   \let\jmlrttitlehook\relax
1803 }
1804 \providecommand*\xmpTitle{\@title}%

```

\jmlrauthorhook

```

1805 \renewcommand*\jmlrauthorhook{%
1806   \ifx@sauthor\@empty
1807     \hypersetup{pdfauthor={\@author}}%
1808   \else
1809     \hypersetup{pdfauthor={\@sauthor}}%
1810   \fi
1811   \def\xmpAuthor{\@sauthor}%
1812   \let\jmlrauthorhook\relax
1813   \let\@shortauthor\@empty
1814 }
1815 \providecommand*\xmpAuthor{\@author}%

```

\subtitle

```

1816 \newcommand*\@subtitle{}
1817 \newcommand*\@subtitle[1]{\renewcommand*\@subtitle{#1}}

```

\volume

```

1818 \newcommand*\@volume{\@jmlrvolume}
1819 \newcommand*\@volume[1]{%
1820   \renewcommand*\@volume{#1}%
1821   \ifjmlrpdfxa
1822     \let\xmpVolume\@volume
1823   \fi
1824 }

```

\jmlrissue

```

1825 \newcommand*\@issue{\@jmlrissue}
1826 \newcommand*\@issue[1]{%
1827   \renewcommand*\@issue{#1}%
1828   \ifjmlrpdfxa
1829     \let\xmpIssue\@issue
1830   \fi
1831 }

```

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

```
1832 \newcommand*{\thejmlrworkshop}{\@jmlrworkshop}
```

\team

```
1833 \newcommand*{\@team}{}%
```

```
1834 \newcommand*{\team}[1]{\renewcommand*{\@team}{#1}}%
```

\jmlrlocation

```
1835 \newcommand*{\@jmlrlocation}{}%
```

```
1836 \newcommand*{\jmlrlocation}[1]{%
```

```
1837 \renewcommand*{\@jmlrlocation}{#1}}%
```

```
1838 \protected@write\@auxout{}{\string\jmlrbook@location{#1}}%
```

```
1839 }
```

ctioneditorname

```
1840 \newcommand*{\@productioneditorname}{Production Editor}
```

roductioneditor

```
1841 \newcommand*{\@productioneditor}{}%
```

```
1842 \newcommand*{\productioneditor}[1]{%
```

```
1843 \renewcommand*{\@productioneditor}{#1}}%
```

```
1844 \renewcommand*{\@productioneditorname}{Production Editor}}%
```

```
1845 }
```

oductioneditors

```
1846 \newcommand*{\productioneditors}[1]{%
```

```
1847 \renewcommand*{\@productioneditor}{#1}}%
```

```
1848 \renewcommand*{\@productioneditorname}{Production Editors}}%
```

```
1849 }
```

\logo Title page image

```
1850 \newcommand*{\@logo}{}%
```

```
1851 \newcommand*{\logo}[2][ ]{%
```

```
1852 \ifjmlrhtml
```

```
1853 \def\@logo@tmp{#1}}%
```

```
1854 \ifx\@logo@tmp\@empty
```

```
1855 \renewcommand*{\@logo}{#2}}%
```

```
1856 \else
```

```
1857 \renewcommand*{\@logo}{\HCode{<a href="#1">}#2\HCode{</a>}}%
```

```
1858 \fi
```

```
1859 \else
```

```
1860 \renewcommand*{\@logo}{#2}}%
```

```
1861 \fi
```

```
1862 }
```

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

```
1863 \renewcommand*{\booklinebreak}[1][4]{\linebreak[#1]}
```


Set article title

```
1864 \def\c@lbmaketitle{\jmlrmaketitle}
```

The book's title:

\maintitle

```
1865 \newcommand*{\maintitle}{}
```

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

SetTitleElement

```
1866 \newcommand*{\SetTitleElement}[3]{%
1867   {%
1868     \expandafter\ifx\csname @#1\endcsname\@empty
1869     \else
1870       #2\csname @#1\endcsname#3%
1871     \fi
1872   }%
1873 }
```

\IfTitleElement Determine if the given element has been set:

```
1874 \newcommand{\IfTitleElement}[3]{%
1875   \expandafter\ifx\csname @#1\endcsname\@empty
1876   #2%
1877   \else
1878   #3%
1879   \fi
1880 }
```

\titlebody

```
1881 \newcommand{\titlebody}{%
1882   \SetTitleElement{title}{\maintitlefont}{\postmaintitle}%
1883   \SetTitleElement{volume}{\mainvolume font}{\postmainvolume}%
1884   \SetTitleElement{subtitle}{\mainsubtitlefont}{\postmainsubtitle}%
1885   \SetTitleElement{logo}{\mainlogo font}{\postmainlogo}%
1886   \SetTitleElement{team}{\mainteamfont}{\postmainteam}%
1887   \SetTitleElement{author}{\mainauthorfont}{\postmainauthor}%
1888   \SetTitleElement{productioneditor}{\mainproductioneditorfont}%
1889   {\postmainproductioneditor}%
1890 }
```

\c@lamaketitle

```
1891 \ifjmlrhtml
1892   \renewcommand{\c@lamaketitle}{%
1893     \HCode{<table cellpadding="2" cellspacing="2" border="0" width="100\%">%
1894     \HCode{<tbody><tr><td valign="top">}%
1895     \HCode{<h1>}%
1896     \@title\newline
1897     \ifx\@jmlrvolume\@empty
1898     \ifx\@volume\@empty
```

```

1899     \else
1900         Volume \@volume
1901         \ifx\@subtitle\@empty\else: \fi
1902     \fi
1903 \else
1904     Volume \@jmlrvolume
1905     \ifx\@subtitle\@empty\else: \fi
1906 \fi
1907 \@subtitle
1908 \HCode{</h1>}%
1909 \newline
1910 \textbf{Editors: \@author}
1911 \HCode{</td><td valign="top">}%
1912 \@logo
1913 \HCode{</td></tr></tbody></table>}%
1914 \let\maintitle\@title
1915 }
1916 \else
1917 \renewcommand{\c@lamaketitle}{%
1918 \pagenumbering{alph}%
1919 \pagestyle{empty}%
1920 \begin{titlepage}%
1921     \let\footnotesize\small
1922     \let\footnoterule\relax
1923     \let\footnote\thanks
1924     \titlebody
1925     \par
1926     \@thanks
1927 \end{titlepage}%
1928 \setcounter{footnote}{0}%
1929 \let\maintitle\@title
1930 \c@lmtitleempty
1931 }
1932 \fi

```

\maintitlefont

```

1933 \renewcommand{\maintitlefont}{%
1934 \null\vskip15pt\relax\par
1935 \flushleft\Huge\bfseries\noindent}

```

\postmaintitle

```

1936 \renewcommand{\postmaintitle}{%
1937 \par\relax
1938 }

```

\mainvolumefont

```

1939 \newcommand{\mainvolumefont}{%
1940 \flushleft\noindent\LARGE\bfseries Volume
1941 }

```

```

\postmainvolume
1942 \newcommand{\postmainvolume}{%
1943   \IfTitleElement{subtitle}{}{:}\par\relax
1944 }

\mainissuefont
1945 \newcommand{\mainissuefont}{%
1946   \flushleft\noindent\LARGE\bfseries Issue
1947 }

\postmainissue
1948 \newcommand{\postmainissue}{%
1949   \par\relax
1950 }

\mainsubtitlefont
1951 \newcommand{\mainsubtitlefont}{%
1952   \flushleft\LARGE\bfseries\noindent}

\postmainsubtitle
1953 \newcommand{\postmainsubtitle}{\par}

\mainlogofont
1954 \newcommand{\mainlogofont}{%
1955   \vfill
1956   \begin{center}}

\postmainlogo
1957 \newcommand{\postmainlogo}{\end{center}\vfill\par}

\mainteamfont
1958 \newcommand{\mainteamfont}{\flushleft\bfseries\Large\noindent}

\postmainteam
1959 \newcommand{\postmainteam}{\par}

\mainauthorfont
1960 \renewcommand{\mainauthorfont}{%
1961   \flushleft\Large\itshape\doublespacing\noindent}

\postmainauthor
1962 \renewcommand{\postmainauthor}{%
1963 \par}

\productioneditorfont
1964 \newcommand{\mainproductioneditorfont}{%
1965   \flushleft\Large\noindent \@productioneditorname: \itshape}

```

roductioneditor

```
1966 \newcommand{\postmainproductioneditor}{\par}
```

\maindatefont

```
1967 \renewcommand{\maindatefont}{{}}
```

\postmaindate

```
1968 \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.

```
1969 \ifjmlrhtml
```

```
1970 \newenvironment{signoff}[2][The Editorial Team]{%
```

```
1971 \def\Editor##1{##1\par\vskip\baselineskip\noindent\ignorespaces}%
```

```
1972 \def\@editorialteam{#1}%
```

```
1973 \def\@signoffdate{#2}%
```

```
1974 \par\vskip\baselineskip\noindent
```

```
1975 \ifx\@signoffdate\@empty
```

```
1976 \else
```

```
1977 \emph{\@signoffdate}\nopagebreak\par
```

```
1978 \nopagebreak\vskip\baselineskip\noindent
```

```
1979 \fi
```

```
1980 \ifx\@editorialteam\@empty
```

```
1981 \else
```

```
1982 \@editorialteam:\nopagebreak\par\nopagebreak\vskip\baselineskip
```

```
1983 \fi
```

```
1984 \nopagebreak\noindent\ignorespaces
```

```
1985 }%
```

```
1986 {%
```

```
1987 }%
```

```
1988 \else
```

```
1989 \newenvironment{signoff}[2][The Editorial Team]{%
```

```
1990 \def\Editor##1{%
```

```
1991 \protected@write\@mainauxout{}\string\@prefaceeditor{##1}}%
```

```
1992 \begin{tabular}{@{}l@{}}%
```

```
1993 ##1%
```

```
1994 \end{tabular}%
```

```
1995 \par\vskip\baselineskip\noindent\ignorespaces
```

```
1996 }%
```

```
1997 \def\@editorialteam{#1}%
```

```
1998 \def\@signoffdate{#2}%
```

```
1999 \par\vskip\baselineskip\noindent
```

```
2000 \ifx\@signoffdate\@empty
```

```
2001 \else
```

```
2002 \emph{\@signoffdate}\par
```

```
2003 \vskip\baselineskip\noindent
```

```
2004 \fi
```

```
2005 \ifx\@editorialteam\@empty
```

```
2006 \else
```

```

2007      \@editorialteam:\nopagebreak\par\vskip\baselineskip
2008      \fi
2009      \nopagebreak\noindent\ignorespaces
2010  }%
2011  {%
2012  }
2013 \fi

```

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

```

2014 \newenvironment{authorsignoff}{%
2015   \def\Author##1{\begin{tabular}{@{}p{\linewidth}@{}}%
2016     ##1%
2017   \end{tabular}}%
2018   \par\vskip\baselineskip\noindent\ignorespaces
2019 }%
2020 \par\vskip\baselineskip\noindent\ignorespaces
2021 }{%
2022 }

```

zeroextracounters Reset counters at the start of each imported article

```

2023 \renewcommand{\zeroextracounters}{%
2024   \@ifundefined{c@theorem}{}{\setcounter{theorem}{0}}%
2025   \@ifundefined{c@algorithm}{}{\setcounter{algorithm}{0}}%
2026   \@ifundefined{c@algocf}{}{\setcounter{algocf}{0}}%
2027   \@ifundefined{c@example}{}{\setcounter{example}{0}}%
2028   \@ifundefined{c@definition}{}{\setcounter{definition}{0}}%
2029 }

```

\contentsname Redefine title of the table of contents

```

2030 \renewcommand*{\contentsname}{Table of Contents}

```

\theHalgorithm

```

2031 \def\theHalgorithm{\theHchapter.\thealgorithm}

```

\theHsection

```

2032 \def\theHsection{\theHchapter.\thesection}
2033 \def\theHsubsection{\theHchapter.\thesubsection}
2034 \def\theHsubsubsection{\theHchapter.\thesubsubsection}
2035 \def\theHparagraph{\theHchapter.\theparagraph}

```

\theHsubfigure

```

2036 \def\theHsubfigure{\theHfigure.\arabic{subfigure}}
2037 \def\theHsubtable{\theHtable.\arabic{subtable}}

```

\theHfootnote

```

2038 \def\theHfootnote{\theHchapter.\alpha{footnote}}

```

```

\theHtable
2039 \def\theHtable{\theHchapter.\arabic{table}}

\theHfigure
2040 \def\theHfigure{\theHchapter.\arabic{figure}}

\theHalgocf
2041 \def\theHalgocf{\theHchapter.\thealgocf}

\mailto
2042 \renewcommand*{\mailto}[1]{%
2043   \href{mailto:#1}{\nolinkurl{#1}}}%
2044 }

2045 \c@lhaschapterfalse
2046 \let\c@lthesec\thesection

    Make sure the hyperlinks work

portchapterHref
2047 \newcommand\doimportchapterHref{%
2048   \edef\@currentHref{chapter.\thechapter}%
2049 }

clevel@appendix  Set the toc level for the main appendices
2050 \def\toclevel@appendix{-1}

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

\Xprefix
2051 \def\Xprefix{}

\Xref
2052 \DeclareRobustCommand\Xref{\@ifstar\@Xrefstar\T@Xref}%

\Xpageref
2053 \DeclareRobustCommand\Xpageref{%
2054   \@ifstar\@Xpagerefstar\T@Xpageref
2055 }%

Ref@StarSetXRef
2056 \def\HyRef@StarSetXRef#1{%
2057   \begingroup
2058     \Hy@safe@activestrue
2059     \edef\x{#1}%
2060     \@onelevel@sanitize\x
2061     \edef\x{\endgroup
2062       \noexpand\HyRef@@StarSetRef
2063       \expandafter\noexpand\csname r@\Xprefix\x\endcsname{x}}%

```

```

2064 }%
2065 \x
2066 }
2067 % \end{macocode}
2068 %\end{macro}
2069 %
2070 %\begin{macro}{\@Xrefstar}
2071 % \begin{macrocode}
2072 \def\@Xrefstar#1{%
2073 \HyRef@StarSetXRef{#1}\@firstoffive
2074 }

```

\@Xpagerefstar

```

2075 \def\@Xpagerefstar#1{%
2076 \HyRef@StarSetXRef{#1}\@secondoffive
2077 }

```

\T@Xref

```

2078 \def\T@Xref#1{%
2079 \Hy@safe@activestru
2080 \expandafter\@setXref\csname r@\Xprefix#1\endcsname\@firstoffive{#1}%
2081 \Hy@safe@activesfalse
2082 }%

```

\T@Xpageref

```

2083 \def\T@Xpageref#1{%
2084 \Hy@safe@activestru
2085 \expandafter\@setXref\csname r@\Xprefix#1\endcsname\@secondoffive{#1}%
2086 \Hy@safe@activesfalse
2087 }%

```

\Xlabel

```

2088 \def\Xlabel#1{%
2089 \@bsphack
2090 \begingroup
2091 \@onelevel@sanitize\@currentlabelname
2092 \edef\@currentlabelname{%
2093 \expandafter\strip@period\@currentlabelname\relax.\relax\@@@
2094 }%
2095 \protected@write\@mainauxout{}\@currentlabelname{\string\newlabel{\Xprefix#1}{\@currentlabel}{\thepage}%
2096 {\@currentlabelname}{\@currentHref}{}}%
2097 }%
2098 \endgroup
2099 \@esphack
2100 }
2101 }
2102 \let\ltx@label\Xlabel

```

\@setXref

```

2103 \def\@setXref#1#2#3{% csname, extract group, refname
2104   \ifx#1\relax
2105     \protect\G@refundefinedtrue
2106     \nfss@text{\reset@font\bfseries ??}%
2107     \@latex@warning{%
2108       Reference ‘#3’ on page \thepage \space undefined%
2109     }%
2110   \else
2111     \expandafter\Hy@setref@link#1\@empty\@empty\@nil{#2}%
2112   \fi
2113 }

```

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

```

2114 \AtBeginDocument{%
2115   \renewcommand\@secondoffive[5]{#2}%
2116   \jmlrwritepdfinfo
2117   \let\jmlrwritepdfinfo\relax
2118 }

```

Need to write imported chapter label to main auxfile.

@setimportlabel

```

2119 \def\@setimportlabel{%
2120   \let\@mainauxout\@auxout
2121   \let\HRLabel\label
2122 }
2123 \AtBeginDocument{\@jmlrbeginindoc}

```

\@jmlrbeginindoc

```

2124 \newcommand*\@jmlrbeginindoc{
2125   \@setimportlabel
2126   \gdef\@setimportlabel{\let\ref\Xref \let\pageref\Xpageref}%
2127   \let\ReadBookmarks\relax
2128   \@ifundefined{@beginmainauxhook}{}{\@beginmainauxhook}%
2129 }

```

Imported papers modify \InputIfFileExists so save original definition.

```

2130 \let\@org@InputIfFileExists\InputIfFileExists

```

jmlrpapers

```

2131 \newenvironment{jmlrpapers}{%
2132 \def\@begindocumenthook{%
2133   \@jmlrbeginindoc
2134   \let\bibcite\c@lbNATbibcite
2135 }

```



```

2136 \def\@enddocumenthook{%
2137   \@jmlrenddoc
2138   \let\bibcite\c@lbNAT@testdef
2139 }
2140 \begin{papers}[]

2141   \if@twocolumn
2142     \def\@jmlr@restore{\twocolumn}%
2143   \else
2144     \def\@jmlr@restore{\onecolumn}%
2145   \fi
2146   \jmlrarticlecommands
2147   \let\importpubpaper\@importpubpaper
2148   \let\importpaper\@importpaper
2149   \let\importarticle\@importarticle
2150   \let\label\Xlabel
2151   \let\ref\Xref
2152   \pagestyle{article}%
2153 }{%
2154   \@jmlr@restore
2155   \end{papers}
2156 }

```

dtomaincontents

```

2157 \newcommand{\addtomaincontents}[2]{%
2158   \protected@write\@mainauxout{\let\label\@gobble\let\index\@gobble
2159     \let\glossary\@gobble}{\string\@writefile{#1}{#2}}%
2160 }

```

\@write@author

```

2161 \newcommand*\@write@author}[2]{%
2162   \def\@jmlr@authors@sep{ and }%
2163   \protected@write\@mainauxout{}{%
2164     \string\@new@articleauthor{#1}{#2}%
2165   }%
2166 }

```

w@articleauthor

```

2167 \newcommand*\@new@articleauthor}[2]{%
2168   \expandafter\gdef\csname @jmlr@author@#1\endcsname{%
2169     \hyperref[#1jmlrstart]{#2}}%
2170 }

```

ite@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.

```

2171 \newcommand*\@@write@jmlr@import}[3]{%
2172   \protected@write\@mainauxout{}{\string\@jmlr@import{#1}{#2}{#3}}%
2173 }

```

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

```
2174 \newcommand*\@jmlr@import}[3]{}

@jmlr@apdimport    As above but for files imported in the appendix.
2175 \newcommand*\@@write@jmlr@apdimport}[3]{%
2176   \protected@write\@mainauxout{}\string\@jmlr@apdimport{#1}{#2}{#3}}%
2177 }
```

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

```
2178 \newcommand*\@jmlr@apdimport}[3]{}

ite@jmlr@import    Initialise to \@write@jmlr@import and switch to \@write@jmlr@apdimport in the appendices.
2179 \def\@write@jmlr@import{\@write@jmlr@import}

remaketitlehook    Redefine \jmlrpremaketitlehook
2180 \def\jmlrpremaketitlehook{%
2181   \cleardoublepage
2182   \phantomsection
2183   \let\@currentlabelname\@shorttitle

2184   \refstepcounter{chapter}%
2185 }%

\jmlrimporthook    Hook just before document is imported.
2186 \newcommand*\jmlrimporthook{}
```

`\importpubpaper` Import a document that has already been published. Syntax: `\importpubpaper[<label>]{<dir>}{<file>}{<pages>}` 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.

```
2187 \newcommand*\@importpubpaper}[4][\@importdir\@importfile]{%
2188   \bgroup
2189   \def\@importdir{#2/}%
2190   \def\@importfile{#3}%
2191   \@write@jmlr@import{#1}{#2}{#3}%
2192   \def\@extra@b@citeb{#1}%
2193   \def\@extra@b@info{#1}%
2194   \jmlrpages{#4}%
2195   \graphicspath{\@importdir}%
2196   \def\jmlrmaketitlehook{%

2197     \label{}}%
2198   \def\titlebreak{ }%
2199   \addtomaincontents{toc}%

```

```

2200      {%
2201      \protect\contentsline{papertitle}{\@title}{\thepage}%
2202      {page.\thepage}}%
2203      \pdfbookmark{\@shorttitle}{chapter.\theHchapter}%
2204      \def\@jmlr@authors@sep{ \& }%

2205      \tocchapterpubauthor{\@jmlr@authors}%
2206      {%
2207      \@jmlr@abbrvproceedings
2208      \ifx\@jmlrvolume\@empty
2209      \ifx\@jmlrpages\@empty\else\space\fi
2210      \else
2211      \space\@jmlrvolume
2212      \ifx\@jmlrissue\@empty
2213      \else
2214      (\@jmlrissue)%
2215      \fi
2216      \ifx\@jmlrpages\@empty\else:\fi
2217      \fi
2218      \ifx\@jmlrpages\@empty
2219      \else
2220      \@jmlrpages
2221      \ifx\@jmlryear\@empty\else,\fi
2222      \fi
2223      \space\@jmlryear
2224      }%

2225      \@writeauthor{#1}{\@jmlr@authors}%
2226      }%
2227      \def\InputIfFileExists##1##2##3{%
2228      \IfFileExists{##1}{%
2229      \@org@InputIfFileExists{##1}{##2}{##3}%
2230      }%
2231      {%
2232      \@org@InputIfFileExists{\@importdir##1}{##2}{##3}%
2233      }%
2234      }%
2235      \def\Xprefix{#1}%
2236      \jmlrimporthook
2237      \import{\@importdir\@importfile}%
2238      \def\Xprefix{}%
2239      \egroup
2240      \gdef\@shortauthor{}%
2241      \gdef\@shorttitle{}%
2242      \gdef\@firstauthor{}%
2243      \gdef\@jmlr@authors{\@jmlrauthors}%
2244      \gdef\@jmlrauthors{}%
2245      \gdef\@firstsurname{}%
2246      }
2247      \newcommand{\importpubpaper}[4] [] {%

```

```

2248 \ClassError{jmlrbook}{\string\importpubpaper\space
2249 not permitted outside 'jmlrpapers' environment}{}%
2250 }

```

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

```

2251 \newcommand{\@importpaper}[3][\@importdir\@importfile]{%
2252   \bgroup
2253     \def\@importdir{#2/}%
2254     \def\@importfile{#3}%
2255     \@writejmlrimport{#1}{#2}{#3}%
2256     \def\@extra@b@citeb{#1}%
2257     \def\@extra@b@info{#1}%
2258     \jmlrpages{\protect\@articlepagesref}%
2259     \graphicspath{{\@importdir}}%
2260     \def\jmlrmaketitlehook{%

2261       \label{}}%
2262       \def\titlebreak{ }%
2263       \addtomaincontents{toc}%

2264       {%
2265         \protect\contentsline{papertitle}{\@title}{\thepage}%
2266       {page.\thepage}}%
2267       \pdfbookmark{\@shorttitle}{chapter.\theHchapter}%
2268       \def\@jmlr@authors@sep{ \& }%

2269       \tocchapterpubauthor{\@jmlr@authors}%
2270       {%
2271         \@jmlr@abbrvproceedings
2272         \ifx\@jmlrvolume\@empty
2273           \space
2274         \else
2275           \space\@jmlrvolume
2276           \ifx\@jmlrissue\@empty
2277             \else
2278               (\@jmlrissue)%
2279           \fi
2280           :%
2281         \fi
2282         \protect\articlepagesref{#1}%
2283         \ifx\@jmlryear\@empty\else,\fi
2284         \space\@jmlryear
2285       }%

2286       \@write@author{#1}{\@jmlr@authors}%
2287     }%
2288     \def\InputIfFileExists##1##2##3{%
2289       \IfFileExists{##1}{%
2290         \@org@InputIfFileExists{##1}{##2}{##3}%
2291       }%

```

```

2292      {%
2293      \@org@InputIfFileExists{\@importdir##1}{##2}{##3}%
2294      }%
2295      }%
2296      \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).

```

2297      \let\jmlrvolume\@gobble
2298      \let\jmlryear\@gobble
2299      \let\jmlrworkshop\@gobble
2300      \let\jmlrissue\@gobble
2301      \let\jmlrpages\@gobble
2302      \jmlrimporthook
2303      \import{\@importdir\@importfile}%
2304      \def\Xprefix{}%
2305      \egroup
2306      \gdef\@shortauthor{}%
2307      \gdef\@shorttitle{}%
2308      \gdef\@firstauthor{}%
2309      \gdef\@jmlr@authors{\@jmlrauthors}%
2310      \gdef\@jmlrauthors{}%
2311      \gdef\@firstsurname{}%
2312 }
2313
2314 \newcommand{\importpaper}[3][ ]{%
2315   \ClassError{jmlrbook}{\string\importpaper\space
2316 not permitted outside ‘jmlrpapers’ environment}{}%
2317 }

```

\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.

```

2318 \newcommand{\@importarticle}[3][\@importdir\@importfile]{%
2319   \bgroup
2320     \def\@importdir{#2}/%
2321     \def\@importfile{#3}%
2322     \@write@jmlr@import{#1}{#2}{#3}%
2323     \def\@extra@b@citeb{#1}%
2324     \def\@extra@b@info{#1}%
2325     \def\jmlrmaketitlehook{%
2326     \def\titlebreak{ }%
2327     \addtomaincontents{toc}%
2328     {%
2329     \protect\contentsline{papertitle}{\@title}{\thepage}%
2330     {page.\thepage}}%

```

```

2331 \label{}}%
2332 \pdfbookmark{\@shorttitle}{chapter.\theHchapter}%
2333 \def\@jmlr@authors@sep{ \& }%

2334 \tocchapterauthor{\@jmlr@authors}%
2335 \@writeauthor{#1}{\@jmlr@authors}%
2336 \jmlrpages{}%
2337 \jmlrvolume{}%
2338 \jmlryear{}%
2339 \jmlrsubmitted{}%
2340 \jmlrpublished{}%
2341 \jmlrproceedings{}{ }%
2342 }%
2343 \graphicspath{{\@importdir}}%
2344 \def\InputIfFileExists##1##2##3{%
2345 \IfFileExists{##1}{%
2346 \@org@InputIfFileExists{##1}{##2}{##3}%
2347 }%
2348 {%
2349 \@org@InputIfFileExists{\@importdir##1}{##2}{##3}%
2350 }%
2351 }%
2352 \def\Xprefix{#1}%
2353 \jmlrimporthook

2354 \let\ps@jmlrtps\ps@articlet
2355 \import{\@importdir\@importfile}%
2356 \def\Xprefix{ }%
2357 \egroup
2358 \gdef\@shortauthor{ }%
2359 \gdef\@shorttitle{ }%
2360 \gdef\@firstauthor{ }%
2361 \gdef\@jmlr@authors{\@jmlrauthors}%
2362 \gdef\@jmlrauthors{ }%
2363 \gdef\@firstsurname{ }%
2364 }
2365 \newcommand{\importarticle}[3][ ]{%
2366 \ClassError{jmlrbook}{\string\importarticle\space
2367 not permitted outside ‘jmlrpapers’ environment}{ }%
2368 }

```

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

```

2369 \newcommand{\addtocpart}[1]{%
2370 \cleardoublepage
2371 \refstepcounter{tocpart}%
2372 \addtocontents{toc}{\protect\tocpart{#1}}%
2373 \pdfbookmark[-1]{#1}{part.\thetocpart}%
2374 }
2375 \newcounter{tocpart}

```

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

```
2376 \newcommand{\tocpart}[1]{%
2377     \addpenalty{-\@highpenalty}%
2378     \vskip 1.0ex \@plus\p@
2379     \setlength\@tempdima{2.25em}%
2380     \begingroup
2381         \parindent \z@ \rightskip \@pnumwidth
2382         \parfillskip -\@pnumwidth
2383         \leavevmode \large\bfseries
2384         \advance\leftskip\@tempdima
2385         \hskip -\leftskip
2386         #1\nobreak\hfil \nobreak\hb@xt@\@pnumwidth{\hss \null}\par
2387         \penalty\@highpenalty
2388     \endgroup
2389 }
```

Set up the layout of the chapter headings

```
2390 \setlength{\prechapterskip}{3em}
2391 \setlength{\postchapterskip}{20pt}
```

`ternumberformat`

```
2392 \renewcommand{\chapternumberformat}[1]{%
2393     \Large\bfseries \@chapapp\space#1\par
2394 }
```

`ptertitleformat`

```
2395 \renewcommand{\chaptertitleformat}[1]{%
2396     \Large\bfseries #1}
```

`\chapterformat`

```
2397 \renewcommand*{\chapterformat}{%
2398     \raggedright
2399 }
```

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

`\preparthook`

```
2400 \renewcommand{\preparthook}{\cleardoublepage\null\vfil}
```

`artnumberformat`

```
2401 \renewcommand{\partnumberformat}[1]{%
2402     \Huge\bfseries \@partapp\nobreakspace#1\par\nobreak
2403     \vskip 20\p@
2404 }
```

`\postparthook`

```
2405 \def\postparthook{%
2406     \thispagestyle{empty}%
}
```

```

2407 \vfil\newpage
2408 \null
2409 \thispagestyle{empty}%
2410 \newpage
2411 }

\@curparthead The heading of the current part
2412 \newcommand{\@curparthead}{%

parttitleformat
2413 \renewcommand{\parttitleformat}[1]{#1%
2414 \gdef\@curparthead{\@partapp\space \thepart. #1}%
2415 \mkboth{\@curparthead}{\@curparthead}%
2416 }

\firstpageno Change \firstpageno to do nothing as the page number will be determined by the book.
2417 \renewcommand{\firstpageno}[1]{%

tocchapterauthor Add the author of the current chapter to the table of contents.
2418 \newcommand{\tocchapterauthor}[1]{%
2419 \addtomaincontents{toc}{\protect\contentsline{chapterauthor}{%
2420 #1}{-}{-}}%
2421 }

chapterpubauthor Add the author of an imported prepublished paper to the table of contents. The first argu-
ment is the author (or list of authors). The second argument is the reference to the published
article.
2422 \newcommand{\tocchapterpubauthor}[2]{%
2423 \addtomaincontents{toc}{\protect\contentsline{chapterauthor}{%
2424 #1; #2.}{-}{-}}%
2425 }

Set up the formatting in the TOC
2426 \renewcommand*\@pnumwidth{2em}

\l@part Format for book parts
2427 \renewcommand*\l@part[2]{%
2428 \ifnum \c@tocdepth >\m@ne
2429 \addpenalty{-\@highpenalty}%
2430 \vskip 1.0em \@plus\p@
2431 %\setlength\@tempdima{5em}%
2432 \settowidth\@tempdima{\large\bfseries \@partapp\space MM}%
2433 \vbox{%
2434 \pagerule
2435 \begingroup
2436 \parindent \z@ \rightskip \@pnumwidth
2437 \parfillskip -\@pnumwidth
2438 \leavevmode \large\bfseries

```



```

2439      \advance\leftskip\@tempdima
2440      \hskip -\leftskip
2441      \renewcommand*{\numberline[1]}{\hb@xt@ \@tempdima
2442        {\@partapp\space ##1\hfil }}%
2443      #1\nobreak\hfil \nobreak\hb@xt@\@pnumwidth{\hss
2444        \normalfont\normalsize #2}\par
2445      \penalty\@highpenalty
2446    \endgroup
2447    \pagerule
2448  }%
2449 \fi}

```

\l@chapter

```

2450 \renewcommand{\l@chapter}[2]{%
2451   \ifnum\c@tocdepth>\m@ne
2452     \addpenalty{-\@highpenalty}%
2453     \vskip 1.0em \@plus \p@
2454     \setlength\@tempdima{2em}%
2455     \begingroup
2456       \parindent \z@
2457       \rightskip \@pnumwidth
2458       \parfillskip -\@pnumwidth
2459       \leavevmode \large \bfseries
2460       \advance \leftskip \@tempdima
2461       \hskip -\leftskip
2462       \renewcommand*{\numberline[1]}{\hb@xt@ \@tempdima
2463         {##1\hfil }}%
2464       #1\nobreak \hfil \nobreak \hb@xt@ \@pnumwidth {\hss
2465         \normalfont\normalsize #2}\par
2466       \penalty \@highpenalty
2467     \endgroup
2468   \fi
2469 }

```

\l@papertitle

```

2470 \newcommand*{\l@papertitle}[2]{%
2471   \ifnum \c@tocdepth >\m@ne
2472     \addpenalty{-\@highpenalty}%
2473     \vskip 1.0em \@plus \p@
2474     \setlength\@tempdima{3em}%
2475     \begingroup
2476       \leavevmode \raggedright\itshape
2477       #1\nobreak\hfill \nobreak\hb@xt@\@pnumwidth{\hss
2478         \normalfont#2}%
2479       \par
2480       \penalty\@highpenalty
2481     \endgroup
2482   \fi
2483 }

```

`\l@chapterauthor`

```
2484 \newcommand*\l@chapterauthor[2]{%
2485   \ifnum \c@tocdepth >\m@ne

2486   \begingroup
2487     \parindent \z@
2488     \rightskip \@pnumwidth
2489     \parfillskip -\@pnumwidth
2490     \leavevmode \raggedright
2491     \parbox{\linewidth-\@pnumwidth}{\raggedright#1\par}%
2492     \par
2493   \endgroup
2494 \fi}
```

`\l@section`

```
2495 \renewcommand*\l@section[2]{%
2496   \ifnum \c@tocdepth >\m@ne
2497     \addpenalty{-\@highpenalty}%
2498     \vskip 1.0em \@plus\p@
2499     \setlength\@tempdima{3em}%
2500     \begingroup
2501       \parindent \z@ \rightskip \@pnumwidth
2502       \parfillskip -\@pnumwidth
2503       \leavevmode \normalsize\mdseries
2504       \advance\leftskip\@tempdima
2505       \hskip -\leftskip
2506       #1\nobreak\hfil \nobreak\hb@xt@\@pnumwidth{\hss #2}\par
2507       \penalty\@highpenalty
2508     \endgroup
2509 \fi}
```

`\l@subsection`

```
2510 \renewcommand*\l@subsection[2]{%
2511   \ifnum \c@tocdepth >\m@ne
2512     \addpenalty{-\@highpenalty}%
2513     \vskip 1.0em \@plus\p@
2514     \setlength\@tempdima{3.5em}%
2515     \begingroup
2516       \parindent \z@ \rightskip \@pnumwidth
2517       \parfillskip -\@pnumwidth
2518       \leavevmode \normalsize\mdseries
2519       \advance\leftskip\@tempdima
2520       \hskip -\leftskip
2521       #1\nobreak\hfil \nobreak\hb@xt@\@pnumwidth{\hss #2}\par
2522       \penalty\@highpenalty
2523     \endgroup
2524 \fi}
```

`\chaptermark`

```

2525 \renewcommand*{\chaptermark}[1]{%
2526   \mkboth{\@curparhead}{\protect\thechapter. #1}%
2527 }

```

Set up page styles

\firstpagehead

```

2528 \newcommand{\firstpagehead}{}

```

\firstpagefoot

```

2529 \newcommand{\firstpagefoot}{%
2530   \@reprint\hfill\thepage
2531 }

```

\headfont Set the header font

```

2532 \newcommand*{\headfont}{\reset@font\small\scshape}%

```

\footfont Set the footer font

```

2533 \newcommand*{\footfont}{\reset@font\small\itshape}%

```

\ps@chplain Page style for first page of a chapter

```

2534 \newcommand*{\ps@chplain}{%
2535   \let\mkboth\gobbletwo
2536   \renewcommand*{\@oddhead}{\headfont\firstpagehead}%
2537   \renewcommand*{\@evenhead}{}%
2538   \renewcommand*{\@oddfoot}{\footfont\firstpagefoot}%
2539   \renewcommand*{\@evenfoot}{\footfont\thepage\hfill
2540   }%
2541 }
2542 \let\ps@plain\ps@chplain

```

\ps@article Page style for the imported articles.

```

2543 \newcommand*{\ps@article}{%
2544   \let\mkboth\gobbletwo
2545   \renewcommand*{\@oddhead}{\headfont\hfill\@shorttitle}%
2546   \renewcommand*{\@evenhead}{\headfont\@shortauthor\hfill}%
2547   \renewcommand*{\@oddfoot}{\footfont\hfill\thepage}
2548   \renewcommand*{\@evenfoot}{\footfont\thepage\hfill}
2549 }

```

\ps@articlet Title page style for imported articles (imported using \importarticle)

```

2550 \newcommand*{\ps@articlet}{%
2551   \let\mkboth\gobbletwo
2552   \renewcommand*{\@oddhead}{}%
2553   \renewcommand*{\@evenhead}{}%
2554   \renewcommand*{\@oddfoot}{\footfont\hfill\thepage}
2555   \renewcommand*{\@evenfoot}{\footfont\thepage\hfill}
2556 }

```

\ps@jmlrbook Page style for book

```
2557 \newcommand*{\ps@jmlrbook}{%
2558   \renewcommand*{\@oddfoot}{\footfont\hfill\thepage}
2559   \renewcommand*{\@evenfoot}{\footfont\thepage\hfill}
2560   \def\@evenhead{\headfont\leftmark\hfill}%
2561   \def\@oddhead{\hfill\headfont\rightmark}%
2562   \let\@mkboth\markboth
2563   \renewcommand*{\sectionmark}[1]{}%
2564 }
```

\markleft Provide a command to set just the left header mark.

```
2565 \newcommand*{\markleft}[1]{%
2566   \begingroup
2567     \let\label\relax
2568     \let\index\relax
2569     \let\glossary\relax
2570     \expandafter\@markleft\@themark{#1}%
2571     \@temptokena
2572     \expandafter{\@themark}%
2573     \mark{\the\@temptokena}
2574   \endgroup
2575   \if@nobreak
2576     \ifvmode
2577       \nobreak
2578     \fi
2579   \fi
2580 }
2581 \newcommand*{\@markleft}[3]{%
2582   \@temptokena{#2}%
2583   \unrestored@protected@xdef\@themark{#{3}{\the\@temptokena}}
2584 }
```

morefrontmatter

```
2585 \renewcommand*{\morefrontmatter}{\pagestyle{jmlrbook}%
2586   \def\chaptermark##1{%
2587     \@mkboth{##1\hfill}{\hfill##1}}%
2588 }
```

\moremainmatter

```
2589 \renewcommand*{\moremainmatter}{\pagestyle{jmlrbook}%
2590   \def\chaptermark##1{%
2591     \@mkboth{\@curparthead}{\protect\thechapter. ##1}%
2592   }%
2593 }
```

\bibsection Set the bibliography headings in the articles

```
2594 \renewcommand*\bibsection{\section*{\refname}}
```

Set up the book commands:

2595 \jmlrbookcommands

In the event that authors have used different versions of algorithm2e, define old command names.

```
2596 \providecommand*\SetNoLine{}\SetAlgoNoLine}
2597 \providecommand*\SetVline{}\SetAlgoVlined}
2598 \providecommand*\Setvlineskip{}\SetVlineSkip}
2599 \providecommand*\SetLine{}\SetAlgoLined}
2600 \providecommand*\dontprintsemicolon{}\DontPrintSemicolon}
2601 \providecommand*\printsemicolon{}\PrintSemicolon}
2602 \providecommand*\incmargin{}\IncMargin}
2603 \providecommand*\decmargin}[1]{\DecMargin{#1}}
2604 \providecommand*\setnlskip{}\SetNlSkip}
2605 \providecommand*\Setnlskip{}\SetNlSkip}
2606 \providecommand*\setalcapskip{}\SetAlCapSkip}
2607 \providecommand*\setalcaphskip{}\SetAlCapHSkip}
2608 \providecommand*\nlsty{}\NlSty}
2609 \providecommand*\Setnlsty{}\SetNlSty}
2610 \providecommand*\linesnumbered{}\LinesNumbered}
2611 \providecommand*\linesnotnumbered{}\LinesNotNumbered}
2612 \providecommand*\linesnumberedhidden{}\LinesNumberedHidden}
2613 \providecommand*\showln{}\ShowLn}
2614 \providecommand*\showlnlabel{}\ShowLnLabel}
2615 \providecommand*\nocaptionofalgo{}\NoCaptionOfAlgo}
2616 \providecommand*\restorecaptionofalgo{}\RestoreCaptionOfAlgo}
2617 \providecommand*\restylealgo{}\RestyleAlgo}
2618 \providecommand*\Titleofalgo{}\TitleOfAlgo}
```

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