The \texttt{aipproc} class v1.2 (6 x 9 in version) for \LaTeX\ 2\epsilon

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\textbf{Abstract.} This guide describes the functionality and use of the \texttt{aipproc} class by explaining its extensions and restrictions compared to the \texttt{article} class of standard \LaTeX. It is not a manual to be used on its own but should be used together with an introductory manual on \LaTeX\ such as \cite{6}. This version of the guide covers only the features needed to produce camera ready copy for AIP Conference Proceedings 6in x 9in single column.

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\textbf{GENERAL OVERVIEW}

The \texttt{aipproc} class is a \LaTeX\ 2\epsilon document class for conference proceedings of the American Institute of Physics and other documents with similar layout requirements. It is intended to produce camera-ready copy for direct photo-offset use. The only modification done by the publisher is adding appropriate page numbers.

This version of the guide explains how to use the class when producing camera ready copy for AIP Conference Proceedings 6in x 9in single column format\cite{7}.

The class provides essentially the same markup as \LaTeX\’s standard \texttt{article} class. In addition to this it implements the following:

\begin{itemize}
  \item extended set of front matter commands,
  \item automatic placement of floats into column or page areas including turning of table floats by 90° if necessary,
  \item allows mixing column and page-wide floats without getting the numbering out of sync,
  \item footnotes will appear below bottom floats,
  \item extended set of citation commands if the \texttt{natbib} system is installed,
  \item support for table notes,
  \item support for textual page references like “on the next page”.
\end{itemize}

Due to the extended functionality an article written for \LaTeX\’s standard \texttt{article} class might need adjustments in the following places before it can be used with the \texttt{aipproc} class.

\footnote{1 For a complete description of all class features see the file \texttt{aipguide.pdf}.}
The \texttt{aipproc} class (a more detailed description is given in later sections):

- In the preamble, since the \texttt{aipproc} class requires a \texttt{\layoutstyle} declaration.
- In the front matter, since the \texttt{aipproc} class uses an extended set of title/author declarations.
- In the body of floats, since the \texttt{aipproc} class only allows a single \texttt{\caption} command and processes the body in horizontal mode.

\section*{CHECKING YOUR \LaTeX{} DISTRIBUTION}

To ensure that your installation of \LaTeX{} contains everything necessary to successfully use the \texttt{aipproc} class, run the file \texttt{aipcheck.tex} through \LaTeX{}, e.g.,

\begin{verbatim}
 latex aipcheck
\end{verbatim}

It will try to determine if everything necessary is available and if not, will make recommendations what can be done about it. In certain cases you might be able to use the class if you follow the suggestions, in other cases the only solution is to upgrade your \LaTeX{} installation.

\section*{CLASS DETAILS}

\subsection*{Selecting the target layout}

The class supports different layouts. These are selected by placing a \texttt{\layoutstyle} declaration in the preamble of the document.

\begin{verbatim}
\layoutstyle{layout name}
\end{verbatim}

This command is required. When producing an article for the AIP Conference Proceedings 6in x 9in single column format the declaration should be \texttt{\layoutstyle{6x9}}.

\subsection*{Supported options}

As the class is based on the article class of standard \LaTeX{} all reasonable \texttt{options} of this class are supported automatically. In addition there are a number of options unique to the \texttt{aipproc} class.

\begin{verbatim}
% Paper selection
Two options control the placement of the text on the physical page. Choose the one that corresponds to your printer paper.

\texttt{letterpaper} Directs the class to assume that the output is printed on US letter sized paper (default).
\texttt{4apaper} Directs the class to assume that the output is printed on A4 sized paper.

% Font selection
Four options control the selection of fonts in the document; use at most one of them.

\texttt{mathptm} Directs the class to use PostScript Times and Symbol fonts (a few missing glyphs are taken from Computer Modern) for math by loading the \texttt{mathptm} package. This option is the default. This option does not support the \texttt{\boldmath} command since there exists no PostScript Symbol font in bold. It is possible, however to use \texttt{\mathbf} which allows you to get at least a bold Latin Alphabet.

\texttt{mathtime} Directs the class to use MathTime fonts for math by loading the \texttt{mathtime} package. These fonts are commercial so that this option will not work if you don’t own them. If this option is chosen one can also use the options for this package as global options to the class. The most important ones are

\texttt{uprightgreek} Use upright greek characters instead of slanted ones.
\texttt{mtbold} Use MathTime Bold characters bold glyphs.
\texttt{mtpluscal} Use MathTimePlus calligraphic characters for \texttt{\cal}.
\texttt{mtpluscr} Use MathTimePlus script characters for \texttt{\cal}.
\texttt{lucidascr} Use Lucida calligraphic characters for \texttt{\cal}.
\texttt{lucidascr} Use Lucida script characters for \texttt{\cal}.

\texttt{nomathfonts} Directs the class not to set up math fonts (which means using the installation default which is usually Computer Modern). This option is intended in case a special math font setup is loaded in the document preamble.
\texttt{cmfonts} Directs the class to use standard Computer Modern fonts for math and text. This does not conform to the specification for this class and is in-
tended for draft preparation in environments where the required fonts are unavailable.

Textual references

The next options enable textual references; if this is desired select one of them:

\texttt{varioref} Loads the varioref package (see \cite[p.41ff]{ref}) allowing to produce textual page references. See section on Cross-references on the following page for details.

\texttt{nonvarioref} Disables the \texttt{\ref{textvario}} command so that the strings produced by \texttt{varioref} commands will not depend on the number of references seen so far. Implies the varioref option.

Table note markers

Notes to tables can be influenced as follows:

\texttt{tnotealph} Produce raised lower case alphabetic marks to indicate table notes.

\texttt{tnotesymbol} Use footnote symbols to indicate table notes (default).

Drafts

Finally there is one standard \texttt{article} class option which has its functionality extended:

\texttt{draft} Allows \texttt{\tableofcontents} and similar commands to work without error message (during development of article). It marks overfull boxes and also provides page numbers in the printout.

Remove this option when producing the camera ready copy.

Front matter

The class supports an extended set of front matter commands. These commands differ from those used by standard \LaTeX\’s \texttt{article} class. Thus, if an article already written is adapted to be used with the \texttt{aipproc} class, the front matter has to be modified somewhat.

Some of the commands below are required only for certain proceedings. Declarations that are not required will be silently ignored.

\begin{tabular}{|l|}
\hline
\texttt{\title[short title]{title text}}  \\
\hline
\end{tabular}

In standard \LaTeX\ this command has no optional argument. In the \texttt{aipproc} class one can specify an abbreviated title text which is used, for example, in the running footer in draft mode.

\begin{tabular}{|l|}
\hline
\texttt{\author{author name}{author information}}  \\
\hline
\end{tabular}

In standard \LaTeX\ this command had only one argument containing both author name and address information. In this class it has two arguments and the second argument contains data structured using key/value pairs separated by commas.

For example, the authors of this paper have been specified as:

\begin{verbatim}
\author{F. Mittelbach}{
    address={Zedernweg 62, Mainz},
    email={frank.mittelbach@latex-project.org},
}
\author{D. P. Carlisle}{
    address={Willow House, Souldern},
    email={david@dcarlisle.demon.co.uk},
}
\end{verbatim}

Supported keywords for the AIP Conference Proceedings 6in x 9in single column are address and email, although the latter will not be printed.

\begin{tabular}{|l|}
\hline
\texttt{\begin{abstract}}  \\
\texttt{\maketitle}  \\
\texttt{\date{date}}  \\
\hline
\end{tabular}

In contrast to standard \LaTeX\ the abstract environment has to appear before the \texttt{\maketitle} command.

\texttt{\maketitle}

This command inserts the actual front matter data. It has to follow the above declarations.

\texttt{Multiple authors}

Multiple authors are entered by specifying one \texttt{\author} command per author. Care needs to be taken when specifying shared addresses: they have to be absolutely identical. Depending on the chosen layout the class will merge such addresses but will recognize them only as identical, if the input including spaces is the same!

The \texttt{\and} command as defined in the \texttt{article} class to separate multiple authors is not supported.

\texttt{Dates}

The article class provides the \texttt{\date} command which is not used by \texttt{aipproc} class. If supplied it will be ignored.

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unless the draft option is specified in which case it will show up in a footer line together with the title and the page number to ease document development.

Other front matter commands

The \tableofcontents, \listoffigures, and \listoftables commands are provided but produce (beside output) an error message unless the draft option was selected. This is done since the aipproc class does not support page numbering and thus the above commands essentially produce incorrect data.

Headings

The aipproc class officially supports three heading levels, i.e., \section, \subsection, and \subsubsection.

It also supports the commands \paragraph and \subparagraph although the latter heading levels are not part of the aipproc class specification and are therefore discouraged.

Cross-references

Cross-references to page numbers are not possible with the aipproc class as the page numbers are determined after production. For this reason the \pageref command of \LaTeX is disabled by default.

Since headings in most layouts do not carry numbers they can’t be referenced either.

References to tables, figures, and equations are possible using the \LaTeX commands \label and \ref.

However if the class option varioref or nonvarioref is used, references to page numbers are possible again as they will generate textual references of the form “on the following page” or “on an earlier page” etc. The produced strings are customizable as described in detail in the varioref package documentation or in [4] p.41ff.

The class defaults are as follows and can be changed with \renewcommand in the document preamble. The varioref package normally distinguishes between reference to facing pages and references to pages that need turning over using different strings in these cases. However, since with aipproc class page numbers are not determined at the time of production no assumption can be made that page $x$ and $x+1$ actually fall onto the same double spread. For this reason the defaults used here do not produce strings containing the word “facing” or “opposite”.

\renewcommand\reftextfaceafter
  {on the next page}
\renewcommand\reftextfacebefore
  {on the \reftextvario{previous} page}
\renewcommand\reftextafter
  {on the \reftextvario{next} page}
\renewcommand\reftextbefore
  {on the \reftextvario{previous page}{page before}}
\renewcommand\reftextcurrent
  {on \reftextvario{this}{the current page}}

Normally, text for references which are “far away” are produced using \reftextfaraway in varioref. However, to produce textual references without referring to actual page numbers even in this case, this command was hijacked in the aipproc class and redefined to determine whether or not this is a reference to some earlier or later page. So instead of changing this command the class provides the following two commands for customization:

\renewcommand\reftextearlier
  {\reftextvario{on an earlier page}{earlier on}}
\renewcommand\reftextlater
  {\reftextvario{later on}{further down}}

To illustrate the result of this package all references in this document are made using \vref or \vpageref, e.g., references to Figure 2 further down and Figure 1 on the following page. These commands work best if used only for important references. Be careful when using them several times close to each other as the automatically generated texts then may sound strange (as they do in the example in this paragraph).

\eqref{label}

For reference to equation numbers \eqref can be used instead of the standard \ref command. The \eqref command will automatically add any frills required by the layout style, while \ref will only typeset the plain number. In the AIP Conference Proceedings 6in x 9in single column format it will print “(1)” while \ref would result in “1”.

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Lists

The \texttt{aipproc} class supports all standard list environments like \texttt{itemize}, \texttt{enumerate}, etc.

Graphics support

Support for including and manipulating graphics is provided as the standard \LaTeX\ graphicx package is automatically loaded by the \texttt{aipproc} class. For detailed descriptions of the commands made available by this package see \cite{6} or the package documentation coming with the \LaTeX\ release. A sufficient introduction is also given by \cite{6} although there only the \texttt{graphics} package (a subset of the \texttt{graphicx} package) is described.

A typical application is given in the following example where a picture is resized to span 70\% of one column:

\begin{verbatim}
\begin{figure}[!b]
\resizebox{.7\columnwidth}{!}{\includegraphics{escher}}
\source{Guy Shaw}
\caption{An illustration taken from~\cite{A-W:GMS94}}
\label{fig:a}
\end{figure}
\end{verbatim}
resulting in figure \ref{fig:a}

Floats

Floats are objects which do not have to stay in sync with the running text but are allowed to move from their original place to some other position where they fit better for page breaking reasons. Such objects they are typically numbered so that they can be referenced from within the running text.

\LaTeX\ by default supports two float types: figures and tables. These float types are also supported by the \texttt{aipproc} class although their internal implementation is quite different resulting in a number of important differences in behavior:\footnote{There exist packages that extend the number of float types. (This information is given as a footnote to show that footnotes in this class come out below a bottom float.)}

\begin{itemize}
\item The position of the float caption is determined automatically, independently of the placement of the \texttt{\caption} command within the float body.
\item In case of a table the whole object (including its caption) might be rotated automatically if its exceeds \texttt{\textwidth}.
\item The body of the float environments are processed in L-R mode and not in paragraph mode as in standard \LaTeX\ This is necessary for measuring its width. Thus if paragraph mode is needed one has to put a \texttt{minipage} environment of the appropriate width (e.g., \texttt{\columnwidth}) into the body.
\item Only one \texttt{\caption} command per float is allowed.
\end{itemize}

\textit{Figures}

For the AIP 6in x 9in format the entire paper will be reduced 15\% in the printing process. Please make sure all figures as well as the text within the figures are large enough in the manuscript to be readable in the finished book.

\begin{verbatim}
\begin{figure}[*]
\\source{text}
\end{figure}
\end{verbatim}

Like with standard \LaTeX\ the optional \texttt{pos} argument can be used to specify into which float areas this float is allowed to migrate (default is \texttt{tbp}).

The environment \texttt{figure*} is not supported as figures that need to span both columns are automatically recognized.

\begin{verbatim}
\begin{figure}
\\source{text}
\end{figure}
\end{verbatim}

Command to specify the origin of the picture shown. The \texttt{text} will be printed in small italics below the illustration. (The use of this command is discouraged.)

A typical example of a figure float would be

\begin{verbatim}
\begin{figure}
\\source{Guy Shaw}
\\resizebox{.8\textwidth}{!}{\includegraphics{escher}}
\end{figure}
\end{verbatim}

\textbf{FIGURE 1.} An illustration taken from \cite{4}
The result is shown in Figure 2 on the following page.

If the illustration is to be manually pasted into the final document one can leave the right amount of space by using this command as follows:

\begin{figure}
\spaceforfigure{2in}{1cm}
\caption{Caption for a figure to be pasted in later}
\label{fig:3}
\source{F. Mittelbach}
\end{figure}

All standard \LaTeX units can be used to specify the space needed. The above example make room for an illustration that is two inches wide and one centimeter high. The result is shown as Figure 3 on the next page.

### Tables

\begin{table}[h]
\begin{tabular}{lrrrr}
\hline
& \textbf{Single\tablenote{2-9 retail outlets}}\textbf{\ multiple} & \textbf{Large\textbf{\ multiple}} & \textbf{Total} \\
\hline
1982 & 98 & 129 & 620 & 847\lbrack \textbf{predicted}\rbrack
1987 & 138 & 176 & 1000 & 1314
1991 & 173 & 248 & 1230 & 1651
1998\textbf{\ tablenote{predicted}} & 200 & 300 & 1500 & 2000 \\
\hline
\end{tabular}
\source{Central Statistical Office, UK}
\caption{Average turnover per shop: by type of retail organisation}
\label{tab:a}
\end{table}

To ease the production of tables the command \texttt{\tablehead{cols}{h-pos}{v-pos}{heading text}} is provided which is essentially and abbreviation for a \texttt{\multicolumn} command that additionally boldens its text argument. I.e., \texttt{cols} specifies the number of columns the \texttt{heading text} should span and \texttt{h-pos} defines the horizontal positioning of the text of the column(s), e.g., \texttt{l}, \texttt{r}, \texttt{c}, or \texttt{p{...}}. In contrast to a simple \texttt{\multicolumn} command the \texttt{heading text} can be split vertically by using \texttt{\} to denote the line breaks. The \texttt{v-pos} argument should contain either \texttt{t}, \texttt{c}, or \texttt{b} denoting the vertical placement of the text in relation to other cells of that row. It is only relevant if the \texttt{heading text} consists of more than one line. See the example table below that demonstrates the use of this command.

\begin{table}
\begin{tabular}{lrrrr}
\hline
& \textbf{Single\tablenote{2-9 retail outlets}}\textbf{\ multiple} & \textbf{Large\textbf{\ multiple}} & \textbf{Total} \\
\hline
1982 & 98 & 129 & 620 & 847\lbrack \textbf{predicted}\rbrack
1987 & 138 & 176 & 1000 & 1314
1991 & 173 & 248 & 1230 & 1651
1998\textbf{\ tablenote{predicted}} & 200 & 300 & 1500 & 2000 \\
\hline
\end{tabular}
\source{Central Statistical Office, UK}
\caption{Average turnover per shop: by type of retail organisation}
\label{tab:a}
\end{table}

Vertical spacing between horizontal lines produced from \texttt{\hline} inside a tabular environment is controlled by

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FIGURE 2. PostScript example taken from [4]

FIGURE 3. Caption for a figure to be pasted in later

TABLE 1. Average turnover per shop: by type of retail organisation

<table>
<thead>
<tr>
<th></th>
<th>Single outlet</th>
<th>Small multiple</th>
<th>Large multiple</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1982</td>
<td>98</td>
<td>129</td>
<td>620</td>
<td>847</td>
</tr>
<tr>
<td>1987</td>
<td>138</td>
<td>176</td>
<td>1000</td>
<td>1314</td>
</tr>
<tr>
<td>1991</td>
<td>173</td>
<td>248</td>
<td>1230</td>
<td>1651</td>
</tr>
<tr>
<td>1998</td>
<td>200</td>
<td>300</td>
<td>1500</td>
<td>2000</td>
</tr>
</tbody>
</table>

Source: Central Statistical Office, UK

a 2-9 retail outlets
b predicted

Long tables

Tables which are longer than one page cannot be placed into a table environment as floats cannot have a size larger than a page. Such tables are supported by the standard \LaTeX\ package longtable written by David Carlisle. However this package only works in single column mode.

The package is supported by the class in the sense that captions within a longtable environment will be formatted using the appropriate style; however in contrast to the table environment it is the responsibility of the user to place the caption at the top of the table. The commands \source and \tablenote are not supported within this environment, but the \tablehead command can be used to produce column heads if desired.

Refer to the longtable package documentation or to [6, p.122ff] for a detailed description of the syntax of the longtable environment.

A possible alternative is the package supertabular written by Johannes Braams; however in this case no attempt has been made to ensure that a table produced with supertabular conforms to the layout specification for the aipproc class. Be aware that this package defines its own \tablehead command (with a completely different function).

Refer to the package documentation for the syntax description. A detailed comparison between supertabular and longtable can be found in Chapter 5 of [6].

Building floats manually

The original \LaTeX\ environments figure and table as well as their star forms are still available under the names ltxfigure and ltxtable. They should not be used in normal circumstances but are provided in case the automatism of the aipproc class needs overwriting.

Please note that if these environments are used the position of the \caption command determines the placement of the caption within the float body and that the special commands for figures and tables, e.g., \tablenote, etc. as provided by this class are not available within these environments.
<table>
<thead>
<tr>
<th>File</th>
<th>Date</th>
<th>Version</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>aipproc.cls</td>
<td>2000/08/31</td>
<td>v1.2a</td>
<td>AIP Proceedings (FMi)</td>
</tr>
<tr>
<td>fixltx2e sty</td>
<td>1999/12/01</td>
<td>v1.0b</td>
<td>fixes to LaTeX</td>
</tr>
<tr>
<td>calc.sty</td>
<td>1998/07/07</td>
<td>v4.1b</td>
<td>Infix arithmetic (KKT, FJ)</td>
</tr>
<tr>
<td>ifthen.sty</td>
<td>1999/09/10</td>
<td>v1.1b</td>
<td>Standard LaTeX ifthen package (DPC)</td>
</tr>
<tr>
<td>graphicx.sty</td>
<td>1999/02/16</td>
<td>v1.0f</td>
<td>Enhanced LaTeX Graphics (DPC,SPQR)</td>
</tr>
<tr>
<td>keyval.sty</td>
<td>1999/03/16</td>
<td>v1.13</td>
<td>key=value parser (DPC)</td>
</tr>
<tr>
<td>graphics.sty</td>
<td>1999/02/16</td>
<td>v1.0l</td>
<td>Standard LaTeX Graphics (DPC,SPQR)</td>
</tr>
<tr>
<td>trig.sty</td>
<td>1999/03/16</td>
<td>v1.09</td>
<td>sin cos tan (DPC)</td>
</tr>
<tr>
<td>graphics.cfg</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>dvips.def</td>
<td>1999/02/16</td>
<td>v3.0i</td>
<td>Driver-depandent file (DPC,SPQR)</td>
</tr>
<tr>
<td>url.sty</td>
<td>1999/03/28</td>
<td>ver 1.5x</td>
<td>Verb mode for urls, etc.</td>
</tr>
<tr>
<td>article.cls</td>
<td>2000/05/19</td>
<td>v1.4b</td>
<td>Standard LaTeX document class</td>
</tr>
<tr>
<td>size10.clo</td>
<td>2000/05/19</td>
<td>v1.4b</td>
<td>Standard LaTeX file (size option)</td>
</tr>
<tr>
<td>mathptm.sty</td>
<td>2000/05/19</td>
<td></td>
<td></td>
</tr>
<tr>
<td>times.sty</td>
<td>2000/05/19</td>
<td></td>
<td></td>
</tr>
<tr>
<td>fontenc.sty</td>
<td>2000/05/19</td>
<td></td>
<td></td>
</tr>
<tr>
<td>t1enc.def</td>
<td>2000/08/30</td>
<td>v1.91</td>
<td>Standard LaTeX file</td>
</tr>
<tr>
<td>t1pm.fd</td>
<td>2000/08/30</td>
<td>PSNFFS-v8.1</td>
<td>Times + math package (SPQR)</td>
</tr>
<tr>
<td>textcomp.sty</td>
<td>2000/08/30</td>
<td>v1.91</td>
<td>Standard LaTeX package</td>
</tr>
<tr>
<td>t1enc.def</td>
<td>1998/06/12</td>
<td>v3.0l</td>
<td>Standard LaTeX file</td>
</tr>
<tr>
<td>varioref.sty</td>
<td>1999/12/02</td>
<td>v1.2c</td>
<td>package for extended references (FMi)</td>
</tr>
<tr>
<td>aip-8s.clo</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ttct0001.sty</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>shortvrb.sty</td>
<td>2000/07/04</td>
<td>v2.0m</td>
<td>Standard LaTeX documentation package (FMi)</td>
</tr>
<tr>
<td>hyperref.sty</td>
<td>2000/05/08</td>
<td>v6.70f</td>
<td>Hypertext links for LaTeX</td>
</tr>
<tr>
<td>pd1enc.def</td>
<td>2000/05/08</td>
<td>v6.70f</td>
<td>Hyperref: PDFDocEncoding definition (HO)</td>
</tr>
<tr>
<td>hyperref.cfg</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>hdvips.def</td>
<td>2000/05/08</td>
<td>v6.70f</td>
<td>Hyperref driver for dvips</td>
</tr>
<tr>
<td>pfdmark.def</td>
<td>2000/05/08</td>
<td>v6.70f</td>
<td>Hyperref definitions for pfdmark specials</td>
</tr>
<tr>
<td>ts1cmr.fd</td>
<td>1999/05/25</td>
<td>v2.5h</td>
<td>Standard LaTeX font definitions</td>
</tr>
<tr>
<td>namerref.sty</td>
<td>2000/05/08</td>
<td>v2.18</td>
<td>Cross-referencing by name of section</td>
</tr>
<tr>
<td>t1pr.fd</td>
<td>2000/05/08</td>
<td>PSNFFS-v8.1</td>
<td>font definitions for T1/pr.</td>
</tr>
<tr>
<td>otlptmcm.fd</td>
<td>2000/05/08</td>
<td>Fontinst v1.801</td>
<td>font definitions for OML/ptmcm.</td>
</tr>
<tr>
<td>omlptmcm.fd</td>
<td>2000/05/08</td>
<td>Fontinst v1.801</td>
<td>font definitions for OMS/ptmcm.</td>
</tr>
<tr>
<td>omspzcxm.fd</td>
<td>2000/05/08</td>
<td>Fontinst v1.801</td>
<td>font definitions for OMS/ptcmm.</td>
</tr>
<tr>
<td>omxpsydm.fd</td>
<td>2000/05/08</td>
<td>Fontinst v1.801</td>
<td>font definitions for OMX/psydm.</td>
</tr>
<tr>
<td>ts1pm.fd</td>
<td>2000/05/08</td>
<td>PSNFFS-v8.1</td>
<td>font definitions for TS1/pm.</td>
</tr>
<tr>
<td>escher.eps</td>
<td>2000/05/08</td>
<td></td>
<td>Graphic file (type eps)</td>
</tr>
<tr>
<td>outline.eps</td>
<td>2000/05/08</td>
<td></td>
<td>Graphic file (type eps)</td>
</tr>
</tbody>
</table>

Source: Output of `\listfiles` when processing `aipguide.tex`
The natbib system has two basic citation commands, \citet and \citep for textual and parenthetical citations, respectively. There also exist the starred versions \citet* and \citep* that print the full author list, and not just the abbreviated one. All of these may take one or two optional arguments to add some text before and after the citation. Table 3 on the following page shows some examples. There are many more commands and variants, see [2] or [3] for further details.

**Bibliography produced manually**

```latex
\begin{thebibliography}{widest-label}
\bibitem{Brown2000}
Brown, M.-P., and Austin, K., \textit{The New Physique}, Publisher Name, Publisher City, 2000, pp. 212--213.

If commands from natbib (e.g., from table 3) should be usable, then additional information has to be passed to the \bibitem via an optional argument.

\bibitem[display-info]{label}
The optional argument display-info should then, and only then, contain the author(s) name(s) followed by the year in parentheses without any spaces, for example:

\bibitem[Brown and Austin (2000)]{Brown2000}
(Brown2000)

... 

The essential feature is that the label (the part in brackets) consists of the author names, as they should appear in the citation, with the year in parentheses following. There must be no space before the opening parenthesis! This will be automatically produced if \LaTeX{} is used.

**Bibliography produced using \LaTeX{}**

The aipproc class is accompanied by \LaTeX{} style files which can be used to produce compliant reference lists from \LaTeX{} database files. To use \LaTeX{} one first has to run the source file through \LaTeX{} then run \LaTeX{} twice to get all references resolved. \LaTeX{} is described in more detail in appendix B of [6] and in chapter 13 of [4].

```latex
\bibliographystyle{style-name}
```

This declaration specifies to \LaTeX{} that the style \textit{style-name} should be used. It can be placed anywhere within the document but is usually positioned directly in front of the command described below.

Compliant \LaTeX{} styles are aipproc (for use with natbib) and aipprocl (if natbib is missing at the site).

```latex
\bibliography{bib-list}
```

This command denotes the position where the reference list produced by \LaTeX{} will be included in the document. The \textit{bib-list} is a comma separated list of \LaTeX{} database files.

**GENERAL REQUIREMENTS AND RESTRICTIONS**

This class was designed to work with \LaTeX{} release 1999/06/01 or a later version. Earlier releases may work but have not been tested.

With the exception of the packages natbib and url it only requires files which are part of a standard \LaTeX{} distribution, i.e., it should work if your installation contains the following components: base, tools, graphics, and psnfss, see 2 on the page before for files used to produce this document.

The most recent \LaTeX{} distribution as well as natbib and url can be obtained from CTAN sites (Comprehensive \TeX{} Archive Network).

Refer to [http://www.tug.org](http://www.tug.org) for more information on CTAN and \TeX{} in general.

A ready to run \TeX{} system for various platforms which has everything required is available on CD-ROM, look into [http://www.tug.org/texlive.html](http://www.tug.org/texlive.html).

**REFERENCES**

2. Daly, P., \textit{Natural Sciences Citations and References (Author-Year and Numerical Schemes)}, 1999, distributed as natbib.dtx with the natbib software.
TABLE 3. Example of `natbib` commands and their results

<table>
<thead>
<tr>
<th>Author/year style</th>
<th>Numerical style</th>
</tr>
</thead>
<tbody>
<tr>
<td>\citet{jon90} ⇒ Jones et al. (1990)</td>
<td>\citet{jon90} ⇒ Jones et al. [21]</td>
</tr>
<tr>
<td>\citet[chap.~2]{jon90} ⇒ Jones et al. (1990, chap. 2)</td>
<td>\citet[chap.~2]{jon90} ⇒ [21, chap. 2]</td>
</tr>
<tr>
<td>\citep{jon90} ⇒ (Jones et al., 1990)</td>
<td>\citep{jon90} ⇒ [21]</td>
</tr>
<tr>
<td>\citep[see]{jon90} ⇒ (see Jones et al., 1990)</td>
<td>\citep[see]{jon90} ⇒ [see 21]</td>
</tr>
<tr>
<td>\citep*[jon90] ⇒ Jones, Baker, and Williams (1990)</td>
<td>\citep*[jon90] ⇒ [21, 32]</td>
</tr>
</tbody>
</table>
