Long title

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This is an example input file. Comparing it with the output it generates can show you how to produce a simple document of your own.

1 Introduction

The class file `w-art.cls` represents an adaptation of the LaTeX 2_ε-standard class file `article.cls` and the $\mathcal{AMS}$ class file `amsart.cls` with the size option `10pt` to the specific requirements of journal production at WILEY-VCH Verlag GmbH & Co. KGaA, Weinheim. It can be used through the LaTeX-command

```
\documentclass[<abbr>, fleqn, other options]{w-art}
```

where <abbr> is an abbreviation of the journal name.

Table 1 Abbreviations for journal names.

adp	Ann. Phys. (Berlin)	Annalen der Physik
cpp	Contrib. Plasma Phys.	Contributions to Plasma Physics
gamm	GAMM-Mitt.	GAMM-Mitteilungen
mn	Math. Nachr.	Mathematische Nachrichten
mlq	Math. Log. Quart.	Mathematical Logic Quarterly
pamm	PAMM · Proc. Appl. Math. Mech.	Proceedings in Applied Mathematics and Mechanics
fdp	Fortschr. Phys.	Fortschritte der Physik
zamm	ZAMM · Z. Angew. Math. Mech.	Zeitschrift für Angewandte Mathematik und Mechanik

One difference to the standard layout is the indentation by 3 cc or 4 cc of floats (figures and tables) and mathematical environments (`\[...\]`, equation, ...). To achieve this effect the new floats `vchtable` and `vchfigure` were added which are to be used in combination with `\vchcaption`. The standard `table`, `figure`, and `\caption` commands are nevertheless still working. So if there is the need to place a table or figure over the full width of the page these floats may still be used. In order to get short captions flushed left in contrast to the standard centered form the class loads internally the `caption2.sty` package by Harald Axel Sommerfeldt with the options `nooneline, small, bf`.

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Table 2 The caption inside a table environment.

Description 1	Description 2	Description
Row 1, Col 1	Row 1, Col 2	Row 1, Col 3
Row 2, Col 1	Row 2, Col 2	Row 2, Col 3

2   Required packages

This class requires the standard LaTeX packages `calc`, `color`, `sidecap`, and `caption2` and the $\mathcal{AMS}$-LaTeX packages.[1]

2.1   New documentclass options

referee: Prints the document with a larger amount of interline whitespace.

2.2   Floating objects – figures and tables

We have two different table environments: `table` and `vchtable`. The same holds true for figure: `figure` and `vchfigure`. The vch-types including their captions (`\vchcaption`) are typically leftindented by an amount equal to the indentation of mathematical formulas.

For the caption layout the `caption2.sty` package is preloaded.

2.2.1   Tables

The LaTeX code for Table 2 is

```
\begin{table}
\caption{The caption inside a table environment.}
\label{tab:2}
\begin{tabular}{@{}lll@{}}
\hline
Description 1 & Description 2 & Description \\
\hline
Row 1, Col 1 & Row 1, Col 2 & Row 1, Col 3 \\
Row 2, Col 1 & Row 2, Col 2 & Row 2, Col 3 \\
\hline
\end{tabular}
\end{table}
```

Please note the `@{}` entries at the begin and end of each `tabular` column definition. These are used to remove the standard white space before the first column and after the last column of the table. Thus, the material inside the `tabular` environment will properly align at each side.

The LaTeX code for Table 3 (a vchtable) is

```
\begin{vchtable}
\vchcaption{The caption inside a vchtable environment.}
\label{tab:3}
\begin{tabular}{@{}lll@{}}
\hline
Description 1 & Description 2 & Description \\
\hline
Row 1, Col 1 & Row 1, Col 2 & Row 1, Col 3 \\
Row 2, Col 1 & Row 2, Col 2 & Row 2, Col 3 \\
```

---

[1] If these packages are not part of your installation you may download them from the nearest CTAN server.

Table 3 The caption inside a vchtable environment.

Description 1	Description 2	Description
Row 1, Col 1	Row 1, Col 2	Row 1, Col 3
Row 2, Col 1	Row 2, Col 2	Row 2, Col 3

```
\hline
\end{tabular}
\end{vchtable}
```

2.2.2 Figures

The LaTeX code for Fig. 1 is

```
\begin{figure}[b]
\includegraphics[width=\linewidth, height=2cm]{empty}
\caption{The usual figure environment. It ...}
\label{fig:1}
\end{figure}
```

The LaTeX code for Fig. 2 (a vchfigure) is

```
\begin{vchfigure}[b]
  \includegraphics[width=.5\textwidth,height=25mm]{empty}
\vchcaption{A vchfigure  environment with a vchcaption.
Figure and caption are leftindented.}
\label{fig:2}
\end{vchfigure}
```

The LaTeX code for Figs. 3 and 4 is

```
\begin{figure}
\begin{minipage}{72mm}
\includegraphics[width=\linewidth,height=25mm]{empty}
\caption{Two figures side by side with different numbers.}
\label{fig:3}
\end{minipage}
\hfil
\begin{minipage}{65mm}
\includegraphics[width=\linewidth,height=25mm]{empty}
\caption{This is the second picture.}
\label{fig:4}
\end{minipage}
\end{figure}
```
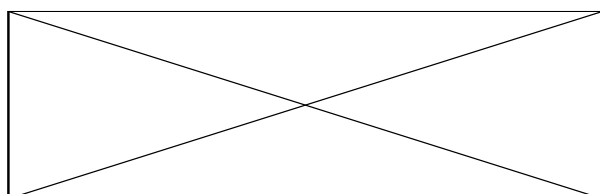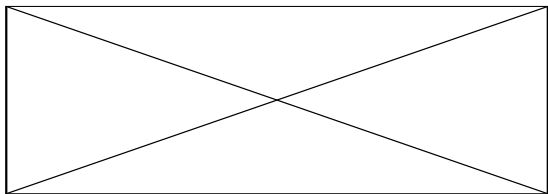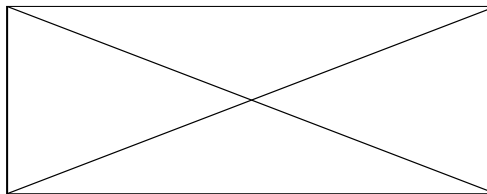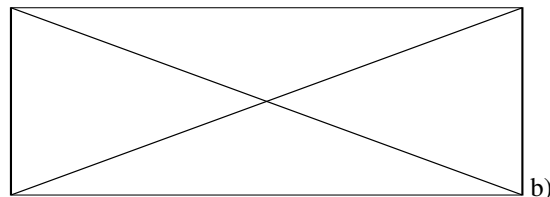
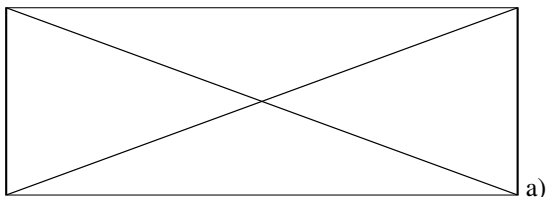The LaTeX code for Figs. 5a and b is

Fig. 1 A vchfigure environment with a vchcaption. Figure and caption are leftindented.

Fig. 2 Two figures side by side with different numbers.

Fig. 3 This is the second picture.

a)

b)

Fig. 4 Two figures with one number. The figures are referred to as **a** and **b**.

```
\begin{figure}
\includegraphics[width=68mm,height=25mm]{empty}~a)
\hfil
\includegraphics[width=68mm,height=25mm]{empty}~b)
\caption{Two figures with one number. The figures
are referred to as \textbf{a} and \textbf{b}.}
\label{fig:5}
\end{figure}
```

In order to print a figure and a table side by side the \setfloattype command is introduced. The LaTeX code for Fig. 6 and Table 4 is

```
\begin{figure}
\begin{minipage}{75mm}
\includegraphics[width=\linewidth,height=35mm]{empty}
\caption{Figure and table side by side. This is the picture.}
\label{fig:8}
\end{minipage}
\hfil
\begin{minipage}{65mm}
\setfloattype{table}
\caption{This is the table. ... .}
\label{tab:4}
\begin{tabular}{@{}lll@{}}
...
\end{tabular}
\end{minipage}
\end{figure}
```

2.2.3 Small figures and tables

Single figures and tables less than 86mm wide should be typeset with their captions on the right side, bottoms aligned. The command \sidecaption will achieve that for figures:
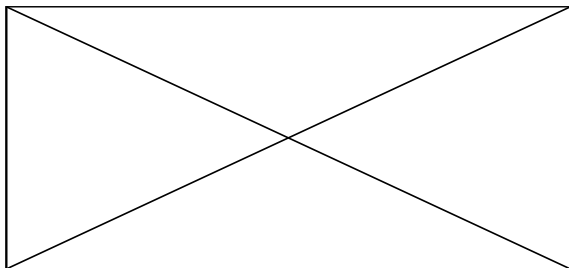
```
\begin{figure}[<float>]
\sidecaption
```

Table 4 This is the table. Picture and table are both numbered independently.

Description 1	Description 2	Description
Row 1, Col 1	Row 1, Col 2	Row 1, Col 3
Row 2, Col 1	Row 2, Col 2	Row 2, Col 3

Fig. 5 Figure and table side by side. This is the picture.
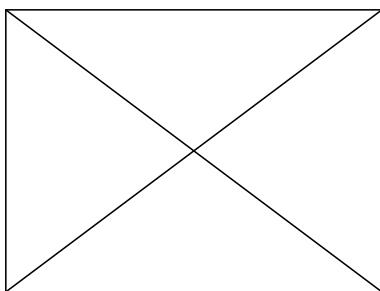

Fig. 6 Caption of a small figure.

```
\includegraphics[<options>]{filename}%
\caption{Caption of a small figure.}
\label{fig:6}      % Give a unique label
\end{figure}
```

where <float> (optional) is the known floating position parameter. See Fig. 7 for an example; the LaTeX code for that is

```
\begin{figure}
\sidecaption
\includegraphics[width=50mm]{empty}%
\caption{Caption of a small figure.}
\label{fig:sidecaption}
\end{figure}
```
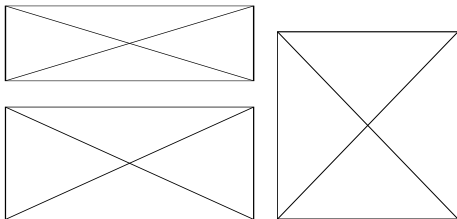
The \sidecaption macro expects just one LaTeX box; so with more than one simple picture file or some other structure, that has to be encapsulated in a box structure:

```
\begin{figure}[<float>]
\sidecaption
\begin{minipage}{<boxwidth>}
...
\end{minipage}%
\caption{Caption of ... .}
\label{fig:X}      % Give a unique label
\end{figure}
```

where <boxwidth> is the width of the box that the \sidecaption macro gets as argument.

Note that virtually *anything* could be typeset inside that box. For example, in Fig. 8 a couple of small items are assembled to one picture; here is the LaTeX code for that:

```
\begin{figure}
\sidecaption
\begin{minipage}[b]{60mm}
```

Fig. 7 Caption of a *complicated* small figure.

Description 1	Description 2	Description
Row 1, Col 1	Row 1, Col 2	Row 1, Col 3
Row 2, Col 1	Row 2, Col 2	Row 2, Col 3

Table 5 Caption of a small table.

```
\begin{minipage}[b]{33mm}%
\includegraphics[width=\linewidth,height=10mm]{empty}\\[3mm]%
\includegraphics[width=\linewidth,height=15mm]{empty}
\end{minipage}%
\hfill%
\begin{minipage}[b]{24mm}%
\includegraphics[width=\linewidth,height=25mm]{empty}
\end{minipage}%
\end{minipage}%
\caption{Caption of a \emph{complicated} small figure.}
\label{fig:couple}
\end{figure}
```

Note the (optional) `[b]` parameter which sets the base lines of the minipages to their lower limits, so the outermost one positions exactly at the correct height in respect to the side caption.

For tables `\tabsidecaption` has to be used instead:

```
\begin{table}[<float>]
\tabsidecaption
\begin{tabular}{@{}lll@{}}
\hline
Description 1 & Description 2 & Description \\
\hline
Row 1, Col 1 & Row 1, Col 2 & Row 1, Col 3 \\
Row 2, Col 1 & Row 2, Col 2 & Row 2, Col 3 \\
\hline
\end{tabular}
\caption{Caption of a small table.}
\label{tab:sidecaption}
\end{table}
```

Note that for technical reasons the `\caption` command has to be placed right *after* the table when using this construct. See Table 5 for the result of the LaTeX code fragment above.

3 Test of math environments

Equations are always left-aligned. Therefore the option fleqn is used for the documentclass command by default. Note that fleqn does not work with unnumbered displayed equations written as `$$ Ax =b $$`, so please use `\[ Ax=b \]` or an `equation*` or `gather*` environment instead.

By default the equations are consecutively numbered. This may be changed by putting the following command inside the preamble

```
\numberwithin{equation}{section}
```

The latex math display environment \[...\]

$$\sum_{i=1}^{\infty} \frac{1}{i^2}$$

An equation environment:

$$\sum_{i=1}^{\infty} \frac{1}{i^2} \tag{1}$$

For more mathematical commands and environments please refer to the document `*-tma.tex` and the documentation of the $\mathcal{AMS}$ classes.

3.1 Some predefined theorem like environments

Some predefined theorem like environments may be used by loading the package `w-thm.sty`. This package will load by itself the package `amsthm.sty`. So it will be easy to define new theorem- and definition-like environments. For further details refer to the documentation of the `amsthm.sty` package.

Table 6 Some predefined theorem like environments.

environment	caption	theoremstyle
thm, theorem	Theorem	theorem
prop, proposition	Proposition	theorem
lem, lemma	Lemma	theorem
cor, corollary	Corollary	theorem
axiom	Axiom	theorem
defs, defn, definition	Definition	definition
example	Example	definition
rem, remark	Remark	definition
notation	Notation	definition

Theorem 3.1 *This is a theorem.*

Theorem 3.2 *Another theorem.*

P r o o f. This is a proof. □

Definition 3.3 This is a definition.

Proposition 3.4 *This is a proposition.*

Lemma 3.5 *This is a lemma.*

Corollary 3.6 *This is a corollary.*

Example 3.7 This is an example.

Remark 3.8 This is a remark.

3.2 Definition of new theorem like environments

Because `w-thm.sty` uses `amsthm.sty` the definition of new theorem like environments will be done in the same manner as in the amsthm package. The definition of

```
\theoremstyle{plain}
\newtheorem{criterion}{Criterion}
\theoremstyle{definition}
\newtheorem{condition}[theorem]{Condition}
```

inside the preamble of the document will give the following envirenments.

Criterion 1 *This is a Criterion.*

Condition 3.9 This is a Condition.

If the name of a predefined environment has to be changed it can be done by e.g. typing

```
\renewcommand{\definitionname}{Definitions}
```

after the `\begin{document}` command.

3.3 Change marks

Please use for changes requested by the referee the following colour change option: This is a text snippet marked as *changed*. This is done by enclosing it in an environment called `changed`. Please note that in certain circumstances there might be small side effects such as make up deviations or additional blanks.

Making bibliographies using BibTeX and mlq.bst

At the end of this file you see an example bibliography which represents the journals reference style [1–6]. Please format your real bibliography accordingly.

Optionally, you may generate your bibliography using BibTeX, with the bib-style-file pss.bst from the template package in your LaTeX search path. To this end, replace the example database-file `mlq-tpl.bib` with your own existing one, or alternatively use it as a template for generating your new database. The following code in your manuscript source file enables BibTeX-functionality:

```
\bibliographystyle{mlq}
\bibliography{<database-filename>}
```

You then need to run your manuscript source file through BibTeX using the command

```
bibtex <filename>
```

(most TeX frontends have a shortcut for this) and afterwards through LaTeX twice, in order to get the correct label numbering.

Important: Before sending your manuscript source file to the publisher, remember to transfer the actual, fully formatted bibliography contained in the BibTeX-generated file *<filename>*`.bbl` to your manuscript source file.

References

[1] F. M. Firstauthorfamilyname, F. M. Secondauthorfamilyname, and C. Lastauthorfamilyname, The title of the article, Abbreviatedjournalname **volume**, page (year).

[2] F. Examplename and I. E. Anotherauthorname, The title of the article, phys. stat. sol. (a) **1**, 111 (2050).

[3] A. Firstauthorname, B. Secondauthorname, and C. Thirdauthorname, Here Goes the Title of the Book (Publisher, City, year), p. 111.

[4] A. Firsteditorname, B. Secondeditorname, and C. Thirdeditorname (eds.), Here Goes the Title of the Edited Book (Wiley-VCH, Berlin, 2050), p. 111.

[5] D. Contributorname, in: The Title of the Book, edited by The Name of the Editors, Followed by the Title of the Series of Books (Publisher, City, year), chap. 1.

[6] A. Lastbutnotleastname, Proceedings 1st Dummy Conference on Citation Formatting, City, Country, Part A (Publisher, City, year), pp. 1–11.