Author's guide for the *Annalen der Physik* LaTeX class

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This article gives instructions for authors of *Annalen der Physik* (*Ann. Phys.*) how to prepare an article using the current LaTeX class andp2012. The source code of this paper may be used as an instructive example; see p. 11 for a listing. To ease the creation of new *Annalen der Physik* papers this package also contains commented two- and three-column template files named andp-template-2column.tex and andp-template-3column.tex, respectively. For further information about the journal, its publisher, editorial staff and author guidelines please visit the journal homepage at www.ann-phys.org where the package can be obtained from.

1 Introduction

In order to ensure that papers received for publication from different authors are consistent in format, style, and quality, authors are asked to prepare their manuscripts according to the following instructions. The editors will modify the electronic manuscripts if necessary to ensure that they conform to these standards.

Final pre-print and print issues of the paper will be typeset using the Utopia Expert and FF Profile Pro script families. Most fonts of these are commercial, non-free fonts that are unlikely to be installed on the average computer, so as long as the class option (see below) final is *not* given, this LaTeXclass uses the free subset of the Utopia family along with the basic free Helvetica and Courier (clone) fonts. Please keep in mind that the metrics of the fonts used in draft are quite different from the final fonts, so there will be differences concerning the text make-up and (probably) the float placement. Consequently, please don't waste your time and energy by considering the make-up of your article too much because this is taken care of by the editor(s) anyway.

To cut a long story short: the less tricks you put in, the less have to be removed or altered. Thank you!

To give you an idea of the optical difference, this paper is typeset using the class option final, thus using the non-free scripts mentioned above.

2 LaTeX markup

Authors using LaTeX are requested to use the andp2012 document class. It is based on TeX version 3.1415926 and LaTeX 2$_\varepsilon$, hence formulæ and text are typed using the common LaTeX commands.

2.1 What is needed

The LaTeX package andp2012 consists of
– the class file andp2012.cls,
– the BibTeX style andp2012.bst,
– this Author's guide andp-guide.pdf, and
– the LaTeX source of a couple of template files to ease the generation of papers:
  • andp-template-2column.tex and
  • andp-template-3column.tex.
These *can not* be run through LaTeX unmodified, though. Please read *carefully* the comments inside. There are uncommented versions for the LaTeX- and andp2012-savvy:
  • andp-template-2column-uncommented.tex and
  • andp-template-3column-uncommented.tex.

An archive containing these is available via the journal homepage (http://www.ann-phys.org) or on request via e-mail from the editor (ann-phys@wiley-vch.de).

By the way, URLs in this document are active; you can click them to go to the respective web location.

2.1.1 Additional packages

andp2012 uses a number of utility packages which should be present in any up-to-date LaTeX 2$_\varepsilon$ distribution, e. g., all being based on TeXlive 2011 or newer, see the download site. Additionally, a few quite new packages are used which are not part of TeXlive 2011 (may be just not yet in the version needed). Please make sure you have (or get) a version with at least the version number shown below.

tabu 2.8 by Florent Chervet provides an universal tabular environment (by the name tabu) which the andp2012 table environment is constructed upon. The package is available for download at http://mirror.ctan.org/macros/latex/contrib/tabu.zip.

mdframed 1.5 by Marco Daniel and Elke Schubert provides framed environments that can split at page boundaries. The package is available at http://mirror.ctan.org/macros/latex/contrib/mdframed.zip.

adjustbox 0.8 by Martin Scharrer provides several macros to adjust textual content in the same way the graphicx package does with graphics. The package is available at http://mirror.ctan.org/macros/latex/contrib/adjustbox.zip.

picins is a fairly old package by Joachim Bleser. It provides means to wrap text of around inserted material. The package is included in MikTEX and available at http://mirror.ctan.org/macros/latex209/contrib/picins.zip.

2.1.2 Installation

The files andp2012.cls and andp2012.bst have to be placed where TEX can find them during typesetting. The same goes for the packages mentioned above (please note that for those, you might have to prepare the final .sty file(s) first. Please consult the respective package documentation first).

A typical location for that would be your *local texmf folder*. Please consult the documentation of your TEX distribution and/or environment where to find it. Table 1 shows a couple of examples for different operating systems.

Table 1 Typical places for the local texmf folder. "~" stands for your home folder.

OS/TEX environment	Path
Windows/MikTEX	C:\Local TeX Files (see also the specific section of the MikTEX manual)
Mac OS X/TEXlive	~/Library/texmf
Linux	~/texmf *or* ~/.texmf

2.2 The Preamble

The very first piece of markup in the manuscript declares the *class of the document*. This is achieved by the \documentclass command which starts any LaTeX document. Please note that in the following lists several commands normally appearing on *one* line are broken due to the column width; this is neither necessary nor advisable in the real LaTeX file.

`\documentclass{andp2012}`

This specifies the document class to be andp2012. For two-column articles to be submitted no additional *class options* are needed. This basic mode suppresses the publisher's logo and ensures that Helvetica (or one of it's free clones) is used instead of the non-free Profile Pro.

`\documentclass[threecolumn]{andp2012}`

Material to be submitted for the three-column section should be switched to the respective mode by giving the threecolumn option. Please note that in this mode the columns are balanced on the last page; if for any purpose one wants to switch off that this is achieved by giving the threecolumnunbalanced option.

2.3 The heading section

2.3.1 Title, author(s), abstract, etc.

The LaTeX commands described here define the heading section. Most of them are optional, that is, they only have to be given if needed. On the other hand, most of them *are* needed in most articles. The information for the title page has to be placed before \maketitle which processes these informations. The order of most title entries is determined by the class file and can not be changed by rearranging these macros.

`\category{}`
`\subcategory{}`

Category and subcategory of an article are given here. In three-column context the \subcategory command is mandatory, in two-column context it is optional and serves as a pretitle. TEXnically, both commands are optional; if omitted, the vertical category mark at the page edge remains empty, and the subcategory entry simply won't appear. For most three-column papers, the correct category entry would be "Physics Forum", while for two-column papers it would be either "Review Article" or "Original Paper". If you are not sure what to insert, please leave that to the publisher.

`\title[]{}`
`\subtitle{}`

Here, the main and running titles are to be given. If only the mandatory argument of the \title command is used it will set the running title too; otherwise, if the article's main title text (plus the possibly long author names) is too long for the running page head you should give a shorter one using the optional argument.

There is also an optional \subtitle command which inserts exactly that. This subtitle will appear on the title page only, not in the running head.

\titlefigure[height=...]{<file name>}

This macro declares the file name of some title picture to be typeset on the top right of the title page, beside the titling information, but above the abstract and main text. This is optional, so if you don't want a picture here, just omit this line.

Internally, the figure is handled by the graphicx package, so you can modify the picture's appearance by using any it's key-value pairs. By default with=\linewidth is given, so if there is no optional argument, the figure will be inserted as wide as one text column.

```
\begin{abstract}
   ...
\end{abstract}
\shortabstract
```

The abstract text is to be declared in this environment.

In two-column context it will appear in a coloured box one or two columns wide. If the abstract text fits nicely in one column it should be typeset that way. This is achieved by giving the shortabstract directive somewhere in the preamble. If you are in doubt if it will fit once the final typefaces, figures, and corrections are applied please leave that decision to the editor. The wide form of the abstract box will fill both columns, the narrow form will appear on top of the left text column.

In three-column context the abstract text will appear without a box, but boldfaced and side-wide in one column. Clearly, text this broad will not very easily readable, so this is meant for some occasional punch line of some sort.

\author[]{}

Please name all authors, enclosing each name in one \author declaration. Please make sure to insert the long form of the name in the mandatory argument and the abridget one in the optional argument, as described below.

In three-column articles the *sequence* of author names and addresses at the article end is identical to the sequence of the respective \author and \address macros here:

```
\author[F. Author]{First Author}
\address{Affiliation and address of First Author}
\author[S.\,X. Author]{Second X. Author}
\author[T.\,Y. Author]{Third Y. Author}
\address{Affiliation and address of Second X. Author and Third Y.
    Author}
```

E-mail addresses of authors are given as part to the respective address entry. Note that in this form \inst is not used at all.

In two-column mode the sequence of author names and addresses in the article title page mirrors to the sequence of the respective \author and \address macros. They don't have to be intertwined as in three-column mode, though. The correspondence between author names and (probably multiple) affiliations is shown using numerical tags in \inst directives and corresponding numerical arguments of the \address declarations, respectively:

```
\author[F. Author]{First Author\inst{1,}%
\footnote{Corresponding author\quad E−mail:~\textsf{
    firstauthor@example.org}}}
\author[S.\,X. Author]{Second X. Author\inst{2}}
\author[T.\,Y. Author]{Third Y. Author\inst{2}}
\address[1]{Affiliation and address of First Author}
\address[2]{Affiliation and address of Second X. Author and Third
    Y. Author}
```

Multiple tags are to be separated by "," (without any surrounding spaces). If there is just one affiliation address the numbers should be omitted.

Note, that here the E-mail addresses of the corresponding author is given as a footnote to the respective name. There might be more than one E-mail address as well. If there is just one author the part before "E-mail" should be dropped.

One can also provide the list of abbreviated names for the column title using \shortauthors; if there are more than two authors to an article, this becames mandatory.

\shortauthors{}

Two author names are separated by "and" without a leading comma. If there are more than two authors, please put the first author's name with a trailing "et al." into the running head. Here are the schemes for one, two, and more than two authors, respectively:

– F. Author
– F. Author and S. Author
– F. Author et al.

\keywords{}

Give some keywords for the article, if you have. All words should be downcased except the first one, names, acronyms and so on. The keyword entries are separated by commas and the whole sequence has to end with a period.

If one wishes to have an acknowledgements section, the acknowledgements environment will do. The text of the acknowledgements will be typeset at the end of the main article, as part of the article informations preceding (and produced by) the biography block. Here is an example:

```
\begin{acknowledgements}
   Insert your acknowledgements here.
\end{acknowledgements}
```

2.3.2 Editorial information

There are a couple of commands intended for specification of editorial or publication data:

```
\setcopyrightyear{2012}%
\DOIprefix{10.1002}%
\DOIsuffix{andp.201100xxx}%
\Volume{524}%
\Issue{}%
\Month{}%
\Year{2012}%
\Day{1}
\pagespan[A]{}{}%
\Receiveddate{}
\Reviseddate{}
\Accepteddate{}
\Dateposted{}
```

Please ignore these. They will be completed by the publisher, as soon as possible and as far as needed. The respective code lines are commented in the template file and should be left in this state.

2.3.3 Producing the title page

By now the commands declaring heading elements are described. The following command assembles all that information and produces the article title:

```
\maketitle
```

It is the only command described by now that *must* be used after the \begin{document} command; it is advisable, though, to put all of those between \begin{document} and \maketitle because there might be some adjustment to some (probably internal) detail being tied to \begin{document} that would be missed if the declaration using this detail were in the preamble.

2.4 Sectioning

The andp2012 class supports four levels of sectioning:

```
\section{Title of section}
\subsection{Title of subsection}
```

```
\subsubsection{Title of subsubsection}
\paragraph{Title of paragraph}
```

which would result in the following output, if given at the begin of an article:

1 Title of section

1.1 Title of subsection

1.1.1 Title of subsubsection

**Title of paragraph**   *Text . . .*

These commands delimit sections by marking their *beginnings*, respectively; there are no separate commands to identify the *ends*. The titles of sections and subsections are capitalized only in the first word, except for proper names, designations, and acronyms.

Appendices are started by the \appendix command. *This is a command, not an environment.* They are sectioned as above but sections will be "numbered" with capital letters A, B, C, ...

2.5 Figures

The formats of choice for author's graphics are EPS (Encapsulated PostScript) and PDF (Portable Document Format). Other formats like PNG (Portable Network Graphics), TIFF (Tagged Image File Format), PSD (PhotoShop Document), and generally all common formats are also accepted. Please make sure, that your pictures meet the following criteria:

– All fonts used in PDF or [E]PS documents must be embedded, not just referenced. Otherwise picture content might be altered or rendered differently in typesetting and/or print. This applies also to ubiquitous fonts like Times, Helvetica, Arial and the like.
– Images should have tight *bounding boxes*, that is, empty (white or transparent) areas around the actual pictorial content should be as small as feasible. Also, decorative frames around pictures should be omitted at all.
– The resolution of raster pictures should be at least 300 dpi; for mostly white graphics with thin lines in it (so-called *line graphics* such as diagrams, curves and so on, a value of 1200 dpi is appropriate. So, if you want a particular picture to be typeset at a particular width you should provide it with at least the proper width in pixels. Here are some comparative figures:
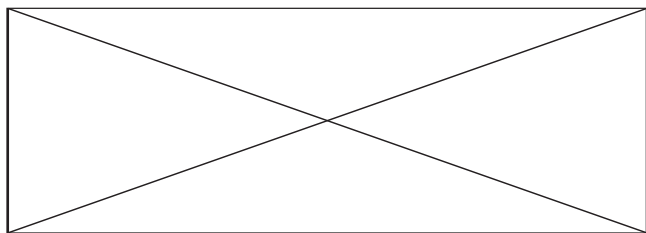
Figure 1 This is a figure over one column. Use the {figure} environment for this. The caption of a figure shall describe the content of the figure. An exception is granted only to the editor of *this* text, which demonstrate the usage of this command.

Table 2 Width in pixels for column- and text-wide figures for different resolutions.		
Image width in print	**300 dpi**	**1200 dpi**
column (85 mm)	1004	4016
page (175 mm)	2067	8268

Please note that the height of characters and digits inside pictures in the finally printed manuscript should roughly be the same as in the text.

– Please avoid sending images in uncommon, unsuitable, and/or proprietary formats like PPT (PowerPoint), Excel spreadsheets, Windows metafile (WMF, EMF, XMF) and the like.

The standard width of a figure in *Ann. Phys.* is equal to the width of one column. The figure caption is set below the figure. The standard way for inclusion of a picture file looks like this:

```
\begin{figure}
  \includegraphics*[width=<wd>]{<name>}
  \caption{<caption>}
  \label{<label>}
\end{figure}
```

This is the form of the figure environment for figures spanning up to column width. In this scheme, the items inside <...> are placeholders:

– <wd> is to be replaced with the intended picture width in any TeX length unit, e. g. 82.5mm, or as a multiple of some TeX length register, e. g., 0.5\linewidth. Here, a useful choice would be one of
  • the *column* width \columnwidth,
  • the *text* width \textwidth, or
  • the *local* line width \linewidth.

If the figure is meant to appear with its original width, then the whole optional argument (the sequence in square brackets) can be deleted.

– <name> is the name (without extension, e. g., .eps, .pdf, . . .) of the picture file to be included,
– <caption> stands for the caption text to the figure (see Fig. 1), and
– <label> should be replaced by some label, so that one can refer to this figure, see Sect. 2.8.

For wider figures up to full text width use the starred form:

```
\begin{figure*}
  % \twocolcaption
  % \sidecaption
  \includegraphics*[width=<wd>]{<name>}
  \caption{<caption>}
  \label{<label>}
\end{figure*}
```

The directives \twocolcaption and \sidecaption act as modifiers to the format of the caption; at most one of them should be given. Each of them should appear right after \begin{figure*} as seen above.

If you have a substantially less than page-wide figure, you can use \sidecaption to typeset the caption to the right of the figure. Make sure that the caption text is not taller than the picture itself. If the figure is output on top of a page the upper edge of the caption and the icture should be at the same height; this can be achieved by insertion of some \vskip or \vspace* as the last token inside the \caption {...}. See Fig. 2 on p. 6 for an example.

By the way, please make sure that any *floating material* like figures and tables appears on or after the page where it is referenced first.

In the case of a page-wide figure the caption should be typeset in two columns for better readability. Use \twocolcaption for that; see Figure 3.

2.6 Tables

2.6.1 Standard tables

Tables in *Ann. Phys.* are a bit special as the are quite colorful with alternating row colors and an integrated caption. So we supply equally special environments for that.

Standard tables shall be typeset without any rules inside. Vertical rules should be used only in exceptional cases for the sake of clarity and low visual noise. Tables are normally input using the andptabular environment:
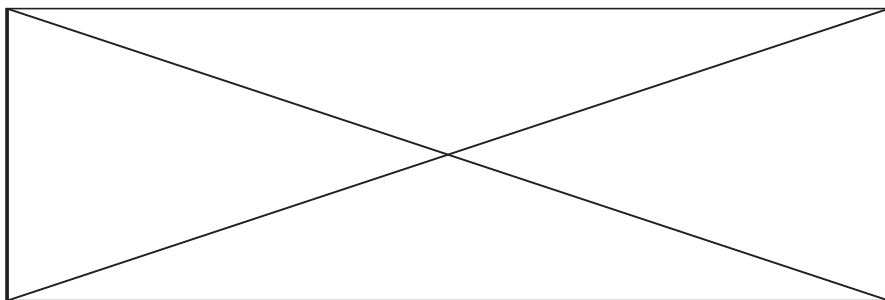
```
\begin{andptabular}[<width>]{<cols>}{<caption>}
```

Figure 2 A figure wider than one column. Use the {figure*} environment for this.

Figure 3 A page-wide figure (using the {figure*} environment). In order to show the two-column caption feature we need a bit of filler text, so here we go: Lorem ipsum ad qui amet dolore, vitae cetero quaerendum mel ea. Facilis fastidii duo no. Viris partiendo ius no, alia animal nam at. Feugait imperdiet ius an, no quis facer lucilius vis. Aliquam saperet contentiones ex pro, id idque offendit ius. Fugit suavitate ad eam, ut essent debitis cum. Cu duo iudico instructior. Sea te choro perfecto, per eu meis nonumy percipit. Ut mea sint constituam, cu pro impedit constituam.

```
    …
\end{andptabular}
\label{<label>}
```
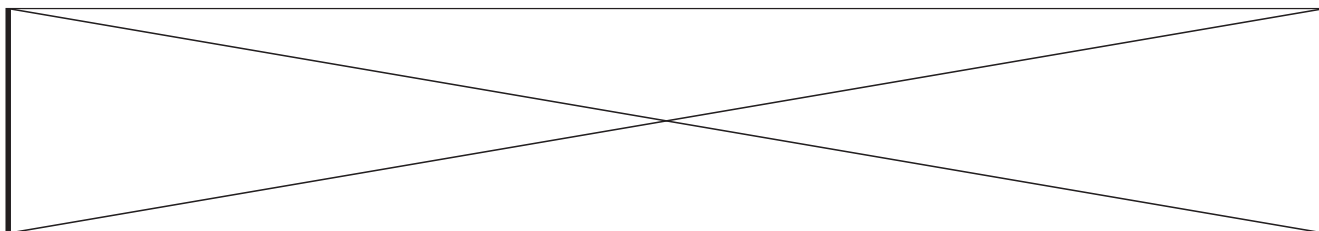
Here, <width> is an optional length parameter for the table width. This only works if at least one of the columns is defined with an elastic width, e. g., by using the X type (see below). If this parameter is omitted the table's width will either be it's natural width if there is no X-column, otherwise the local value of \linewidth.

<cols> stands for the column declaration. The possible values of column declaration elements are essentially the same as those of the standard tabular environment. Please note that the @{} strings at either end of the <cols> string used mandatorily in the previous *Ann. Phys.* LaTeX class are now forbidden. Column declaration strings consist at least of one or more of these essential elements:

– r, c, l: The contents of cells in columns declared by one of these are aligned flush right, centered, or flush left, respectively. They do not wrap around, though; to do this, see X[…] columns below.
– p{<len>} declares a column of width <len> in which each cell is formatted inside a paragraph box, thus being able to hold more than one line of text.

– X: This can be viewed as an all-purpose long text column specification. X-column declarations can have a couple of optional parameters in brackets:
  • Positive or negative *relative width factors.* For example, the column format string X[5]X[2] yields two columns which widths have a ratio of $5:2$; so the first column will be $\frac{5}{5+2}\big/\frac{2}{5+2} = 2.5$ times as wide as the second one. Negative Factors work the same way but control only the *maximum* column width; if the column has some natural width smaller than that value, the column will have just th natural width.
  • *Horizontal alignment specifiers,* one of r, c, l, j, R, C, L, or J. These switch the text adjustment to flush**r**ight, **c**entered, flush**l**eft, or **j**ustified, respectively, where with the upper-case versions the respective ragged2e mode is used.
  • *Vertical alignment specifiers,* one of p (default), m, or b. Those rule the vertical alignment of the column text blocks in the same row in the same way as the respective column specifiers in basic LaTeX2_ε tables do.
  • *Mathematical environment specifiers.* These are shorthands for basic maths environments inside: X[$] makes a math X column (same as >{$}X<{$}), while X[$$] makes a display math X column (same as >{$\displaystyle }X<{$}).

X columns can be spanned with \multicolum and can contain any type of tabular, tabular*, tabularx, or tabu sub-environment.

There are even more column types; please see the respective documentation of the tabu package for more information.

<caption> represents the usual caption text, and <label> stands for the symbolic label of this table, see Sect. 2.8.

The following example code . . .

```
Table~\ref{tab:two} shows an example.
\begin{table}[h]
  \centering
  \begin{andptabular}[0.83\linewidth]{X[−10]X[c]X[c2]X[c3]}{
        Example of a well organized floating table.}
    \label{tab:two}
    & One & Two & Three\\
    First Line & 1 & 2 & 3\\
    Second Line & 2 & 4 & 6\\
  \end{andptabular}
\end{table}
```

. . . yields this:

Table 3 shows an example.

Table 3 Example of a well organized floating table.

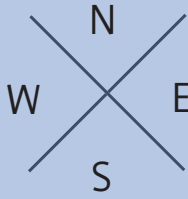|	One	Two	Three
First Line	1	2	3
Second Line	2	4	6

2.6.2 Free-form tables

Every now and then one has material that will not really fit into some "normal" tabular. For special tabular material we provide the andptabbox environment:

```
\begin{table}
  \begin{andptabbox}[<width>]{<caption>}
    ...
  \end{andptabbox}
\end{table}
```

Here you can insert almost any code; it's basically a box with a caption. Use this for free-style tabular material. Table 4 shows an example.

Table 4 Example of a freeform table.

2.6.3 The \multicolumn problem

Due to the method the colored lines are put into the tables there shows up a row color mismatch when trying to use \multicolumn[1]. A piece of code like this:

```
\begin{andptabular}{X[2]*3{X[C]}}{Problem.}
  \label{tab:mcprob}
  & \multicolumn{3}{c}{Numbers} \\
  First Line & 1 & 2 & 3\\
  Second Line & 2 & 4 & 6\\
  Multicolumn Line & \multicolumn{3}{c}{more Numbers}\\
\end{andptabular}
```

. . . yields that:

Table 5 Problem.

	Numbers		
First Line	1	2	3
Second Line	2	4	6
Multicolumn Line		more Numbers	

Here is a workaround: just specify the cell color inside the \multicolumn to coincide with the local row color. *Ann. Phys.* tables use two alternating row colors called tablebgI (the darker one, lines 1,3,5,. . .) and tablebgII (the lighter one, lines 2,4,6,. . .). Putting the following convenience lines into the preamble of your document . . .

```
\newcolumntype{1}{>{\cellcolor{tablebgI}}}
\newcolumntype{2}{>{\cellcolor{tablebgII}}}
```

---

[1] This is a quite long-standing problem resulting from the inner workings of LaTeX's tabular (and array) environments. Due to the simplified, row-oriented structure of *Ann. Phys.* tables and the advanced capabilities of the tabu package one should probably consider avoiding multi-column constructions at all.

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… you would just insert those additional columnspecifiers into the \multicolumn declaration to adjust the cell color. Here are the working versions of the respective lines from the problematic tabular above:

```
...
& \multicolumn{3}{1c}{Numbers} \\
...
Multicolumn Line & \multicolumn{3}{2c}{more Numbers}\\
...
```

So:

Table 6 The Workaround.			
	Numbers		
First Line	1	2	3
Second Line	2	4	6
Multicolumn Line		more Numbers	

2.7 Utility commands

andp2012 provides for some utility macros and shortcuts.

```
\textsubscript{...}
```

Complementing \textsuperscript, this command should be used to typeset indices etc. in text mode.

```
\textDegree
\textCelsius
```

These provide for some unit names for usage in text mode. \textDegree gives a degree sign (that small superscript circle – no, that's nor "o" neither "0"), and \textCelsius combines that to the common centigrade sign. Both macros take themselves care of their spacing, so they shall be used without leading whitespace. Any empty group {} or explicit blank afterwards is also unnecessary but shouldn't harm, either; see Table 7. There are occasions where this whitespace management might lead to problems, so these less automatic versions are provided:

```
\textdegree
\textcelsius
```

2.8 Referring

Inside articles one often refers to other parts of it, e. g., some section, subsection, equation, figure, table, list item, or other numbered element. At least while the article is edited by the author(s), the numbering tends to change

Table 7 Various types of degrees.		
	Input	**Output**
Right:	42\textDegree left	42° left
Wrong:	42\,\textDegree left	42 ° left
Right:	42\hot	42 °C hot
Wrong:	42~\hot	42 °C hot

somewhat. So, instead of writing the respective number(s) verbatim into the text (and having to keep track of them oneself) one better uses symbolic referrers being managed automatically by LaTeX.

Elements being referred have to be *labelled*. So, one has to give the macro \label{...} right after (for environments: inside) the element to be pointed to; e. g.,

```
\section{...}
\label{sect:something}
... see~\ref{sect:something}
on page~\pageref{sect:something}.
Also see Eq.\,\eqref{eq:useless} below.
```

Please note: \ref and \pageref insert the *reference counter* of the element referred to and the *page number* where it (to be exact, the \label macro) appears, respectively, into the text. \eqref works like \ref except that it wraps its output automatically in parenthesis: Equation #1 (below) is to be called "Eq. (1)". Labels are always typeset upright.

2.9 Mathematics

Formulæ shall preferentially be typeset using the equation environment, which guarantees automatic numbering of the formulæ. The use of labels is strongly recommended, again; see above for more on this.

$$\int_{-\infty}^{\infty} \det x \, \mathrm{d}x = \sum_{n=-a}^{a} \log\left(\mathbf{x} + \sqrt[\sin x]{n}\right). \tag{1}$$

Punctuation of displayed math should be done in the same way as ordinary text, but please separate the punctuation mark with a small space \, as it is done in Eq. (1) above:

```
\begin{equation}
  \label{eq:useless}
  \int_{-\infty}^{\infty} \det x \,\mathrm{d}x =
  \sum_{n=-a}^{a} \log \left(\vec{x} + \sqrt[\sin x]{n} \right)\,.
\end{equation}
```

In math mode LaTeX treats each single letter as a variable token; hence those are typeset in *math italics*.

Names of common mathematical functions, such as log, sin, exp, max, sup … which shall be typeset in roman are to be input using their macro representation, e. g., \log, \sin, \exp, \max, \sup etc.

In order to distinguish "d" used as the *differential sign* and "e" used as the *exponential function* from normal variables, set these letters in roman if used in this context.

Also, any textual elements within display formulæ should appear in roman. That is accomplished using the \mathrm{...} command for that. The same applies to textual labels and abbreviations within mathematical subscripts and superscripts, e. g.,

`$T_{\mathrm{eff}} = 5 \times 10^{9}$K`

which produces $T_{\mathrm{eff}} = 5 \times 10^9$K. However, do not use roman if the subscripts or superscripts represent variables, e. g. $\sum_{i=1}^{n} a_i$.

In math mode every single letter token gets interpreted and kerned as a variable by itself. To circumvent this if you want to use multi-letter variable names, say,

$$mass = \frac{force}{acceleration},$$

enclose these in \mathit{...}:

```
\begin{equation*}
  \mathit{mass}=\frac{\mathit{force}}{\mathit{acceleration}}\,,
\end{equation*}
```

Please ensure that *physical units* (e. g. K, cm^3, m s^{-2}) are always set in roman type with an appropriate interword spacing. If many units are used, employing the siunitx package is recommended. It provides a set of tools for authors to typeset numbers and units in a consistent way and includes automated processing of numbers and units, and the ability to control tabular alignment of numbers.

Chemical symbols and formulæ should be set in roman, e. g. Fe (not *Fe*), H_2O (not H_2O).

A minus-sign shall nevertheless be set between \$-signs and not just as a dash, otherwise it will not be recognized as a mathematical symbol: $\exp i\pi = -1 \notin \{$-1,–1,—1$\}$.

2.10 Lists

Standard LaTeX list making environments come in three basic flavours:

Itemized lists where each entry is preceded by some mark:
- First entry.
- Second entry.

Enumerated lists where the entries are numbered consecutively:

1. First entry.
2. Second entry.

Lists of descriptions like this one.

Lists can be nested up to six levels deep (with a maximum of four of the same kind), although for better oversight one should avoid nesting more than two levels if possible.

Thanks to the paralist package andp2012 has a couple of additional list environments. The asparaenum, asparaitem, and asparadesc environments format its entries as separate paragraphs with a preceding number, symbol, or tag:

1. This is the first item of an asparaenum list with a bit of text to give a real paragraph. Lorem ipsum ad qui amet dolore, vitae cetero quaerendum mel ea. Facilis fastidii duo no.
Second paragraph of the first item. Viris partiendo ius no, alia animal nam at.
2. Second item. Fugit suavitate ad eam, ut essent debitis cum. Cu duo iudico instructior.

– This is the first item of an asparaitem list with a bit of text to give a real paragraph. Lorem ipsum ad qui amet dolore, vitae cetero quaerendum mel ea. Facilis fastidii duo no.

– Second item. Fugit suavitate ad eam, ut essent debitis cum. Cu duo iudico instructior. Sea te choro perfecto, per eu meis nonumy percipit.

This is the first item of an asparadesc list with a bit of text to give a real paragraph. Lorem ipsum ad qui amet dolore, vitae cetero quaerendum mel ea. Facilis fastidii duo no.

Second item. Fugit suavitate ad eam, ut essent debitis cum. Cu duo iudico instructior. Sea te choro perfecto, per eu meis nonumy percipit.

For even smoother embedding of lists into continuous text there are inpara… variants: 1. This is the first item of an inparaenum list. 2. Second item.

– This is the first item of an inparaitem list. – Second item.

This is the first item of an inparadesc list. **That** is the second item of the same type of list.

For more information on this please see the documentation of the paralist package.

2.11 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.

2.12 Citations

Literature citations in the text are represented as compressed, sorted lists of numerical citations in square brackets.

All sources cited in the text (including work in progress) must appear in the bibliography section at the end of the paper and vice versa all entries in the reference section should be cited in the text.

2.13 Making bibliographies using BibTEX and andp2012.bst

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

Optionally, you may generate your bibliography using BibTEX, with the bib-style-file andp2012.bst from the template package in your LATEX search path. To this end, replace the example database-file andp.bib with your own existing one(s), or alternatively use it as a template for generating your new database. The following code in your manuscript source file enables BibTEX-functionality:

```
\bibliographystyle{andp}
\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.

3 General recommendations

We recommend to pay attention to the following general instructions in order to avoid some common errors or inconsistencies:

– Acronyms and abbreviations should be spelled out the first time they are used unless they are common throughout the discipline. Terms defined in the abstract should be defined independently in the main text.

– Standard abbreviations for SI units (e. g., m, km, mm) or natural units (e. g., parsec, cm) should be used. If English units such as inches or pounds per square inch are used, metric equivalents should be given in parentheses.

– In text, a sentence should not begin with a symbol or number. If that can't be avoided, reference tags have to be preceded by the word "Reference".

– In a series of three or more items, a comma should be used to separate each item, and a comma is used before the last two items in the series, e. g., *space, time, and matter*.

– The word *data* is plural and therefore takes a plural verb.

References

[1] A. B. Firstauthor, C. D. Secondauthor, and E. Lastauthor, Abbreviatedjournalname **volume**, page (year).

[2] X. Ample and A. N. Other, Laser Phys. Rev. **1**, 111 (2050).

[3] A. Firstauthor, B. Secondauthor, and C. Thirdauthor, The Title of the Book (Publisher, City, year), p. 111.

[4] A. Firsteditor, B. Secondeditor, and C. Thirdeditor (eds.), The Title of the Edited Book (Wiley-VCH, Berlin, 2050), p. 222.

[5] D. Contributor, in: The Title of the Edited Book, edited by A. Firsteditor and B. Secondeditor, Title of the Series of Books [if any], volume number [if any] (Publisher, City, year), chap. 1.

[6] A. Nother, Proceedings of the 42nd Great Big Conference on Citation Formatting, Somewhere City, Country, Year, Part A (Publisher, City, year), pp. 1–11.

The input text of this document so far

Here we show the essential parts of the source code of this article. Please do not take this code as a template for your own article input, as we did some *serious tweaking* here. This is meant just as a reference on the correct input form of certain text elements such as names, figures, tables, and others. For your convenience, this package provides annotated as well as un-annotated two-column and three-column article template files.

```
1    %%% AdP 2012
2    %%%
3    %%% This is the source code of the Annalen der Physik Author's Guide.
4    %%% Use with caution.
5    %%% −MWL−, 2012−05−10
6    %%%
7    \documentclass[hyper,final]{andp2012}%
8    \usepackage[applemac]{inputenc}%
9    % \setcopyrightyear{2012}%
10   % \setyear{2012}%
11   % \DOIprefix{10.1002}%
12   % \DOIsuffix{andp.201100133}% nach received/revised, >= 2003! %
13   %%%
14   % \Volume{524}%
15   % \Issue{1}%
16   % \Month{1}%
17   % \Year{2012}%
18   % \pagespan{1}{}%
19   \category{Author's guide}%
20   \shortabstract%
21   %%%
22   \begin{document}
23   % ~\newpage
24   % \titlefigure{empty}
25   \begin{abstract}
26     This article gives instructions for authors of \emph{Annalen der Physik}
27     (\emph{Ann.\,Phys.}) how to prepare an article using the current \sfLaTeX\ class
28     \textsf{andp2012}.
29     The source code of this paper may be used as an instructive example; see
30     p.\,\pageref{sec:code} for a listing.
31     To ease the creation of new
32     \emph{Annalen der Physik} papers this package also contains commented two− and
33     three−column template files named \textsf{andp−template−2column.tex} and
34     \textsf{andp−template−3column.tex}, respectively. For further information
35     about the journal, its publisher, editorial staff and author guidelines please
36     visit the journal homepage at \href{http://www.ann−phys.org}{www.ann−phys.org}
37     where the package can be obtained~from.
38   \end{abstract}
39
40   \title[Author's guide for the \emph{Ann.\,Phys.} \sfLaTeX\ class]%
41   {Author's guide for the \emph{Annalen der Physik} \sfLaTeX\ class}
42
43   \author[M.\,W. Leidig]{Martin Wilhelm Leidig}
44   % \author{First Author\inst{1}}
45   % \author{Second Author\inst{2}\fnmsep\footnote{Corresponding author\quad E−mail: second.author@example.org}}
```

```
46
47   % \shortauthors{F. Author and S. Author}
48   % \mail{\email{}}
49
50   % \address[\inst{1}]{First Institute}
51   % \address[\inst{2}]{Second Institute}
52
53   % \keywords{List of comma—separated keywords, first one capitalized,
54   % all others, except Names, in lower case, period.}%
55
56   \maketitle
57
58   \section{Introduction}
59   \label{sec:intro}
60
61   In order to ensure that papers received for publication from different
62   authors are consistent in format, style, and quality, authors are
63   asked to prepare their manuscripts according to the following
64   instructions. The editors will modify the electronic manuscripts if
65   necessary to ensure that they conform to these standards.
66
67   Final pre—print and print issues of the paper will be typeset using the Utopia
68   Expert and FF~Profile~Pro script families. Most fonts of these are commercial,
69   non—free fonts that are unlikely to be installed on the average computer, so as
70   long as the class option (see below) \lstinline+final+ is \emph{not} given, this
71   \LaTeX class uses the free subset of the Utopia family along with the basic free
72   Helvetica and Courier (clone) fonts. Please keep in mind that the metrics of the
73   fonts used in draft are quite different from the final fonts, so there will be
74   differences concerning the text make—up and (probably) the float placement.
75   Consequently, please don't waste your time and energy by considering the make—up
76   of your article too much because this is taken care of by the editor(s) anyway.
77
78   To cut a long story short: the less tricks you put in, the less have to be
79   removed or altered. Thank you!
80
81   To give you an idea of the optical difference, this paper is typeset using the
82   class option \lstinline+final+, thus using the non—free scripts mentioned above.
83
84   \section[]{\sfLaTeX\ markup}
85   \label{sec:markupcmd}
86
87   Authors using \LaTeX\ are requested to use the \textsf{andp2012} document class.
88   It is based on \TeX\ version 3.1415926 and \LaTeXe, hence formul\ae{} and text
89   are typed using the common \LaTeX\ commands.
90
91   \subsection{What is needed}
92   \label{ssec:whatisneeded}
93
94   The \LaTeX\ package \textsf{andp2012} consists of
95   \begin{compactitem}
96
97       \item the class file \textsf{andp2012.cls},
```

```
98
99       \item the Bib\TeX\ style \textsf{andp2012.bst},
100
101      \item this Author's guide \textsf{\jobname.pdf}, and
102
103      \item the \LaTeX\ source of a couple of template files to ease the generation of papers:
104      \begin{itemize}
105        \item \textsf{andp−template−2column.tex} and
106        \item \textsf{andp−template−3column.tex}.
107      \end{itemize}
108      These \emph{can not} be run through \LaTeX\ unmodified, though.
109      Please read \emph{carefully} the comments inside.
110      There are uncommented versions for the \LaTeX− and \textsf{andp2012}−savvy:
111      \begin{itemize}
112        \item \textsf{andp−template−2column−uncommented.tex} and
113        \item \textsf{andp−template−3column−uncommented.tex}.
114      \end{itemize}
115   \end{compactitem}
116
117   An archive containing these is available via the journal homepage
118   (\href{http://www.ann−phys.org}{http://www.ann−phys.org}) or on request via
119   e−mail from the editor~(\href{mailto:ann−phys@wiley−vch.de}{ann−phys@wiley−vch.de}).
120
121   By the way, URLs in this document are active; you can click them to go to the
122   respective web location.
123
124   \subsubsection{Additional packages}
125
126   \textsf{andp2012} uses a number of utility packages which should be present in
127   any up−to−date \LaTeXe\ distribution, e.\,g., all being based on
128   \TeX{}live\,2011 or newer, see the \href{http://www.tug.org/texlive/index.html}{download site}.
129   Additionally, a few quite new packages are used which are not part of
130   \TeX{}live\,2011 (may be just not yet in the version needed). Please make sure
131   you have (or get) a version with at least the version number shown~below.
132   \begin{compactdesc}
133
134      \item[tabu 2.8] by Florent Chervet provides an universal tabular environment
135      (by the name \textsf{tabu}) which the \textsf{andp2012} table environment is
136      constructed upon. The package is available for download at
137      \url{http://mirror.ctan.org/macros/latex/contrib/tabu.zip}.
138
139      \item[mdframed 1.5] by Marco Daniel and Elke Schubert provides framed environments
140      that can split at page boundaries. The package is available at
141      \url{http://mirror.ctan.org/macros/latex/contrib/mdframed.zip}.
142
143      \item[adjustbox 0.8] by Martin Scharrer provides several macros to adjust textual
144      content in the same way the \textsf{graphicx} package does with graphics. The
145      package is available at
146      \url{http://mirror.ctan.org/macros/latex/contrib/adjustbox.zip}.
147
148      \item[picins] is a fairly old package by Joachim Bleser. It provides means to
149      wrap text of around inserted material. The package is included in Mik\TeX\ and
```

```
150    available at \url{http://mirror.ctan.org/macros/latex209/contrib/picins.zip}.

151

152  \end{compactdesc}

153

154  \subsubsection{Installation}
155  The files \textsf{andp2012.cls} and \textsf{andp2012.bst} have to be placed
156  where \TeX\ can find them during typesetting. The same goes for the packages
157  mentioned above (please note that for those, you might have to prepare the final
158  \textsf{.sty} file(s) first. Please consult the respective package documentation
159  first).

160

161  A typical location for that would be your
162  \emph{local \textsf{texmf} folder.} Please consult the documentation of your
163  \TeX\ distribution and/or environment where to find it.
164  Table~\ref{tab:localtexmf} shows a couple of examples for different operating~systems.

165

166  \begin{table}[ht]
167    \begin{andptabular}{X[−1]X}{Typical places for the local \textsf{texmf} folder.
168      ''\textasciitilde'' stands for your home folder.
169      \label{tab:localtexmf}}
170      OS/\TeX\ environment & Path\\
171      Windows/Mik\TeX{} & \textsf{C:\textbackslash Local TeX Files} (see also the
172      \href{http://docs.miktex.org/manual/texfeatures.html\#includedirectory}{specific
173      section} of the Mik\TeX\ manual)\\
174      Mac\,OS\,X/\TeX{}live & \textsf{\textasciitilde/Library/texmf}\\
175      Linux & \textsf{\textasciitilde/texmf} \quad \textit{or} \quad \textsf{\textasciitilde/.texmf}\\
176    \end{andptabular}
177  \end{table}

178

179  \subsection{The Preamble}
180  \label{ssec:preamble}

181

182  The very first piece of markup in the manuscript declares the \emph{class of the
183  document}. This is achieved by the \lstinline"\documentclass" command which
184  starts any \LaTeX\ document. Please note that in the following lists several
185  commands normally appearing on \emph{one} line are broken due to the column
186  width; this is neither necessary nor advisable in the real \LaTeX~file.
187  \begin{lstlisting}
188    \documentclass{andp2012}
189  \end{lstlisting}
190  This specifies the document class to be \textsf{andp2012}. For two−column
191  articles to be submitted no additional \emph{class options} are needed. This
192  basic mode suppresses the publisher's logo and ensures that Helvetica (or one of
193  it's free clones) is used instead of the non−free Profile\,Pro.

194

195  \begin{lstlisting}
196    \documentclass[threecolumn]{andp2012}
197  \end{lstlisting}
198  Material to be submitted for the three−column section should be switched to the
199  respective mode by giving the \lstinline+threecolumn+ option. Please note that in
200  this mode the columns are balanced on the last page; if for any purpose one
201  wants to switch off that this is achieved by giving the
```

202 \lstinline+threecolumnunbalanced+ option.

203

204 \subsection{The heading section}
205 \label{ssec:headsec}

206

207 \subsubsection{Title, author(s), abstract, etc.}
208 \label{sssec:title}

209

210 The \LaTeX\ commands described here define the heading section. Most
211 of them are optional, that is, they only have to be given if needed.
212 On the other hand, most of them \emph{are} needed in most articles.
213 The information for the title page has to be placed before
214 \lstinline+\maketitle+ which processes these informations. The
215 order of most title entries is determined by the class file and can not be changed
216 by rearranging these macros.

217

218 \begin{lstlisting}
219   \category{}
220   \subcategory{}
221 \end{lstlisting}
222 Category and subcategory of an article are given here. In three−column context
223 the \lstinline+\subcategory+ command is mandatory, in two−column context it is
224 optional and serves as a pretitle. \TeX{}nically, both commands are optional; if
225 omitted, the vertical category mark at the page edge remains empty, and the
226 subcategory entry simply won't appear. For most three−column papers, the correct
227 category entry would be ''Physics Forum'', while for two−column papers it would
228 be either ''Review Article'' or ''Original Paper''. If you are not sure what to
229 insert, please leave that to the~publisher.

230

231 \begin{lstlisting}
232   \title[]{}
233   \subtitle{}
234 \end{lstlisting}
235 Here, the main and running titles are to be given. If only the mandatory
236 argument of the \lstinline+\title+ command is used it will set the running title
237 too; otherwise, if the article's main title text (plus the possibly long author
238 names) is too long for the running page head you should give a shorter one using
239 the optional argument.

240

241 There is also an optional \lstinline+\subtitle+ command which inserts
242 exactly that. This subtitle will appear on the title page only, not in the
243 running~head.

244

245 \begin{lstlisting}
246   \titlefigure[height=...]{<file name>}
247 \end{lstlisting}
248 This macro declares the file name of some title picture to be typeset on the top
249 right of the title page, beside the titling information, but above the abstract
250 and main text. This is optional, so if you don't want a picture here, just omit
251 this line.

252

253 Internally, the figure is handled by the \lstinline+graphicx+ package, so you can

254 modify the picture's appearance by using any it's key−value pairs. By default
255 \lstinline+with=\linewidth+ is given, so if there is no optional argument, the
256 figure will be inserted as wide as one text column.
257
258 \begin{lstlisting}
259   \begin{abstract}
260   ...
261   \end{abstract}
262   \shortabstract
263 \end{lstlisting}
264 The abstract text is to be declared in this environment.
265
266 In two−column context it will appear in a coloured box one or two columns wide.
267 If the abstract text fits nicely in one column it should be typeset that way.
268 This is achieved by giving the \lstinline+shortabstract+ directive somewhere in
269 the preamble. If you are in doubt if it will fit once the final typefaces,
270 figures, and corrections are applied please leave that decision to the editor.
271 The wide form of the abstract box will fill both columns, the narrow form will
272 appear on top of the left text column.
273
274 In three−column context the abstract text will appear without a box, but
275 boldfaced and side−wide in one column. Clearly, text this broad will not very
276 easyly readable, so this is meant for some occasional punch line of some sort.
277
278 \begin{lstlisting}
279   \author[]{}
280 \end{lstlisting}
281 Please name all authors, enclosing each name in one \lstinline+\author+
282 declaration. Please make sure to insert the long form of the name in the
283 mandatory argument and the abridget one in the optional argument, as described~below.
284
285 In three−column articles the \emph{sequence} of author names and addresses at the
286 article end is identical to the sequence of the respective \lstinline+\author+ and
287 \lstinline+\address+ macros here:
288 \begin{lstlisting}
289   \author[F. Author]{First Author}
290   \address{Affiliation and address of First Author}
291   \author[S.\,X. Author]{Second X. Author}
292   \author[T.\,Y. Author]{Third Y. Author}
293   \address{Affiliation and address of Second X. Author and Third Y. Author}
294 \end{lstlisting}
295 E−mail addresses of authors are given as part to the respective address entry.
296 Note that in this form \lstinline+\inst+ is not used at all.
297
298 In two−column mode the sequence of author names and addresses in the article
299 title page mirrors to the sequence of the respective \lstinline+\author+ and
300 \lstinline+\address+ macros. They don't have to be intertwined as in
301 three−column mode, though. The correspondence between author names and (probably
302 multiple) affiliations is shown using numerical tags in \lstinline+\inst+
303 directives and corresponding numerical arguments of the \lstinline+\address+
304 declarations, respectively:
305 \begin{lstlisting}

```
306    \author[F. Author]{First Author\inst{1,}%
307    \footnote{Corresponding author\quad E−mail:~\textsf{firstauthor@example.org}}}
308    \author[S.\,X. Author]{Second X. Author\inst{2}}
309    \author[T.\,Y. Author]{Third Y. Author\inst{2}}
310    \address[1]{Affiliation and address of First Author}
311    \address[2]{Affiliation and address of Second X. Author and Third Y. Author}
312 \end{lstlisting}
```

Multiple tags are to be separated by ",'' (without any surrounding spaces). If there is just one affiliation address the numbers should be omitted.

Note, that here the E−mail addresses of the corresponding author is given as a footnote to the respective name. There might be more than one E−mail address as well. If there is just one author the part before "E−mail" should be dropped.

One can also provide the list of abbreviated names for the column title using \lstinline+\shortauthors+; if there are more than two authors to an article, this becames mandatory.

```
323 \begin{lstlisting}
324    \shortauthors{}
325 \end{lstlisting}
```

Two author names are separated by "and" without a leading comma. If there are more than two authors, please put the first author's name with a trailing "et al." into the running head. Here are the schemes for one, two, and more than two authors, respectively:

```
330 \begin{compactitem}
331    \item F. Author
332    \item F. Author and S. Author
333    \item F. Author et al.
334 \end{compactitem}
```

```
336 \begin{lstlisting}
337    \keywords{}
338 \end{lstlisting}
```

Give some keywords for the article, if you have. All words should be downcased except the first one, names, acronyms and so~on. The keyword entries are separated by commas and the whole sequence has to end with a period.

If one wishes to have an acknowledgements section, the \lstinline+acknowledgements+ environment will do. The text of the acknowledgements will be typeset at the end of the main article, as part of the article informations preceding (and produced by) the biography~block. Here is an example:\label{exa:ack}

```
349 \begin{lstlisting}
350    \begin{acknowledgements}
351       Insert your acknowledgements here.
352    \end{acknowledgements}
353 \end{lstlisting}
354 \begin{acknowledgements}
355    Insert your acknowledgements here.\\
356    Please see p.\,\pageref{exa:ack} for the input code of this.
357    \label{exa:ack−out}
```

```
358  \end{acknowledgements}
359  Please see p.\,\pageref{exa:ack−out} for the output of~this.
360
361  \subsubsection{Editorial information}
362  \label{sssec:ed−inf}
363
364  There are a couple of commands intended for specification of editorial or
365  publication data:
366  \begin{lstlisting}
367    \setcopyrightyear{2012}%
368    \DOIprefix{10.1002}%
369    \DOIsuffix{andp.201100xxx}%
370    \Volume{524}%
371    \Issue{}%
372    \Month{}%
373    \Year{2012}%
374    \Day{1}
375    \pagespan[A]{}{}%
376    \Receiveddate{}
377    \Reviseddate{}
378    \Accepteddate{}
379    \Dateposted{}
380  \end{lstlisting}
381  \emph{Please ignore these.} They will be completed by the publisher, as soon as
382  possible and as far as needed. The respective code lines are commented in the
383  template file and should be left in this~state.
384
385  \subsubsection{Producing the title page}
386  \label{sssect:proc−title}
387
388  By now the commands declaring heading elements are described. The following
389  command assembles all that information and produces the article title:
390  \begin{lstlisting}
391    \maketitle
392  \end{lstlisting}
393  It is the only command described by now that
394  \emph{must} be used after the \lstinline+\begin{document}+ command; it is
395  advisable, though, to put all of those between
396  \lstinline+\begin{document}+ and \lstinline+\maketitle+ because there might be
397  some adjustment to some (probably internal) detail being tied to
398  \lstinline+\begin{document}+ that would be missed if the declaration using
399  this detail were in the preamble.
400
401  \subsection{Sectioning}
402  \label{ssec:sect}
403
404  The \textsf{andp2012} class supports four levels of sectioning:
405  \begin{lstlisting}
406    \section{Title of section}
407    \subsection{Title of subsection}
408    \subsubsection{Title of subsubsection}
409    \paragraph{Title of paragraph}
```

```
410  \end{lstlisting}
411  which would result in the following output, if given at the begin of an~article:
412  %%%
413  \edef\oldsct{\arabic{section}}\setcounter{section}{0}
414  \edef\oldssct{\arabic{subsection}}\setcounter{subsection}{0}
415  \edef\oldsssct{\arabic{subsubsection}}\setcounter{subsubsection}{0}
416  %%%%
417  \section{Title of section}
418  \subsection{Title of subsection}
419  \subsubsection{Title of subsubsection}
420  \paragraph{Title of paragraph}
421  %%%
422  \setcounter{section}{\oldsct}
423  \setcounter{subsection}{\oldssct}
424  \setcounter{subsubsection}{\oldsssct}
425  %%%
426  \textit{Text \ldots}
427
428  \bigskip
429
430  These commands delimit sections by marking their \emph{beginnings},
431  respectively; there are no separate commands to identify the \emph{ends.} The
432  titles of sections and subsections are capitalized only in the first word,
433  except for proper names, designations, and acronyms.
434
435  Appendices are started by the \lstinline+\appendix+ command. \emph{This is a
436  command, not an environment.} They are sectioned as above but sections will be
437  "numbered" with capital letters A, B, C,~\ldots.
438
439  \subsection{Figures}
440  \label{ssec:figs}
441
442  The formats of choice for author's graphics are EPS (Encapsulated PostScript) and PDF (Portable Document
443  Format). Other formats like PNG
444  (Portable Network Graphics), TIFF (Tagged Image File Format), PSD
445  (PhotoShop Document), and generally all common formats are also
446  accepted. Please make sure, that your pictures meet the
447  following~criteria:
448  \begin{compactitem}
449     \item All fonts used in PDF or [E]PS documents must be embedded, not
450     just referenced. Otherwise picture content might be altered or
451     rendered differently in typesetting and/or print. This applies
452     also to ubiquitous fonts like Times, Helvetica, Arial and
453     the~like.
454
455     \item Images should have tight \emph{bounding boxes}, that is, empty
456     (white or transparent) areas around the actual pictorial content
457     should be as small as feasible. Also, decorative frames around
458     pictures should be omitted at~all.
459
460     \item The resolution of raster pictures should be at least 300\,dpi; for
461     mostly white graphics with thin lines in it (so-called \emph{line
```

```
462  graphics} such as diagrams, curves and so on, a value of 1200\,dpi
463  is appropriate. So, if you want a particular picture to
464  be typeset at a particular width you should provide it with at
465  least the proper width in pixels. Here are some comparative figures:
466
467  \smallskip
468
469  % \begin{table}[h]
470  \begin{andptabular}{lcc}{Width in pixels for column− and text−wide figures for different resolutions.}
471      Image width in print
472      & 300\,dpi& 1200\,dpi\\
473      column (85\,mm) & 1004 & 4016 \\
474      page (175\,mm) & 2067 & 8268 \\
475  \end{andptabular}
476  % \end{table}
477
478  \bigskip
479
480  Please note that the height of characters and digits inside pictures in the
481  finally printed manuscript should roughly be the same as in the text.
482
483  \item Please avoid sending images in uncommon, unsuitable, and/or proprietary
484  formats like PPT (PowerPoint), Excel spreadsheets, Windows metafile
485  (WMF, EMF, XMF) and the like.
486
487  \end{compactitem}
488  %
489  %
490  The standard width of a figure in \emph{Ann.\,Phys.} is equal to the width of one
491  column. The figure caption is set below the figure. The standard way for inclusion of a
492  picture file looks like this:
493  %
494  \begin{lstlisting}
495      \begin{figure}
496          \includegraphics*[width=<wd>]{<name>}
497          \caption{<caption>}
498          \label{<label>}
499      \end{figure}
500  \end{lstlisting}
501  %
502  \begin{figure}% fig. 1
503      \includegraphics*[width=\linewidth,height=30mm]{empty}
504      \caption{This is a figure over one column.
505      Use the \textsf{\{figure\}} environment for this.
506      The caption of a figure shall describe the content of the figure.
507      An exception is granted only to the editor of \emph{this} text, which
508      demonstrate the usage of this~command.}
509      \label{fig:1}
510  \end{figure}%
511  %
512  \begin{figure*}% fig. 2
513      \sidecaption
```

```
514    \includegraphics*[width=.67\textwidth,height=39mm]{empty}
515    \caption{%
516    A figure wider than one column.
517    Use the \textsf{\{figure*\}} environment for this.%
518    \vskip 31mm
519    }
520    \label{fig:2}
521  \end{figure*}%
522  %
523
524  \begin{figure*}% fig. 3
525    \twocolcaption
526    \includegraphics*[width=\textwidth,height=30mm]{empty}
527    \caption{%
528    A page−wide figure (using the \textsf{\{figure*\}} environment).
529    In order to show the two−column caption feature we need a bit of filler text,
530    so here we go:
531    Lorem ipsum ad qui amet dolore, vitae cetero quaerendum mel ea. Facilis
532    fastidii duo no. Viris partiendo ius no, alia animal nam at. Feugait imperdiet
533    ius an, no quis facer lucilius vis. Aliquam saperet contentiones ex pro, id
534    idque offendit ius. Fugit suavitate ad eam, ut essent debitis cum. Cu duo
535    iudico instructior. Sea te choro perfecto, per eu meis nonumy percipit. Ut mea
536    sint constituam, cu pro impedit constituam.}
537    \label{fig:3}
538  \end{figure*}%
539  %
540  This is the form of the \lstinline+figure+ environment for figures
541  spanning up to column width. In this scheme, the items inside
542  \lstinline+<...>+ are placeholders:
543  \begin{compactitem}
544    \item \lstinline+<wd>+ is to be replaced with the intended picture
545    width in any \TeX{} length unit, e.\,g.
546    \textsf{82.5mm}, or as a multiple of some \TeX{} length register,
547    e.\,g., \lstinline+0.5\linewidth+. Here, a useful choice would be one of
548    \begin{compactitem}
549      \item the \emph{column} width \lstinline+\columnwidth+,
550      \item the \emph{text} width \lstinline+\textwidth+, or
551      \item the \emph{local} line width \lstinline+\linewidth+.
552    \end{compactitem}
553    If the figure is meant to appear with its original width, then the
554    whole optional argument (the sequence in square brackets) can be~deleted.
555
556    \item \lstinline+<name>+ is the name (without extension, e.\,g.,
557    \textsf{.eps}, \textsf{.pdf}, \ldots) of the picture file to be
558    included,
559
560    \item \lstinline+<caption>+ stands for the caption text to the figure
561    (see Fig.\,\ref{fig:1}), and
562
563    \item \lstinline+<label>+ should be replaced by some label, so that one can refer to
564    this figure, see Sect.\,\ref{ssec:refer}.
565  \end{compactitem}
```

566
567 For wider figures up to full text width
568 use the starred form:
569 %
570 \begin{lstlisting}
571   \begin{figure*}
572   % \twocolcaption
573   % \sidecaption
574   \includegraphics*[width=<wd>]{<name>}
575   \caption{<caption>}
576   \label{<label>}
577   \end{figure*}
578 \end{lstlisting}
579 The directives \lstinline+\twocolcaption+ and \lstinline+\sidecaption+ act as
580 modifiers to the format of the caption; at most one of them should be given.
581 Each of them should appear right after \lstinline+\begin{figure*}+ as seen~above.
582
583 If you have a substantially less than page—wide figure, you can use
584 \lstinline+\sidecaption+ to typeset the caption to the right of the figure. Make
585 sure that the caption text is not taller than the picture itself. If the figure
586 is output on top of a page the upper edge of the caption and the icture should
587 be at the same height; this can be achieved by insertion of some \lstinline+\vskip+ or
588 \lstinline+\vspace*+ as the last token inside the \lstinline+\caption{...}+.
589 See Fig.\,\ref{fig:2} on p.\,\pageref{fig:2} for an example.
590
591 By the way, please make sure that any \emph{floating material} like figures and tables
592 appears on or after the page where it is referenced first.
593
594 In the case of a page—wide figure the caption should be typeset in two columns
595 for better readability. Use\linebreak%%%%%%%%%%%%%%%%
596 \lstinline+\twocolcaption+ for that; see Figure~\ref{fig:3}.
597
598 \subsection{Tables}
599 \label{ssec:tabs}
600
601 \subsubsection{Standard tables}
602
603 Tables in \emph{Ann.\,Phys.} are a bit special as the are quite colorful with
604 alternating row colors and an integrated caption. So we supply equally special environments for that.
605
606 Standard tables shall be typeset without any rules inside. Vertical rules
607 should be used only in exceptional cases for the sake of clarity and
608 low visual~noise. Tables are normally input using the
609 \lstinline+andptabular+ environment:
610 %
611 \begin{lstlisting}
612   \begin{andptabular}[<width>]{<cols>}{<caption>}
613   ...
614   \end{andptabular}
615   \label{<label>}
616 \end{lstlisting}
617 %

618 Here, \lstinline+<width>+ is an optional length parameter for the table width.

619 This only works if at least one of the columns is defined with an elastic width,

620 e.\,g., by using the \lstinline+X+ type (see below). If this parameter is

621 omitted the table's width will either be it's natural width if there is no

622 \textsf{X}−column, otherwise the local value of \lstinline+\linewidth+.

623

624 \lstinline+<cols>+ stands for

625 the column declaration.

626 The possible values of column declaration elements are essentially the same as those of the

627 standard \lstinline+tabular+ environment.

628 Please note that the \lstinline+@{}+ strings at either end of the

629 \lstinline+<cols>+ string used mandatorily in the previous \emph{Ann.\,Phys.}

630 \LaTeX\ class are now forbidden. Column declaration strings consist at least of

631 one or more of these essential~elements:

632 \begin{itemize}

633

634   \item \textsf{r}, \textsf{c}, \textsf{l}: The contents of cells in columns

635   declared by one of these are aligned flush right, centered, or flush left,

636   respectively. They do not wrap around, though; to do this, see

637   \lstinline+X[...]+ columns below.

638

639   \item \lstinline+p{<len>}+ declares a column of width \lstinline+<len>+ in

640   which each cell is formatted inside a paragraph box, thus being

641   able to hold more than one line of~text.

642

643   \item \textsf{X}: This can be viewed as an all−purpose long text column

644   specification. \textsf{X}−column declarations can have a couple of optional

645   parameters in brackets:

646 \begin{itemize}

647

648   \item Positive or negative \emph{relative width factors.}

649   For example, the column format string \lstinline+X[5]X[2]+ yields two columns

650   which widths have a ratio of $5:2$; so the first column will be

651     $\frac{5}{5+2}\big/\frac{2}{5+2} = 2.5$~times as wide as the second one. Negative

652   Factors work the same way but control only the \emph{maximum} column width;

653   if the column has some natural width smaller than that value, the column

654   will have just th natural width.

655

656   \item \emph{Horizontal alignment specifiers},

657   one of \textsf{r}, \textsf{c}, \textsf{l}, \textsf{j}, \textsf{R},

658   \textsf{C}, \textsf{L}, or \textsf{J}. These switch the text adjustment to

659   flush\textbf{r}ight, \textbf{c}entered, flush\textbf{l}eft, or

660   \textbf{j}ustified, respectively, where with the upper−case versions the

661   respective \textsf{ragged2e} mode is used.

662

663   \item \emph{Vertical alignment specifiers},

664   one of \textsf{p} (default), \textsf{m}, or \textsf{b}.

665   Those rule the vertical alignment of the column text blocks in the same row

666   in the same way as the respective column specifiers in basic \LaTeXe\ tables~do.

667

668   \item \emph{Mathematical environment specifiers}.

669   These are shorthands for basic maths environments inside:

670 `    \lstinline+X[$]+ makes a math \textsf{X} column (same as \lstinline+>{$}X<{$}+), while`
671 `\lstinline+X[$$]+ makes a display math \textsf{X} column (same as \lstinline+>{$\displaystyle }X<{$}+).`
672
673 `    \end{itemize}`
674 `    \textsf{X} columns can be spanned with \lstinline+\multicolum+ and can contain`
675 `    any type of \lstinline+tabular+, \lstinline+tabular*+, \lstinline+tabularx+,`
676 `    or \lstinline+tabu+ sub−environment.`
677
678 `\end{itemize}`
679 `There are even more column types; please see the respective`
680 `\href{http://tug.ctan.org/pkg/tabu}{documentation of the \textsf{tabu} package}`
681 `for more information.`
682
683 `    \lstinline+<caption>+ represents the usual caption~text, and`
684 `    \lstinline+<label>+ stands for the symbolic label of this table,`
685 `    see~Sect.\,\ref{ssec:refer}.`
686
687 `The following example code \ldots`
688 `%`
689 `\begin{lstlisting}`
690 `    Table~\ref{tab:two} shows an example.`
691 `    \begin{table}[h]`
692 `        \centering`
693 `        \begin{andptabular}[0.83\linewidth]{X[−10]X[c]X[c2]X[c3]}{Example of a well organized floating table.}`
694 `            \label{tab:two}`
695 `            & One & Two & Three\\`
696 `            First Line & 1 & 2 & 3\\`
697 `            Second Line & 2 & 4 & 6\\`
698 `        \end{andptabular}`
699 `    \end{table}`
700 `\end{lstlisting}`
701 `%`
702 `\ldots\ yields this:`
703
704 `Table~\ref{tab:two} shows an example.`
705 `\begin{table}[h]`
706 `    \centering`
707 `    \begin{andptabular}[0.83\linewidth]{X[−10l]X[c]X[c2]X[c3]}{Example of a well organized floating table.}`
708 `        \label{tab:two}`
709 `        & One & Two & Three\\`
710 `        First Line & 1 & 2 & 3\\`
711 `        Second Line & 2 & 4 & 6\\`
712 `    \end{andptabular}`
713 `\end{table}`
714
715 `\subsubsection{Free−form tables}`
716
717 `Every now and then one has material that will not really fit into some`
718 `''normal'' tabular. For special tabular material we provide the \lstinline+andptabbox+ environment:`
719 `%`
720 `\begin{lstlisting}`
721 `    \begin{table}`

```
722        \begin{andptabbox}[<width>]{<caption>}
723            ...
724        \end{andptabbox}
725    \end{table}
726  \end{lstlisting}
727  %
728  Here you can insert almost any code; it's basically a box with a caption. Use
729  this for free—style tabular material. Table~\ref{tab:three} shows an example.
730
731  \begin{table}
732    \begin{andptabbox}[\linewidth]{Example of a freeform table.}
733        \label{tab:three}
734        \parbox[c][0.7\totalheight][c]{\linewidth}{%
735        \def\arraystretch{2}
736        \def\rotc#1{\rotatebox[origin=c]{45}{\makebox[0pt][c]{#1}}}%
737        \centering
738        \resizebox{42mm}{!}{\rotatebox{−45}{%
739        \begin{tabu}{c|c}
740            \rotc{N}&\rotc{E}\\
741            \hline
742            \rotc{W}&\rotc{S}\\
743        \end{tabu}
744        }}}%
745        % \resizebox{75mm}{!}{\textcolor{andp−red}{\LaTeX} is fun.}
746    \end{andptabbox}
747  \end{table}
748
749  \subsubsection{The \textbackslash{}multicolumn problem}
750
751  Due to the method the colored lines are put into the tables there shows up a row
752  color mismatch when trying to use \lstinline+\multicolumn+\footnote{This is a
753  quite long−standing problem resulting from the inner workings of \LaTeX's
754  \lstinline+tabular+ (and \lstinline+array+) environments. Due to the simplified,
755  row−oriented structure of \emph{Ann.\,Phys.} tables and the advanced
756  capabilities of the \textsf{tabu} package one should probably consider avoiding
757  multi−column constructions at all.}. A piece of code like
758  this:
759  %
760  \begin{lstlisting}
761    \begin{andptabular}{X[2]*3{X[C]}}{Problem.}
762        \label{tab:mcprob}
763        & \multicolumn{3}{c}{Numbers} \\
764        First Line & 1 & 2 & 3\\
765        Second Line & 2 & 4 & 6\\
766        Multicolumn Line & \multicolumn{3}{c}{more Numbers}\\
767    \end{andptabular}
768  \end{lstlisting}
769  %
770  \ldots\ yields that:
771  %
772  \begin{center}
773    \begin{andptabular}{X[2]*3{X[C]}}{Problem.}
```

```
774      \label{tab:mcprob}
775      & \multicolumn{3}{c}{Numbers} \\
776      First Line & 1 & 2 & 3\\
777      Second Line & 2 & 4 & 6\\
778      Multicolumn Line & \multicolumn{3}{c}{more Numbers}\\
779    \end{andptabular}
780  \end{center}
781  \medskip
782
783  Here is a workaround: just specify the cell color inside the
784  \lstinline+\multicolumn+ to coincide with the local row color.
785  \emph{Ann.\,Phys.} tables use two alternating row colors called
786  \lstinline+tablebgI+ (the darker one, lines 1,3,5,\ldots) and
787  \lstinline+tablebgII+ (the lighter one, lines 2,4,6,\ldots). Putting the
788  following convenience lines into the preamble of your document \ldots
789  %
790  \begin{lstlisting}
791    \newcolumntype{1}{>{\cellcolor{tablebgI}}}
792    \newcolumntype{2}{>{\cellcolor{tablebgII}}}
793  \end{lstlisting}
794  %
795  \ldots\ you would just insert those additional columnspecifiers into the
796  \lstinline+\multicolumn+ declaration to adjust the cell color. Here are the
797  working versions of the respective lines from the problematic tabular above:
798  %
799  \begin{lstlisting}
800    ...
801    & \multicolumn{3}{1c}{Numbers} \\
802    ...
803    Multicolumn Line & \multicolumn{3}{2c}{more Numbers}\\
804    ...
805  \end{lstlisting}
806  %
807  So:
808  %
809  \begin{center}
810    \newcolumntype{1}{>{\cellcolor{tablebgI}}}
811    \newcolumntype{2}{>{\cellcolor{tablebgII}}}
812    \begin{andptabular}{X[2]*3{X[C]}}{The Workaround.}
813      \label{tab:mcprobsolved}
814      & \multicolumn{3}{1c}{Numbers} \\
815      First Line & 1 & 2 & 3\\
816      Second Line & 2 & 4 & 6\\
817      Multicolumn Line & \multicolumn{3}{2c}{more Numbers}\\
818    \end{andptabular}
819  \end{center}
820
821  \subsection{Utility commands}
822  \label{ssec:util-cmd}
823
824  \textsf{andp2012} provides for some utility macros and shortcuts.
825
```

```
826  \begin{lstlisting}
827    \textsubscript{...}
828  \end{lstlisting}
```

829 Complementing \lstinline+\textsuperscript+, this command should be used
830 to typeset indices etc. in text mode.

831

```
832  \begin{lstlisting}
833    \textDegree
834    \textCelsius
835  \end{lstlisting}
```

836 These provide for some unit names for usage in text mode.
837 \lstinline+\textDegree+ gives a degree sign (that small superscript circle
838 —— no, that's nor "o" neither "0"), and \lstinline+\textCelsius+
839 combines that to the common centigrade sign. Both macros take
840 themselves care of their spacing, so they shall be used without
841 leading whitespace. Any empty group \lstinline+{}+ or explicit blank
842 afterwards is also unnecessary but shouldn't harm, either; see Table~\ref{tab:degrees}.
843 There are occasions where this whitespace
844 management might lead to problems, so these less automatic versions are provided:

```
845  \begin{lstlisting}
846    \textdegree
847    \textcelsius
848  \end{lstlisting}
```

849

```
850  \begin{table}[h]
851    \centering
852    \begin{andptabular}{X[l]X[2]X}{Various types of degrees.\label{tab:degrees}}
853      & Input & Output \\
854      Right: &
855      \textsf{42\textbackslash{}textDegree\ left} & 42\textDegree left \\
856      Wrong: &
857      \textsf{42\textbackslash,\textbackslash{}textDegree\ left} & 42\,\textDegree left \\
858      % % \midrule
859      Right: &
860      \textsf{42\textbackslash{}hot} & 42\textCelsius hot \\
861      Wrong: &
862      \textsf{42\textasciitilde\textbackslash{}hot} & 42~\textCelsius hot \\
863      % % \bottomrule
864    \end{andptabular}
865  \end{table}
```

866

```
867  \subsection{Referring}
868  \label{ssec:refer}
```

869

870 Inside articles one often refers to other parts of it, e.\,g., some
871 section, subsection, equation, figure, table, list item, or other
872 numbered element. At least while the article is edited by the
873 author(s), the numbering tends to change somewhat. So, instead of
874 writing the respective number(s) verbatim into the text (and having to
875 keep track of them oneself) one better uses symbolic referrers being
876 managed automatically by \LaTeX.

877

878 Elements being referred have to be \emph{labelled}. So, one has
879 to give the macro \lstinline+\label{...}+ right after (for environments:
880 inside) the element to be pointed to; e.\,g.,
881 \begin{lstlisting}
882   \section{...}
883   \label{sect:something}
884   ... see~\ref{sect:something}
885   on page~\pageref{sect:something}.
886   Also see Eq.\,\eqref{eq:useless} below.
887 \end{lstlisting}
888
889 Please note: \lstinline+\ref+ and \lstinline+\pageref+ insert the
890 \emph{reference counter} of the element referred to and the \emph{page number}
891 where it (to be exact, the \lstinline+\label+ macro) appears, respectively, into
892 the text. \lstinline+\eqref+ works like \lstinline+\ref+ except that it wraps
893 its output automatically in parenthesis: Equation~\#\ref{eq:useless} (below)
894 is to be called
895 ''Eq.\,\eqref{eq:useless}''. Labels are always typeset upright.
896
897 \subsection{Mathematics}
898 \label{ssec:math}
899
900 Formul\ae{} shall preferentially be typeset using the \lstinline+equation+
901 environment, which guarantees automatic numbering of the formul\ae{}.
902 The use of labels is strongly recommended, again; see above for more
903 on this.
904 %
905 \begin{equation}
906   \label{eq:useless}
907   \int_{−\infty}^{\infty} \det x \,\mathrm{d}x =
908   \sum_{n=−a}^{a} \log \left(\vec{x} + \sqrt[\sin{x}]{n} \right)\,.
909 \end{equation}
910 %
911 Punctuation of displayed math should be done in the same way as
912 ordinary text, but please separate the punctuation mark with a small
913 space \lstinline+\,+ as it is done in Eq.\,\eqref{eq:useless} above:
914 \begin{lstlisting}
915   \begin{equation}
916   \label{eq:useless}
917   \int_{−\infty}^{\infty} \det x \,\mathrm{d}x =
918   \sum_{n=−a}^{a} \log \left(\vec{x} + \sqrt[\sin{x}]{n} \right)\,.
919   \end{equation}
920 \end{lstlisting}
921
922 In math mode \LaTeX{} treats each single letter as a
923 variable token; hence those are typeset in \emph{math italics}.
924
925 Names of common mathematical functions, such as log,
926 sin, exp, max, sup \ldots{} which shall be typeset in roman are to be
927 input using their macro representation, e.\,g., \lstinline|\log|,
928 \lstinline|\sin|, \lstinline|\exp|, \lstinline|\max|, \lstinline|\sup| etc.
929

930 In order to distinguish "d" used as the \emph{differential sign} and
931 "e" used as the \emph{exponential function} from normal variables, set
932 these letters in roman if used in this context.
933
934 Also, any textual elements within display formul\ae{} should appear in
935 roman. That is accomplished using the \lstinline+\mathrm{...}+ command for that.
936 The same applies to textual labels and abbreviations within
937 mathematical subscripts and superscripts,
938 e.\,g.,
939 \begin{lstlisting}
940      $T_{\mathrm{eff}} = 5 \times 10^{9}$K
941 \end{lstlisting}
942 which produces $T_{\mathrm{eff}} = 5 \times 10^{9}$K. However, do not
943 use roman if the subscripts or superscripts represent variables,
944 e.\,g.~${\sum_{i=1}^{n} a_{i}}$\,.
945
946 In math mode every single letter token gets interpreted and kerned as a variable
947 by itself. To circumvent this if you want to use multi−letter variable names, say,
948 \begin{equation*}
949 \mathit{mass}=\frac{\mathit{force}}{\mathit{acceleration}}\,,
950 \end{equation*}
951 enclose these in
952 \lstinline+\mathit{...}+:
953 \begin{lstlisting}
954   \begin{equation*}
955   \mathit{mass}=\frac{\mathit{force}}{\mathit{acceleration}}\,,
956   \end{equation*}
957 \end{lstlisting}
958
959 Please ensure that \emph{physical units} (e.\,g. K, cm\tsp{3},
960 m\,s\tsp{$−$2}) are always set in roman type with an appropriate
961 inter−word spacing. If many units are used, employing the
962 \href{http://www.ctan.org/tex−archive/help/Catalogue/entries/siunitx.html}{\textsf{siunitx}
963 package} is recommended. It provides a set of tools for authors to
964 typeset numbers and units in a consistent way and includes automated
965 processing of numbers and units, and the ability to control tabular
966 alignment of numbers.
967
968 Chemical symbols and formul\ae{} should be set in roman, e.\,g.\ Fe (not
969 Fe), H\textsubscript{2}O (not $H_{2}O$).
970
971 A minus−sign shall nevertheless be set between
972 \$−signs and not just as a dash, otherwise it will not be recognized as a
973 mathematical symbol: $\exp{\mathrm{i}\pi}=−1\notin\{\text{−1},\text{−−1},\text{−−−1}\}$.
974
975 \subsection{Lists}
976 \label{ssec:paralist}
977
978 Standard \LaTeX{} list making environments come in three basic flavours:
979 \begin{description}
980
981   \item[Itemized lists] where each entry is preceded by some mark:

```
982   \begin{itemize}
983      \item First entry.
984      \item Second entry.
985   \end{itemize}
986
987   \item[Enumerated lists] where the entries are numbered
988   consecutively:
989   \begin{enumerate}[1.]
990      \item First entry.
991      \item Second entry.
992   \end{enumerate}
993
994   \item[Lists of descriptions] like this one.
995
996   \end{description}
997   Lists can be nested up to six levels deep (with a maximum of four of
998   the same kind), although for better oversight one should avoid nesting
999   more than two levels if~possible.
1000
1001  Thanks to the \textsf{paralist} package \textsf{andp2012} has a couple of
1002  additional list environments. The \textsf{asparaenum},
1003  \textsf{asparaitem}, and \textsf{asparadesc}
1004  environments format its entries as separate paragraphs with a
1005  preceding number, symbol, or tag:
1006  \begin{asparaenum}
1007     \item%(1)
1008     This is the first item of an \textsf{asparaenum} list with a bit of
1009     text to give a real paragraph.
1010     Lorem ipsum ad qui amet dolore,
1011     vitae cetero quaerendum mel ea. Facilis fastidii duo~no.
1012
1013     Second paragraph of the first item. Viris partiendo ius no, alia animal nam at.
1014     % Feugait imperdiet ius an, no quis facer lucilius vis. Aliquam saperet
1015     % contentiones ex pro, id idque offendit ius.
1016     \item%(2)
1017     Second item. Fugit suavitate ad eam,
1018     ut essent debitis cum. Cu duo iudico instructior.
1019  \end{asparaenum}
1020
1021  \begin{asparaitem}
1022     \item%(1)
1023     This is the first item of an \textsf{asparaitem} list with a bit of
1024     text to give a real paragraph. Lorem ipsum ad qui amet dolore,
1025     vitae cetero quaerendum mel ea.
1026     Facilis fastidii duo~no.
1027
1028     \item%(2)
1029     Second item. Fugit suavitate ad eam,
1030     ut essent debitis cum. Cu duo iudico instructior. Sea te choro
1031     perfecto, per eu meis nonumy percipit.
1032  \end{asparaitem}
1033
```

```
1034  \begin{asparadesc}
1035    \item[This is the first item] of an \textsf{asparadesc} list with a
1036    bit of text to give a real paragraph. Lorem ipsum ad qui amet
1037    dolore, vitae cetero quaerendum mel ea. Facilis fastidii duo~no.
1038
1039    \item[Second item.]
1040    Fugit suavitate ad eam,
1041    ut essent debitis cum. Cu duo iudico instructior. Sea te choro
1042    perfecto, per eu meis nonumy percipit.
1043  \end{asparadesc}
1044
1045  For even smoother embedding of lists into continuous text there are
1046  \textsf{inpara\ldots} variants:
1047  \begin{inparaenum}
1048    \item%(1)
1049    This is the first item of an \textsf{inparaenum} list.
1050    \item%(2)
1051    Second item.
1052  \end{inparaenum}
1053
1054  \begin{inparaitem}
1055    \item%(1)
1056    This is the first item of an \textsf{inparaitem} list.
1057    \item%(2)
1058    Second item.
1059  \end{inparaitem}
1060
1061  \begin{inparadesc}
1062    \item[This] is the first item of an \textsf{inparadesc} list.
1063    \item[That] is the second item of the same type of list.
1064  \end{inparadesc}
1065
1066  For more information on this please see the
1067  \href{http://www.ctan.org/tex-archive/help/Catalogue/entries/paralist.html}{documentation
1068  of the \textsf{paralist}~package}.
1069
1070  \subsection{Change marks}
1071  \label{ssec:changemarks}
1072
1073  Please use for changes requested by the referee the following colour change option:
1074  \begin{changed}
1075    This is a text snippet marked as \emph{changed}.
1076    This is done by enclosing it in an environment called
1077    \lstinline+changed+. Please note that in certain circumstances there
1078    might be small side effects such as make up deviations or additional~blanks.
1079  \end{changed}
1080  % Please note that the the text color inside the \lstinline+changed+ environment
1081  % can be changed using the optional argument, e.g., \lstinline+\begin{changed}[red]+.
1082
1083  \subsection{Citations}
1084  \label{ssec:cite}
1085
```

Author's guide

Literature citations in the text are represented as compressed,
sorted lists of numerical citations in square brackets.

All sources cited in the text (including work in progress) must appear
in the bibliography section at the end of the paper and vice versa all
entries in the reference section should be cited in the text.

\subsection{Making bibliographies using Bib\TeX{} and andp2012.bst}
\label{ssec:makebibs}

At the end of this file you see an example bibliography which
represents the journal's reference
style\cite{bib1,bib2,bib3,bib4,bib5,bib6}. Please format your real
bibliography accordingly.

Optionally, you may generate your bibliography using Bib\TeX{}, with the
bib−style−file \textsf{andp2012.bst} from the template package in your \LaTeX{} search
path. To this end, replace the example database−file \textsf{andp.bib} with
your own existing one(s), or alternatively use it as a template for
generating your new database. The following code in your manuscript
source file enables Bib\TeX{}−functionality:
%
\begin{lstlisting}
    \bibliographystyle{andp}
    \bibliography{<database−filename>}
\end{lstlisting}
%
You then need to run your manuscript source file through Bib\TeX{} using
the command
%
\begin{lstlisting}
    bibtex <filename>
\end{lstlisting}
%
(most \TeX{} frontends have a shortcut for this) and afterwards
through \LaTeX{} twice, in order to get the correct label numbering.

\section{General recommendations}
\label{sec:gen−rec}

We recommend to pay attention to the following general instructions
in order to avoid some common errors or~inconsistencies:
\newpage%%
\begin{itemize}

    \item
    Acronyms and abbreviations should be spelled out the first time they
    are used unless they are common throughout the discipline. Terms
    defined in the abstract should be defined independently in the main
    text.

    \item

Standard abbreviations for SI units (e.\,g., m, km, mm) or natural
units (e.\,g., parsec, cm) should be used. If English units
such as inches or pounds per square inch are used, metric
equivalents should be given in parentheses.

\item
In text, a sentence should not begin with a symbol or number. If
that can't be avoided, reference tags have to be preceded by the
word ''Reference''.

\item
In a series of three or more items, a comma should be used to
separate each item, and a comma is used before the last two items in
the series, e.\,g., \emph{space, time, and matter}.

\item
The word \emph{data} is plural and therefore takes a plural verb.

\end{itemize}

\begin{thebibliography}{0}

\bibitem{bib1}%
\textsc{A.\,B.~Firstauthor},
\textsc{C.\,D.~Secondauthor}, and
\textsc{E.~Lastauthor},
\jr{Abbreviatedjournalname} \textbf{volume}, page (year).

\bibitem{bib2}%
\textsc{X.~Ample} and
\textsc{A.\,N.~Other},
\jr{Laser Phys. Rev.} \textbf{1}, 111 (2050).

\othercit
\bibitem{bib3}%
\textsc{A.~Firstauthor},
\textsc{B.~Secondauthor}, and
\textsc{C.~Thirdauthor},
The Title of the Book (Publisher, City, year), p.\,111.

\othercit
\bibitem{bib4}%
\textsc{A.~Firsteditor},
\textsc{B.~Secondeditor}, and
\textsc{C.~Thirdeditor} (eds.),
The Title of the Edited Book (Wiley−VCH, Berlin, 2050), p.\,222.

\othercit
\bibitem{bib5}%
\textsc{D.~Contributor},
in:
The Title of the Edited Book,

```
1190    edited by
1191    A.~Firsteditor and B.~Secondeditor,
1192    Title of the Series of Books [if any], volume number [if any]
1193    (Publisher, City, year), chap.\,1.
1194
1195    \othercit
1196    \bibitem{bib6}%
1197    \textsc{A.~Nother},
1198    Proceedings of the 42nd Great Big Conference on Citation Formatting, Somewhere City,
1199    Country, Year, Part A (Publisher, City, year), pp.\,1--11.
1200
1201 \end{thebibliography}
1202 \end{document}
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