ZAA style author's guide

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1 Introduction

The ZAA class file `zaa.cls` provides a LaTeX 2_ε document class which is used to produce the final, camera-ready version of the manuscript. (It is scaled down by a factor of 1.2 in the printing process.)

It should be useable on every not too ancient TeX installation which provides LaTeX 2_ε and the AMS packages `amsmath, amssymb` and `amsthm`. They are part of most modern TeX systems. In case they are missing, download them from http://www.ams.org/tex/. The ZAA class is a small modification of the standard `article` class and as compatible with standard LaTeX as possible. In addition, it loads the mentioned AMS packages providing special support for the needs of mathematical texts.

Please report any bugs or problems to the author.

2 The document preamble

The ZAA style class is loaded by the `documentclass` line
`\documentclass[`⟨*options*⟩`]{zaa}`.
Possible options are `finaltitle, finalsize, nosectionnumber` and `draft`. The `finaltitle` option generates a titlepage appropriate for the ZAA journal and activates running headlines on all pages. `finalsize` activates the journal's page layout, the `draft` option activates the marking of overfull lines.[1] Theorems, propositions etc are usually numbered subordinately within a section (Theorem 2.1). The `nosectionnumber` option changes this to a continuous numeration. All other options are passed to the `article` class.

Other packages may be loaded by using the standard `\usepackage` command. For instance, to load the `graphicx` package which allows the inclusion of PostScript figures, one would use
`\usepackage{graphicx}`.
The packages `amsmath, amssymb` and `amsthm` are already preloaded by the ZAA class.

3 Front matter

- The title of the manuscript is specified by using the `\title{`title`}` macro. A `\\` may be used to put a line break in a long title.

- The `\author{First Author, Second Author and ...}` macro specifies the authors.

- The authors' address is specified by the `\address{...}` macro. Use several `\address` commands to enter more than one address and indicate the relation to the authors in the following way:

```
\author{Carl Friedrich Gau\ss\ and Felix Klein}
\address{C.F. Gau\ss: G\"ottingen,...}
\address{F. Klein: Leipzig,...}
```

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[1] **Beware!** Other packages may be influenced by the `draft` option, too. E.g., `graphicx` will no longer include your pictures.

- ZAA style uses the title as headline on odd pages and the author's name as headline on even pages. For long titles and in case of more than one author the running headlines should be specified using `\runtitle{short title}` and `\runauthor{First Author et al.}`.
- You can add a `\dedication{...}` line.
- Use `\abstract{...}` to enter the abstract.
- Use `\keywords{...}` for a list of keywords.
- The AMS subject classification code can be entered in one of two forms: either

  ```
  \primclass{35R30}
  \secclasses{35J20, 65M30}
  ```
  or
  ```
  \classification{35R30, 35J20, 65M30}
  ```

- The technical editors will add the `\logo` and `\received` macros. For example, `\logo{12}{1993}{2}{327}{341}` generates the line "Volume 12 (1993), No. 2, 327–341" on the title page and `\received{17. 3. 1992}` adds a "Received" line to the end of the paper.
- After specifying the title, authors, addresses, running titles, abstract, keywords and classification code insert the

  ```
  \maketitle
  ```
  command.

4 The body of the paper

The section headings

```
\section {⟨title text⟩}
\subsection {⟨title text⟩}
```

are supported. Since subsections are printed as run-in headings, a period is automatically added at the end. The `\subsectionn` command avoids this. As usual, the starred form suppresses the automatic numbering, e.g.

```
\subsection*{Acknowledgement}
```

Section numbering, equation numbering, cross-referencing etc. work in the usual LaTeX way. Figures may be included using the `graphicx` package:

```
\begin{figure}
 \includegraphics[scale=.35,angle=90]{fig1.eps}
 \caption{\label{fig1}Text of first caption.}
\end{figure}
```

An excellent description of its many capabilities can be found at
ftp://ctan.tug.org/tex-archive/documentation/epslatex.ps

4.1 AMS packages

The American Mathematical Society's AMS-LaTeX packages provided extra fonts, symbols, and math markup that are quite convenient. The ZAA style supports the use of these packages directly.

Among many other things, these packages define the `\mathfrak` and `\mathbb` commands to switch to the Fraktur and Blackboard Bold fonts, respectively. `${\mathfrak{G}}$` gives a Fraktur "$\mathfrak{G}$" and `${\mathbb{Z}}$` gives a Blackboard Bold "$\mathbb{Z}$".

Please read the extensive documentation available at http://www.ams.org/tex/amsmath.html and http://www.ctan.org/tex-archive/info/companion-rev/ch8.ps Another good source is the AMS *Short Math Guide for LaTeX* available at http://www.ams.org/tex/short-math-guide.html.

4.2 Theorem-like environments

The following environments[2] are supplied: `theorem, lemma, proposition, corollary, definition, conjecture, example, remark, note, case` and `proof`. If you need additional ones, read the *AMS theorem package user's guide* at http://www.ams.org/tex/amslatex.html. All environments except `proof` are numbered and have a `*` form which is unnumbered: `theorem*, lemma*` etc. By default the environments are numbered subordinately within a section and all environments share the same numbering sequence – Lemma 3.1, Definition 3.2, Note 3.4, Lemma 3.5 and so on. The `nosectionnumber` option of the `documentclass` statement results in a) continous numeration throughout the article and b) independent numbering of all environments – Lemma 1, Definition 1, Note 1, Lemma 2 and so on.

The command `\QED` produces a small black rectangle: ■ and should be used to indicate the end of proofs in the `proof` environment.

```
\begin{theorem}
This is an example of a theorem.
\end{theorem}

\begin{theorem}[Meik's Theorem]
This is an example of a theorem with a parenthetical note in the heading.
\end{theorem}

\begin{proof}
This is evident\QED
\end{proof}

\begin{note*}
  A note.
\end{note*}

\begin{proof}[Proof of Fermat's theorem]
See margin of this paper\QED
\end{proof}
```

produces:

Theorem 4.1. *This is an example of a theorem.*

Theorem 4.2 (Meik's Theorem). *This is an example of a theorem with a parenthetical note in the heading.*

Proof. This is evident ■

Note. A note.

Proof of Fermat's theorem. See margin of this paper ■

4.3 Miscellaneous

The `tightitemize` environment can be used in place of `itemize`. It produces lists with less space between items and less space before and after the list. It also allows for an optional length argument in order to increase the indentation for longer item labels:

```
\begin{tightitemize}
  \item a first item
  \item a second item
\end{tightitemize}
```

---

[2] An environment "foobar" is (in LaTeX jargon) something that is used in the form
```
  \begin{foobar}
  ...
  \end{foobar}
```

```
\begin{tightitemize}[12mm]
  \item[ALongWord] a first item
  \item[ALongWord] a second item
\end{tightitemize}
```

5 Citations and references

As usual in LaTeX, references are cited in text using the `\cite {⟨key⟩}` command and are listed in the bibliography using the `\bibitem {⟨key⟩}` command. The `\cite` macro enables LaTeX to automatically number the references in the manuscript.

A typical example might be:

```
String theory\cite{GSW} attempts to provide a theory of everything.
```

The corresponding `\bibitem` would be:

```
\bibitem{GSW} Greene,~M., Schwarz,~J. and E.~Witten:
\textit{Superstring Theory: Introduction.} Cambridge: Cambridge University Press 1985.
```