

# How to use RIKEN Accelerator Progress Report L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub> Class File (Version 1.2)

(As of November 6, 2013)

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## 1 Preface

This class file has been created based on `article.cls` attached to the Ascii version pL<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub>.

In order to suit “RIKEN Accelerator Progress Report”, there are sections where statement on `article.cls` has been changed. Stating procedure and notes to make including the changed sections are summarized in the following. Please use it as a reference for creating a draft.

Furthermore, in this class file, various parameters and output format has been changed to support “RIKEN Accelerator Progress Report.” Therefore, never change the parameters related to layout.

For notes to make during draft creation, see “RIKEN Accel. Prog. Rep. Author’s Guide.”

## 2 Class file description

### 2.1 Prepared files

`accel.cls`

RIKEN Accelerator Progress Report Class File

`lineno.sty`

A style file for supplementarily displaying line numbers on a document for proof reading

`template.tex`

Creation Template File

`Class_File_manual_e.pdf`

This file

`Class_File_manual_j.pdf`

Japanese version of this file

`sample.tex`, `f1.eps`

Sample file

### 2.2 Template and Stating Procedure

There is a template in `template.tex` which is attached along with this class file. Description in the following uses it as an example.

```
\documentclass{accel}
%\documentclass[Hashira]{accel}
%\documentclass[Draft]{accel}
%\documentclass[Draft,Hashira]{accel}
```

```
\usepackage[dvips]{graphicx}
\usepackage{latexsym}
\usepackage{amsbsy}
\usepackage{lineno}
```

---

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```
\begin{document}

%\Vol{00}

\title{Title}
%-----
%\title*{Title}
%\Condensed{Condensed from the article
                in xxxx, Vol.xx, xxxx (xxxx)}
%-----

\author{%
\Name{}{I. Suzuki},\institute{1}
\Name{}{T. Yamada},\institute{2}
and
\Name{}{S. Sato}\institute*{*1,*2}}

\INSTITUTE{1}{Department of Physics,
                Omsk University, Russia}
\INSTITUTE{2}{Faculty of Science,
                Tosai University}

\maketitle

- - - - -

\begin{thebibliography}{9}
\bibitem{}
\bibitem{}
\end{thebibliography}

\end{document}
```

In this section, the stating procedure is described in order.

- (1) When **Draft** is specified as the option argument for `\documentclass`, the composition will be for proof reading (one-column, double space between the lines, supplementarily displaying line numbers), not the original composition style. Please specify when outputting a draft for proof reading. Note: For displaying line numbers, “`lineno.sty`” is used. **Be sure to specify**

```
\usepackage{lineno}
```

**in the preamble.**

Line numbers are only displayed supplementarily; they might not be always assigned correctly.

In `\title{}`, the draft title is specified. When you wish to linefeed at a desired location, `\` should be used.

If the draft has already been published on another magazine, use `\title*{}` to state on which number and volume of the magazine that it was published in `\Condensed{}`.

- (2) In `\author{}`, author name, etc. is specified.

In stating author name, `\Name{}{}` is used.

In the second `{}`, first name initial and full surname should be entered.

To state where the author belongs to, `\institute{}`, `\INSTITUTE{}{}` is used.

- (i) `\institute{}` is a command used to output `*1`, `*2`, etc. beside the author name in `\author{}`. When a number is entered in `{}`, “\*input a number” will be added beside the author name.

If you wish to output only `*`, state 0.

When the author belongs to several locations, use `\institute*{}` as shown in `\institute*{*1,*2}` to state `*1`, `*2` directly in `{}`.

Do not enter space between the author name and `\institute{}` (`\institute*{}`) command.

(Correct) I. Suzuki`\institute{1}`

(Wrong) I. Suzuki`\institute{ 1}`

- (ii) `\INSTITUTE{}{}` is a command to output where the author belongs to on bottom left corner of the top page.

In the first `{}`, `\institute{}` and a corresponding number is stated. If 0, it will be only `*`, if 1, `*1`, and if 2, `*2` ... In the second `{}`, where the author belongs to is stated.

- (3) `\maketitle` should always be stated behind the above item.

The main draft comes after this.

- (4) References should be stated using `\thebibliography` environment. Using `\cite{}` in the main draft will enable cross reference of the numbers in References.

## 2.3 Display Mathematical Expression

- (1) The setting is to output the beginning of mathematical expression from left end to where it is 12pt lower. When there is a turnup in the mathematical formula, make adjustments based on this setting. There is no need to specify `fleqn` as an option for `\documentclass`. (a correction of `fleqn.clo` has been incorporated beforehand.). **(Caution)** A display mathematical formula using `$$ ~ $$` will output the mathematical formula with centering. Use `\[ ~ \]` instead.

- (2) When outputting formula number with a mathematical formula long enough to have multiple lines, ensure that it is output at the end of the mathematical formula.

(Correct)

$$\begin{aligned} Y &= a + b + c + d + e + f + g \\ &= a_i + h + i + j + k + l + m \\ &= \sum_{i=\infty} o_i + p + q + r + s + t \end{aligned} \quad (1)$$

(Wrong)

$$\begin{aligned} Y &= a + b + c + d + e + f + g \\ &= a_i + h + i + j + k + l + m \\ &= \sum_{i=\infty} o_i + p + q + r + s + t \end{aligned} \quad (2)$$

- (3) When you want to use bold italic for mathematical formula,

`\usepackage{amsbsy}`

Let the system read in and `amsbsy` packages. Furthermore, in  $\text{\LaTeX} 2_{\epsilon}$ , using `\boldsymbol{a}` instead of `\mbox{\boldmath $a$}` is recommended. This will make the upper or lower application of mathematical formula small.

## 2.4 Itemization Environment

When you wish to use the itemization environment, basically use `enumerate` environment only.

The output style has been changed so that the first layer is (1), (2), (3), ..., the second layer (i), (ii), (iii), ..., and the third layer (a), (b), (c), ...

Output Example

- (1) aaaa
- (i) bbbb
- (a) cccc

## 2.5 Charts and Graphics

### 2.5.1 Graphics

Basically read in a PostScript style graphics.

For example, specify

`\usepackage[dvips]{graphix}`

for package, and

```
\begin{figure}[tb]
\begin{center}
\includegraphics{xxxx.eps}
\end{center}
\caption{}
\label{}
\end{figure}
```

Table 1. Examples of Table.

a little thicker frame
normal frame

Specify as shown above.

As an option to specify the position for chart/graphic output, specifying [t], [b], or [tbp], instead of [h] so that output is made on the top or bottom row of the column. For chart/graphic with two-line heading, [t], or [p] would be the only choice.

### 2.5.2 Charts

The settings are made for charts so that they are composed in a size smaller (`\small`, 9pt) than the main draft.

Furthermore, in order to draw a little thicker horizontal frame line, a macro called `\Hline` has been set.

### 2.5.3 Captions

The width for caption turnup is set to the same width with the step for graphic with one line, and to 420pt for graphic with two-line heading.

### 2.5.4 Cautions when compiling with L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub> English version

If you try to place a “postscript chart” on the left column when there is a “footnote”, the “chart” and the “footnote” will be displayed with their positions switched as a result of compiling.

This phenomenon occurs only when compiling with L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub> English version, and it will not on pL<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub> (L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub> Japanese version). This is caused by the difference between Japan and the west on how to make layouts.

The above draft will be re-compiled at the printing company, so that the “footnote” will be displayed correctly on the bottom at the time of printing.

### 2.6 Footnotes

Output style for footnotes and footnote marks have been changed.<sup>a)</sup>

### 2.7 Literature Citation

In `\cite{}` for literature citation, corrections of `cite.sty` and `citesort.sty` are used. For example, when `\cite{1,5,3,4}`, the numbers are aligned in numerical order, and the middle of sequential numbers can be abbreviated.

Output Example<sup>1,3-5)</sup>

<sup>a)</sup> output is made like this.

## 2.8 Others

### 2.8.1 latexsym Package

When you wish to use  $\square$ ,  $\diamond$ , etc., specifying

```
\usepackage{latexsym}
```

will enable the use<sup>1)</sup>.

### 2.8.2 Macros Defined in This Class File

Space between lines called `\onelineskip` and `\halflineskip` are defined. As they describe themselves, use them in skipping 1 line or half a line.

## 3 Cautions in Typing

- (1) In order to have wide empty lines in places other than alignment, it is not desired to use forced line feeding by `\` too often. Although entering `\` just before an empty line, or using `\` twice, will widen the space in vertical direction, `\Underfull \hbox` messages will be output so many that, you may overlook an important message<sup>2)</sup>. Use `\onelineskip`, or `\halflineskip` to make empty lines.
- (2) Do not enter space before or after “( )” as in (`\word`).
- (3) For those indenting is important, such as the program list, do not reform by force (forced line feeding by using `\hspace*{?mm}` or `//`) but instead, use `list` environment or `tabbing` environment to state so that correction is easy.
- (4) Among mathematical formulas, `<`, or `>` may often be used like parenthesis. However these symbols are used as inequality signs, and space is entered before or after either of these symbols. When you wish to use these symbols as a parenthesis, use `\langle` (`()`), and `\rangle` (`()`).
- (5) T<sub>E</sub>X may not perform line feeding in mathematical formula (`$. . . $`) within a paragraph. Using `\allowbreak` is recommended in this case<sup>3-5)</sup>.

## 4 Deleted Commands

Commands not necessary for styles of this magazine have been deleted. The deleted commands are `\part`, `\titlepage`, etc.

## 5 Closing

For questions about this class file, mail to:  
`riken-accele-style@sanbi.co.jp`

### References

- 1) D. E. Knuth: The T<sub>E</sub>Xbook (Addison-Wesley, Reading, 1984).

- 2) L. Lamport,  $\text{\LaTeX}$ : A Document Preparation System (Addison-Wesley, Reading, 1986).
- 3) R. Seroul and S. Levy: A Beginner's Book of  $\text{\TeX}$  (Springer-Verlag, New York, 1989).
- 4) S. von Bechtolsheim:  $\text{\TeX}$  in Practice, Vol.I-IV (Springer-Verlag, New York, 1993).
- 5) G. Grätzer: Math into  $\text{\TeX}$  – A Simple Introduction to  $\mathcal{A}\mathcal{M}\mathcal{S}$ - $\text{\LaTeX}$  (Birkhäuser, Boston, 1993).