

Instructions for the Preparation of a Manuscript for the *Journal of the Physical Society of Japan*

Online-Journal Subcommittee of JPSJ*

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(Received April 10, 2001)

This document explains how to prepare manuscripts for the *Journal of the Physical Society of Japan* using the $\text{\LaTeX} 2_{\epsilon}$ class file “jpsj2.cls”.

KEYWORDS: $\text{\LaTeX} 2_{\epsilon}$, `amsmath.sty`, `graphicx.sty`, EPS, PDF

§1. Introduction

$\text{\LaTeX} 2_{\epsilon}$ has recently replaced the old version of $\text{\LaTeX}$ 2.09. In order to use more convenient macros provided as the standard $\text{\LaTeX} 2_{\epsilon}$ distribution, we have prepared a $\text{\LaTeX} 2_{\epsilon}$ class file, `jpsj2.cls`, for the *Journal of the Physical Society of Japan* (JPSJ), which is based on the former $\text{\LaTeX}$ style file, `jpsj.sty`.

The basic usage of this class file is the same as that with `jpsj.sty`. Please note that we *continue* to accept $\text{\LaTeX}$ 2.09-based manuscripts as well.

For basic usage of $\text{\LaTeX} 2_{\epsilon}$, the standard reference will help you.¹⁾

§2. Changes

2.1 Discarded

Since `jpsj2.cls` is designed only for submission to JPSJ, we have discarded (1) `full` environment, (2) `short` option and (3) `preprint` option.

2.2 Font selection

A major difference between $\text{\LaTeX} 2_{\epsilon}$ and $\text{\LaTeX}$ 2.09 is the mechanism of font selection (see Table I). We recommend that authors use the new commands although `jpsj2.cls` is compatible with the old commands.

2.3 Class options

The following is a list of class options.

`[letter]` for letter papers

`[shortnote]` for short notes

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Table I. New and old commands for font selection.

New	Old	Output
<code>\textbf{boldface}</code>	<code>{\bf boldface}</code>	boldface
<code>\textit{italic}</code>	<code>{\it italic}</code>	<i>italic</i>
<code>\textsf{sans serif}</code>	<code>{\sf sans serif}</code>	sans serif
<code>\textsc{Small Capital}</code>	<code>{\sc Small Cap}</code>	SMALL CAP
<code>\emph{emphasis}</code>	<code>{\em emphasis}</code>	<i>emphasis</i>
<code>\mathcal{CALLIGRAPHY}</code>	<code>{\cal CALLIGRAPHY}</code>	<i>CALLIGRAPHY</i>
<code>\mib{math bolditalic}*}</code>	<code>{\mib math bolditalic}</code>	<i>math bolditalic</i>

*prepared by JPSJ

[comment] for comments

[addenda] for addenda

[errata] for errata

§3. AMSMATH Package

The standard $\text{\LaTeX} 2_{\epsilon}$ distribution contains the `amsmath` package. `jpsj2.cls` automatically loads so that authors can use numerous convenient environments/commands for math equations.

In $\text{\LaTeX}$ 2.09, we have used the `eqnarray` environment in order to typeset aligned equations. However, we have had difficulty when we want more complicated alignment.

The following is a list of typical environments/commands of the `amsmath` package.

Please refer to the appropriate references for details.^{2,3)}

3.1 Multiple line equations

- (1) `align` replaces the `eqnarray` environment.

```
\begin{align}
m_{\{x\}} &= \frac{\{\sqrt{3}\}\{2\}}{(S_{\{b\}} - S_{\{c\}}), \ \backslash \\
m_{\{y\}} &= \frac{3}{2}S_{\{a\}} - \frac{1}{2}. \\
\end{align}
```

$$m_x = \frac{\sqrt{3}}{2}(S_b - S_c), \quad (1)$$

$$m_y = \frac{3}{2}S_a - \frac{1}{2}. \quad (2)$$

- (2) `split` always appears with the `equation` environment.

```
\begin{equation}
\begin{split}
m_{\{x\}} &= \frac{\sqrt{3}}{2} (S_{\{b\}} - S_{\{c\}}), \\
&= \frac{3}{2}S_{\{a\}} - \frac{1}{2}.
\end{split}
\end{equation}
```

$$\begin{aligned} m_x &= \frac{\sqrt{3}}{2}(S_b - S_c), \\ &= \frac{3}{2}S_a - \frac{1}{2}. \end{aligned} \quad (3)$$

- (3) `multline` replaces the `lefteqn` command.

```
\begin{multline}
A + B + C + D + E + F \\
= G + H + I + J + K \\
- L + M + N + O + Q + R + S
\end{multline}
```

$$A + B + C + D + E + F$$

$$= G + H + I + J + K$$

$$- L + M + N + O + Q + R + S \quad (4)$$

- (4) Subequations can be typeset in the same way as in `jpsj.sty`; however, the `subeqnarray` has been discarded. If you want to obtain a subequation array,

```
\begin{subequations}
\begin{align}
a &= \frac{b}{c} \\
d &= \frac{e}{f}
\end{align}
\end{subequations}
```

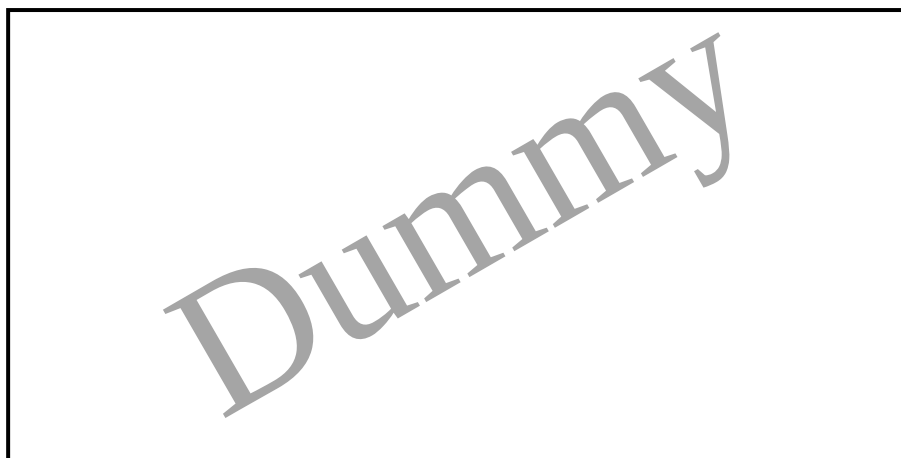


Fig. 1. You can put EPS files into the document.

$$a = \frac{b}{c} \tag{5a}$$

$$d = \frac{e}{f} \tag{5b}$$

3.2 Matrices

You can typeset matrices much more easily with plain T_EX-like environments such as `matrix`, `pmatrix`, `bmatrix` and `vmatrix`.

§4. Embedding Figures

`jpsj2.cls` automatically loads the `graphicx` package so that you embed EPS files into the document (we accept only EPS) as shown in Fig. 1. Although the command `epsfigure` still remains, we recommend using an ordinary command, “`\includegraphics`” instead.

§5. Comments

If you have trouble or find a bug, please e-mail the Online-Journal Subcommittee of JPSJ.⁴⁾ Your comments on this class file will be welcome.

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- 1) L. Lamport: *ΛT_EX: A Document Preparation System* (Addison-Wesley, Reading, 1994) 2nd ed., Translation by H. Abe (Pearson Education, Tokyo, 1999) [in Japanese].
 - 2) M. Goossens, F. Mettelbach and A. Samarin: *The ΛT_EX Companion* (Addison-Wesley, Reading, 1994) Translation by ASCII Corp. (ASCII, Tokyo, 1998) p. 257 [in Japanese].
 - 3) A. Diller: *ΛT_EX Line by Line* (John Wiley & Sons, Chichester, 1999) 2nd ed., p. 129.
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