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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This document explains how to prepare manuscripts for the Journal of the Physical Society of Japan using the LaTeX 2_ε class file "jpsj2.cls".

KEYWORDS: LaTeX 2_ε, amsmath.sty, graphicx.sty, EPS, PDF

1. Introduction

LaTeX 2_ε has recently replaced the old version of LaTeX 2.09. In order to use more convenient macros provided as the standard LaTeX 2_ε distribution, we have prepared a LaTeX 2_ε class file, `jpsj2.cls`, for the Journal of the Physical Society of Japan (JPSJ), which is based on the former 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 LaTeX 2.09-based manuscripts as well.

For basic usage of LaTeX 2_ε, 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 LaTeX 2_ε and LaTeX2.09 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

`[comment]` for comments

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Table I. New and old commands for font selection.

New	Old	Output
`\textbf{boldface}`	`{\bf boldface}`	**boldface**
`\textit{italic}`	`{\it italic}`	*italic*
`\textsf{sans serif}`	`{\sf sans serif}`	sans serif
`\textsc{Small Capital}`	`{\sc Small Cap}`	Small Cap
`\emph{emphasis}`	`{\em emphasis}`	*emphasis*
`\mathcal{CALLIGRAPHY}`	`{\cal CALLIGRAPHY}`	$\mathcal{CALLIGRAPHY}$
`\mib{math bolditalic}`*	`{\mib math bolditalic}`	***math bolditalic***

*prepared by JPSJ

`[addenda]` for addenda

`[errata]` for errata

`[twocolumn]` for twocolumn typesetting

`[letterpaper]` for printing on letter-size papers (not valid in combination with the twocolumn option)

3. AMSMATH Package

The standard LaTeX 2_ε distribution contains the `amsmath` package. `jpsj2.cls` automatically loads so that authors can use numerous convenient environments/commands for math equations.

In 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}), \\
m_{y} &= \frac{3}{2}S_{a} - \frac{1}{2}.
\end{align}
```

$$m_{\mathsf{x}} = \frac{\sqrt{3}}{2}(S_{\mathsf{b}} - S_{\mathsf{c}}), \tag{1}$$

$$m_{\mathsf{y}} = \frac{3}{2}S_{\mathsf{a}} - \frac{1}{2}. \tag{2}$$

(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}
```

$$\begin{aligned} m_{\mathrm{x}} &= \frac{\sqrt{3}}{2}(S_{\mathrm{b}} - S_{\mathrm{c}}), \\ &= \frac{3}{2}S_{\mathrm{a}} - \frac{1}{2}. \end{aligned} \tag{3}$$

(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}
```

$$\begin{aligned} A + B + C + D + E + F & \\ &= G + H + I + J + K \\ &\quad - L + M + N + O + Q + R + S \end{aligned} \tag{4}$$

(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}
```

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

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

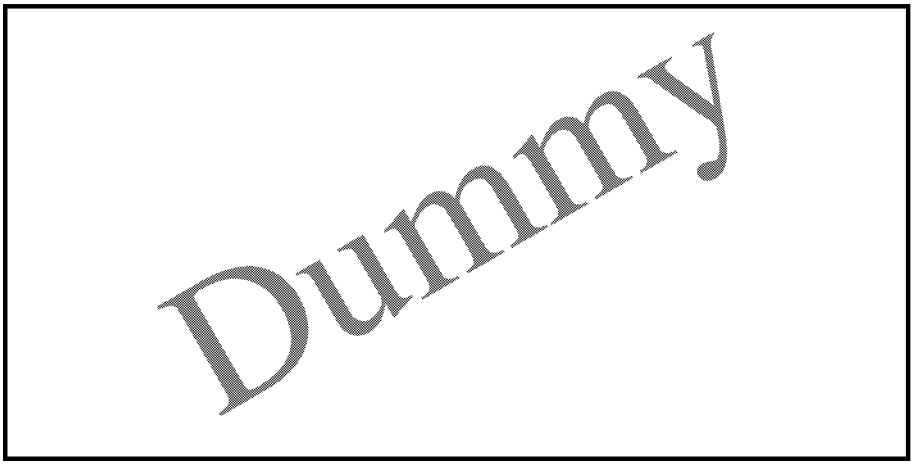

Fig. 1. You can put EPS files into the document.

3.2 Matrices

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

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.

References

1) L. Lamport: LaTeX: A Document Preparation System (Addison-Wesley, Reading, 1994) 2nd ed., Translation by H. Abe (Pearson Education, Tokyo, 1999) [in Japanese].
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