

How to Use the L^AT_EX 2_ε Class File (ieej-e.cls) for the Transactions of the Institute of Electrical Engineers of Japan

Taro Denshi^{*a)} Member, Hanako Denki^{**} Non-member

(Manuscript received October 11, 2021, revised April 4, 2022)

IEE Japan provides a L^AT_EX 2_ε class file, named ieej-e.cls, for the Transactions of the Institute of Electrical Engineers of Japan. This document describes how to use the class file, and also makes some remarks about typesetting a document by using L^AT_EX 2_ε. pdf_latex is recommended when compiling.

Keywords: Class file, L^AT_EX 2_ε

1. Introduction

This document describes how to handle the ieej-e.cls for the Transactions of the Institute of Electrical Engineers of Japan. Section 2 explains how to typeset according to the template. template.tex which is distributed with the ieej-e.cls can be used. Section 3 describes a special feature of ieej-e.cls, which is different to the article.cls provided by the standard L^AT_EX 2_ε and which points may be aware of on writing a paper and so on. Section 4 is about typographic notes, which explains how to typeset, how to prevent typographic errors and how to handle long formulas. For information about printing on A4 paper and making pdf file, see Appendix (p.6).

2. Template and How to Typeset the Paper and Letter

2.1 Type of the Paper Here is the template of the paper.

```
\documentclass[english,fleqn]{ieej-e}
\usepackage[defaultsup]{newtxtext}
\usepackage[varg]{newtxmath}
\usepackage{graphicx}
\usepackage[superscript,nomove]{cite}
\FIELD{A}
\YEAR{2022}
\NO{1}
\title[]{}
\authorlist{}
\authorentry{name}{membership}{label}
}
\affiliate[label]
{affiliate\\ address}
```

This paper is based on Reference (1), which published in ...
This paper is based on Reference (1), which published in the International Conference xxx xxx (2020) ©2020 IEEJ.

a) Correspondence to: TaroDenshi@iee.or.jp

* Technical Research Labs., Shin-nichi Electric Co., Ltd.
7-2, Gobancho, Chiyoda-ku, Tokyo, Japan 102-0076

** Technical Labs., Kagoshima Electron Corp.
2-100, Daikan-cho, Kagoshima, Japan 890-0099

```
\received{2021}{10}{11}
\revised{2022}{4}{4}
\NoteOnArticle{This paper is based
on Reference (1) ...}
\NoteIntConf{This paper is based
on Reference (1), which published
in the International Conference
xxx xxx (2020)
\textcopyright 2020 IEEJ.}
\begin{document}
\begin{abstract}
Summary
\end{abstract}
\begin{keyword}
Keywords
\end{keyword}
\maketitle
\section{Introduction}
...
\begin{thebibliography}{99}
\bibitem{}
\bibitem{}
...
\end{thebibliography}
\appendix
\section{}
...
\acknowledgment
...
\begin{biography}
\profile{membership}{name}{text}
\end{biography}
\end{document}
```

• The newtxtext and newtxmath package should be loaded.

```
\usepackage[defaultsup]{newtxtext}
\usepackage[varg]{newtxmath}
```

• The \FIELD command is used for the footer. Its argument indicates the categories of IEEJ transactions (see Table 1 of “Author’s Guidelines for the Transactions of the Institute of Electrical Engineers of Japan”). For ex-

ample, in the case of “Fundamental and Materials” A is specified as the argument of \FIELD.

- The \YEAR command is used for footers. The year of publication is assigned as \YEAR{2022}.
- The \NO command is also for the title page and footers. The number of the issue is assigned as \NO{1}.

Those two commands are optional. If you do not know which issue your paper to be appear, they may be commented out or left blank.

- The title of a paper is assigned in \title. You may use \\ to start a new line in a long title.

The argument of the \title command is used for more than just producing a title, it is also used to generate a running head.

A shorter title should be specified within 8 words as follows.

\title[short title]{title}

- The outputs of authors’ names, memberships and marks of affiliates are automatically generated by using the \authorlist and \authoreentry commands.

The \authoreentry command must be described as an argument of the \authorlist command.

The \authoreentry command has three arguments.

\authoreentry{name}{membership}{label}

For example, they could be typesetted as follows:

```
\authorlist{%
\authoreentry{Taro_Denshi}{m}{TRL}
\authoreentry{Hanako_Denki}{n}{KEC}
}
```

- The first argument of \authoreentry is filled with the author’s name.
- The second argument is specified by one letter out of seven letters (m, a, s, l, n, h, S, f), each one indicating the membership of authors as the following table shows.

m	Member
a	Associate Member
s	Student Member
l	Life Member
n	Non-member
h	Honorary Member
S	Senior Member
f	Fellow

the left column is letters to be specified. the right column is membership to be generated.

No extra spaces may be added between a letter and a brace. {m} and {m_} are regarded as different. The latter will not generate “Member”.

- The third argument is assigned by the label of the author’s affiliate, corresponding to the label of the \affiliate command (see below). For example, an abbreviation for a university, institute or company can be given.

If an author does not have an affiliate, none must be specified.

- You might specify e-mail address as follows.
\authoreentry[TaroDenshi@iee.or.jp]
{Taro Denshi}{m}{TRL}

The following words are generated on the left side

at the bottom of the first page.

“a) Correspondence to: TaroDenshi@iee.or.jp”

- The \authoreentry command lists the authors’ names and affiliates one by one. If more than 10 authors are listed, the list occupies almost a half of the page. Therefore, if you specify as follows,
\def\authoralign{2}
then, it will list the names two per line. The argument of \authoralign must be 1 or 2.

- An author’s affiliate is described in the \affiliate command as follows.

\affiliate[label]{affiliate}\address

The first argument “label” must be the same as the 3rd argument of the \authoreentry command. The second argument is assigned by both the author’s affiliate and address, which are separated by \\.

No extra spaces may be added between a letter and a brace in the first label argument. The entry of \affiliate must be followed by the order of labels in \authorlist commands.

- If the labels of affiliate are different from those of \authoreentry, there will be a warning message on your terminal.
- Both the \received and \revised commands are used for the date of receipt and revision of the paper. For example, the date of receipt is assigned as \received{2021}{10}{11} and the date of revision is assigned as \revised{2022}{4}{4}.

Both commands will generate the following strings below authors’ names.

“(Manuscript received October 11, 2021, revised April 4, 2022)”

- The \NoteOnArticle command can be used, when you want to describe that the paper has already been published.
- \NoteIntConf command can be used, when you want to describe that the paper has already been published in the proceedings of the international conference, etc.
- The text of the abstract is described in the abstract environment. The text should be a maximum of 150 to 200 words.

The text of the keywords is described in the keyword environment. The text should be a maximum of 6 words.

- The \maketitle command must come after those commands before the main text begins.
- The \appendix command of the standard L^AT_EX 2_ε is a declaration that changes the way sectional units are numbered. But \appendix of ieej-e.cls generates the heading “Appendix” and appendix sections are numbered “1”, “2”, etc., appendix equation numbers are numbered “(A1)”, “(A2)”, etc., appendix figure numbers are numbered “app. Fig. 1”, “app. Fig. 2”, etc.
- The \acknowledgment command is available if you might express your gratitude.
- Authors’ profile on page 7 is generated with:
\begin{biography}
\profile{m}{Denshi Taro}{%
was born in Kumamoto, Japan,
on August 15, 1972.
... }

```
\profile{n}{Denki Hanako}{%
was born in Okayama, Japan,
on February 25, 1960.
... }
\end{biography}
```

- The first argument of the `\profile` command is specified by one letter out of seven letters (m, a, s, l, n, h, S) the same as the second argument of `\authentry`.

The second and third arguments are filled with an author's name and profile respectively.

- If PDF or EPS (see p.3) files of pictures of the authors' faces are provided, put their files named `a1.pdf`, `a2.pdf`, etc., which are followed by the order of authors, on the current directory of your computer. The `\profile` command automatically reads their files and puts their pictures on the left margin.

The ratio of PDF file must be width : height = 22 : 28, because PDF files are read by the following command.

```
\resizebox{22mm}{28mm}
{\includegraphics{a1.pdf}}
```

If you want to use other image file formats (for example, jpg), you can use the following definition.

```
\makeatletter
\def\ieej@in@ext{jpg}
\makeatother
```

This will load `a1.jpg`.

If their files do not exist in the current directory, simple frames will be generated (see p.7).

Pictures of the authors' faces may be omitted by using the `\profile*` command instead of the `\profile` command.

2.2 Type of the Letter letter option must be added as follows.

```
\documentclass[english,letter,fleqn]{ieej-e}
```

An abstract should be about 100 words. Authors' profiles may be omitted.

3. Special Feature of `ieej-e.cls`

3.1 Math Formula `dotseqn.sty` is included inside `ieej-e.cls` to fill a space between a formula and a formula number with dots.

A displayed formula is aligned on the left, a fixed distance (6.5 mm) from the left margin, instead of being centered. A formula number is put on the right side, 3.25 mm from the right margin.

The following is an example of a displayed formula. If you type below,

```
\begin{eqnarray}
\lefteqn{\iint_S
\left(\frac{\partial V}{\partial x} - \frac{\partial U}{\partial y}\right)
dx dy} \quad \text{nonnumber} \\
&= & \oint_C \left( U \frac{dx}{ds} + V \frac{dy}{ds} \right) ds
\end{eqnarray}
```

then, you get the following.

$$\iint_S \left(\frac{\partial V}{\partial x} - \frac{\partial U}{\partial y} \right) dx dy = \oint_C \left(U \frac{dx}{ds} + V \frac{dy}{ds} \right) ds \dots\dots\dots (1)$$

A width of one column is narrow to compose displayed formulas. Therefore, you should compose equations with the proper length, paying attention to the message "Overfull `\hbox`".

3.2 AMS Packages The `newtxmath` package automatically loads the `amsmath` package. When the `amsmath` package is loaded, some environments, for example the `align`, `gather`, `multiline` and `split` environments etc., will not automatically generate dots between a formula and a formula number. One primitive way to resolve this problem is to typeset as follows at the end of the formula.

```
\rlap{\hbox to 10mm{\ \EqnDots}}
```

This puts dotted leaders of width 10 mm into a box of width zero, extending to the right of the current position.

3.3 Figures and Tables The font size inside the `figure` and `table` environments is set `\footnotesize` (7 pt).

The `[h]` option, one of the arguments of floating environment specifying a location where the float may be placed, is not recommended. Figures and tables should be located at the top or bottom of a page by using `[tb]` etc. for the transactions of IEEJ.

3.3.1 Including Graphics Although there are many ways to include pictures and figures in L^AT_EX, PDF is recommended.

The `graphics` or `graphicx` package must be loaded.

Here is a simple explanation to insert graphics into the text. A `graphics` file can be included by the `\includegraphics` command.

```
\begin{figure}[tb]
\begin{center}
\includegraphics{file.pdf}
\end{center}
\caption{...}
\label{fig:1}
\end{figure}
```

If the option `scale=0.5` is given, the graphics will be scaled by half.

```
\includegraphics[scale=0.5]{file.pdf}
```

You can get the same result as above by using the `\scalebox` command.

```
\scalebox{0.5}{\includegraphics{file.pdf}}
```

If the option `width=30mm` is given, the width of graphics will be 30 mm (with the height proportionally scaled).

```
\includegraphics[width=30mm]{file.pdf}
```

The next is another example using `\resizebox`.

```
\resizebox{30mm}{!}
{\includegraphics{file.pdf}}
```

Both dimension of width and height can be specified as follows.

```
\includegraphics[width=30mm,height=40mm]
{file.pdf}
```

or

```
\resizebox{30mm}{40mm}
{\includegraphics{file.pdf}}
```

```
\begin{figure}[tbp]
... floating materials ...
\capwidth=50mm
\caption{An example of caption
in English.}
\label{fig:1}
\end{figure}
```

Figure 1 An example of caption in English.

Table 1 An example of table caption in English.

A	B	C
X	Y	Z

```
\begin{table}[b][tbp]
\caption{An example of table caption in English.}
\label{table:1}
\begin{center}
\begin{tabular}{c|c|c}
\hline
A & B & C \\
\hline
X & Y & Z \\
\hline
\end{tabular}
\end{center}
\end{table}
```

For further information about the `graphics` package, see reference book (9) (11).

3.3.2 Captions of Floating Environment The width of caption is set 72 mm (single column) and 0.8textwidth (double column). It can be set by changing the value of `\capwidth` (see Fig. 1)

3.4 Bibliography and Citations

- The style file for BibT_EX can be available, but it is unofficial. You can follow it from the following URL.
<https://github.com/ehki/jIEEETran>

- The `cite` package should be loaded.

```
\usepackage[superscript,nomove]{cite}
```

The `cite.sty` collapses a list of three or more consecutive numbers into a range, and sorts the numbers before collapsing them. For example, “(6)(7)(5)(2)(1)(3)” is transformed into “(1)–(3)(5)–(7)”.

The `\cite` command displays citations as superscript numbers. On the other hand, if you want to get “ref. (1)”, the `\citen` command can be used.

In the `thebibliography` environment, place references in the right order according to the IEEJ editing style; e.g., authors’ names, initials, title of article, journal abbreviation, volume number, pages, and publication year. Journals are italicized as `\itshape`, and titles of papers enclosed with “ ” in plain text.

3.5 Hyperlink The following is an example usage of `hyperref` package.

```
\usepackage{graphicx}
\usepackage[pdftencoding=auto]{hyperref}
\hypersetup{%
setpagesize=false,
colorlinks=true,
%colorlinks=false,
urlcolor=blue,
citecolor=black,
linkcolor=black,
}
```

Table 2 `\FRAC` and `\RN`

<code>\RN{2}</code>	II
<code>\RN{117}</code>	CXVII
<code>\FRAC{\pi}{2}</code>	$\pi/2$
<code>\FRAC{1}{4}</code>	$1/4$

3.6 Theorem-like Environment If you use the `\newtheorem` environment, pay attention to the following points. There are no additional vertical spaces before and after the environment, and the text within the environment does not appear in italics.

An example is given as follows.

```
\newtheorem{theorem}{Theorem}
```

```
\begin{theorem}
```

There are no positive integers such that $x^n + y^n = z^n$ for $n > 2$.

I’ve found a remarkable proof of this fact, but there is not enough space in the margin [of the book] to write it. (Fermat’s last theorem).

```
\end{theorem}
```

Theorem 1 There are no positive integers such that $x^n + y^n = z^n$ for $n > 2$. I’ve found a remarkable proof of this fact, but there is not enough space in the margin [of the book] to write it. (Fermat’s last theorem).

3.7 Footnotes The footnote begins with “†” (see p.5). As the footnote counter increases, the footnote marks proceed as “†”, “††”, “†††”. The footnote mark is set to reset at each page.

3.8 Make All Text Pages the Same Height

`\flushbottom` is declared in `ieej-e.cls`. It makes all text pages the same height, adding extra vertical space when necessary to fill out the page.

3.9 Verbatim Environment

You can change the values of the parameters in the verbatim environment which is customized for `ieej-e.cls`. The default settings are:

```
\verbatimleftmargin=0pt
```

```
\def\verbatimsize{\normalsize}
```

```
\verbatimbaselineskip=\baselineskip
```

The leftmargin of the verbatim environment is set 0pt. The font size is set `\normalsize`. The baselineskip is set the same of normal texts.

For example, those parameters can be changed as follows:

```
\verbatimleftmargin=6.5mm
```

```
\def\verbatimsize{\footnotesize}
```

```
\verbatimbaselineskip=3mm
```

3.10 Macros Defined by `ieej-e.cls`

- `\QED`: Produces “□” in the end of the proof and so on. You would get the same output by using `\hfill \Box`. But if the end of a paragraph goes to the right margin, the character □ is positioned at the start of a line. Using `\QED` will prevent such cases.
- `\halflineskip` and `\onelineskip`: Produce a vertical space, $1/2\text{baselineskip}$, 1baselineskip respectively.
- As shown in Table 2, the macros `\RN` and `\FRAC` are defined⁽¹⁾.
- `\ddash`: Produce double “—”. double “-” sometimes produce thin space between two “—”. `\ddash` will prevent such a case.

4. Typographic Notes

4.1 How to Prevent Typographic Errors

- (1) You should pay attention to a space after a period.
 “T_EX simply assumes that a period ends a sentence unless it follows an uppercase letter. This works most of the time, but not always—abbreviations like ‘etc.’ being the most common exception. You tell T_EX that a period doesn’t end a sentence by using a `_` command (a `\` character followed by a space or the end of a line) to make the space after the period.”

“On the rare occasions that a sentence-ending period follows an uppercase letter, you will have to tell T_EX that the period ends the sentence. You do this by preceding the period with a `\@` command.”⁽⁹⁾

Beans (lima, etc.)\ have vitamin B\@.

- (2) “Line breaking should be prevented at certain interword spaces. ... Trying `~` (a tilde character) produces an ordinary interword space at which T_EX will never break a line.”⁽⁹⁾

Mr.~Jones, Figure~\ref{fig:1}, (1)~gnats.

- (3) With respect to Figure, Section, Equation, when these words appear at the beginning of a sentence, they should be spelt out in full, e.g., “Figure 1 shows...” is used. When they appear in the middle of a sentence, abbreviations, e.g., “in Fig. 1”, “in Sect. 2”, “in Eq. 3” should be used.

- (4) There should be no space after opening or before closing parentheses, as in `(\word_)`.

- (5) There are many cases of an inappropriate application of a `\` or `\newline` command except in the tabular environment etc., such as two `\` commands in succession or `\` command just before a blank line. They will often cause warning messages like `Underfull \hbox ...`, as a result it would often prevent you from finding important warning messages. The use of `\par\noindent` or `\hfil\break` commands is recommended and gives you the same effect without warning messages.

- (6) There are some cases of an inappropriate application of a `\` in descriptions such as program lists. Use of the `tabbing` environment or `list` environment is recommended.

- (7) The difference in the use of the hyphen (-), en dash (–) and em dash (—) should be noted. A hyphen is used in connecting English-language words such as ‘well-known’, and an en dash is used when expressing a range such as ‘pp.298–301’. The em dash is even longer—it’s used as punctuation.

- (8) The difference when hyphen and en dash are used in maths mode should also be noted. Some examples are given below.

`$A^{\mathrm{b}}\mathrm{c}\Rightarrow` hyphen

`$A^{\mathrm{b}-\mathrm{c}}\Rightarrow` en dash

`$A^{\mathrm{b}}\mathrm{c}\Rightarrow` en dash

`$A^{\mathrm{b}-\mathrm{c}}\Rightarrow` minus sign

`$A^{\mathrm{b}-\mathrm{c}}\Rightarrow` minus sign

- (9) The less-than sign “<” (<, a relation) should not be confused with “<” (`\angle`, a delimiter). The same

is true for the greater-than sign “>” and “>”.

- (10) A unary operator and a binary operator: “A + or – that begins a formula (or certain subformulas) is assumed to be a unary operator, so typing `$-x$` produces $-x$ and typing `$_{\sum} - x_i$` produces $\sum -x_i$, with no space between the “–” and “x”. If the formula is part of a larger one that is being split across lines, T_EX must be told that the + or – is a binary operator. This is done by starting the formula with an invisible first term, produced by an `\mbox` command with a null argument.”⁽⁹⁾

`\begin{eqnarray}`

`y &=& a + b + c + ... + e\`

`& & \mbox{} + f + ...`

`\end{eqnarray}`

- (11) `\allowbreak` may be used within long maths formulas in paragraphs instead of using `\hfil\break`, `\` or `\linebreak`, since T_EX is reluctant to break lines there.

4.2 How to Handle Long Formulas Here are some explanations how to handle long formulas, for example, overhanged equations, equations overriding the equation number, and so forth.

Example 1:

$$y = a + b + c + d + e + f + g + h + i + j + k + l + m(2)$$

The equation is too long, and the space between the equation and the equation number are too narrow and sometimes the equation number moves to the right. In this case the `\!` command is useful.

“The `\!` acts like a backspace, removing the same space amount of space that `\`, adds.”⁽⁹⁾

`\begin{equation}`

`y\!=\!a\!+\!b\!+\!c\!+\!... \!+\!m`

`\end{equation}`

$$y = a + b + c + d + e + f + g + h + i + j + k + l + m \dots\dots\dots (3)$$

Example 2: Using `eqnarray` environment instead of `equation` environment.

`\begin{eqnarray}`

`y &=& a+b+c+d+e+f+g+h\nonumber\`

`& & \mbox{}+i+j+k+l+m+n+o`

`\end{eqnarray}`

To typeset above, you will get the following output.

$$y = a + b + c + d + e + f + g + h \\ + i + j + k + l + m + n + o \dots\dots\dots (4)$$

Example 3: To change the value of `\mathindent` is to change the position that the equation begins[†].

`\mathindent=0mm % <-- [1]`

`\begin{equation}`

`y=a+b+c+d+e+f+g+h+i+j+k+l+m`

`\end{equation}`

`\mathindent=6.5mm % <-- [2] default value`

To typeset above (see [1]), you will get the following output.

[†] This explanation is appropriate to left-aligns displayed formulas, not to centering formulas.

$$y = a + b + c + d + e + f + g + h + i + j + k + l + m \cdots (5)$$

The value of `\mathindent` must be restored (see [2]).

Example 4:

$$\iint_S \left(\frac{\partial V}{\partial x} - \frac{\partial U}{\partial y} \right) dx dy = \oint_C \left(U \frac{dx}{ds} + V \frac{dy}{ds} \right) ds \cdots (6)$$

The equation is too long and overrides the equation number. In this case the `\lefteqn` command is useful. It can be used for splitting long formulas across lines as follows.

```
\begin{eqnarray}
\lefteqn{
\iint_S
\left(\frac{\partial V}{\partial x} - \frac{\partial U}{\partial y}\right) dx dy
} \quad \nonumber \\
&= \oint_C \left( U \frac{dx}{ds} + V \frac{dy}{ds} \right) ds
\end{eqnarray}
```

To typeset above, you will get the following output.

$$\iint_S \left(\frac{\partial V}{\partial x} - \frac{\partial U}{\partial y} \right) dx dy = \oint_C \left(U \frac{dx}{ds} + V \frac{dy}{ds} \right) ds \cdots (7)$$

Example 5: A matrix using the `array` environment.

$$A = \begin{pmatrix} a_{11} & a_{12} & \cdots & a_{1n} \\ a_{21} & a_{22} & \cdots & a_{2n} \\ \vdots & \vdots & \ddots & \vdots \\ a_{m1} & a_{m2} & \cdots & a_{mn} \end{pmatrix} \cdots (8)$$

The width of a matrix can be shrunk by changing the value of `\arraycolsep` or using an `@`-expression (`@{}`).

```
\begin{equation}
\arraycolsep=3pt % <--- [1]
A = \left(
\begin{array}{@{\hspace{2pt}}% <-- [2]
cccc
@{\hspace{2pt}}% <-- [2]
}
a_{11} & a_{12} & \ldots & a_{1n} \\
a_{21} & a_{22} & \ldots & a_{2n} \\
\vdots & \vdots & \ddots & \vdots \\
a_{m1} & a_{m2} & \ldots & a_{mn}
\end{array}
\right)
\end{equation}
```

The `\arraycolsep` dimension is half the width of a horizontal space between columns in the `array` environment. A matrix using the `array` environment can be shrunk by changing the value of `\arraycolsep` (see [1]). And also it can be shrunk by using `@`-expression (see [2]).

$$A = \begin{pmatrix} a_{11} & a_{12} & \cdots & a_{1n} \\ a_{21} & a_{22} & \cdots & a_{2n} \\ \vdots & \vdots & \ddots & \vdots \\ a_{m1} & a_{m2} & \cdots & a_{mn} \end{pmatrix} \cdots (9)$$

Compare Eqs. (8) and (9).

Example 6: A matrix using the `pmatrix` environment.

$$A = \begin{pmatrix} a_{11} & a_{12} & \cdots & a_{1n} \\ a_{21} & a_{22} & \cdots & a_{2n} \\ \vdots & \vdots & \ddots & \vdots \\ a_{m1} & a_{m2} & \cdots & a_{mn} \end{pmatrix} \cdots (10)$$

The width of a matrix can be shrunk by changing the value of `\arraycolsep` same as `array` environment (see [A]).

```
\begin{equation}
%\arraycolsep=5pt % default
\arraycolsep=2pt % [A]
A =
\begin{pmatrix}
a_{11} & a_{12} & \ldots & a_{1n} \\
a_{21} & a_{22} & \ldots & a_{2n} \\
\vdots & \vdots & \ddots & \vdots \\
a_{m1} & a_{m2} & \ldots & a_{mn}
\end{pmatrix}
\end{equation}
```

$$A = \begin{pmatrix} a_{11} & a_{12} & \cdots & a_{1n} \\ a_{21} & a_{22} & \cdots & a_{2n} \\ \vdots & \vdots & \ddots & \vdots \\ a_{m1} & a_{m2} & \cdots & a_{mn} \end{pmatrix} \cdots (11)$$

Compare Eqs. (10) and (11).

References

- (1) D.E. Knuth, The T_EXbook, Addison-Wesley (1994)
- (2) R. Seroul & S. Levy: A Beginner's Book of T_EX, Springer-Verlag (1989)
- (3) D. Salomon: The Advanced T_EXbook, Springer-Verlag (1995)
- (4) V. Eijkhout: T_EX by Topic, Addison-Wesley (1991)
- (5) P.W. Abrahams: T_EX for the Impatient, Addison-Wesley (1992)
- (6) S. von Bechtolsheim: T_EX in Practice, Springer-Verlag (1993)
- (7) G. Grätzer: Math into T_EX—A Simple Introduction to $\mathcal{A}\mathcal{M}\mathcal{S}$ -L^AT_EX, Birkhäuser (1993)
- (8) N. Walsh: Making T_EX Work, O'Reilly & Associates (1994)
- (9) L. Lamport, L^AT_EX: A Document Preparation System, Second Edition, Addison-Wesley (1994)
- (10) M. Goossens, F. Mittelbach & A. Samarin: The L^AT_EX Companion, Addison-Wesley (1994)
- (11) M. Goossens, S. Rahts, and F. Mittelbach: The L^AT_EX Graphics Companion, Addison-Wesley (1997)

Appendix

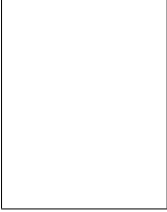
1. Making PDF File and Printing on A4 Paper

- You can directly make a pdf file by using `pdflatex`, or convert dvi file to pdf file by using `dvipdfmx`. The former is strongly recommended.
- You may convert dvi file to pdf file by using `dvipdfmx`.
`$ dvipdfmx -p a4 -x 1in -y 1in`
`-o file.pdf file.dvi`
 “-p a4 -x 1in -y 1in” option might be omitted.
- If you print a manuscript on A4 paper by using `dvips` printer driver, the following parameter might be set.
`$ dvips -Pprinter`
`-t a4 -O 0in,0in file.dvi`
`printer` is a name of printer. “-t a4 -O 0in,0in” option might be omitted.

2. Omitted Commands

Some commands which is not required by `ieej-e.cls` are omitted. These commands are `\tableofcontents`, `\titlepage`, `\part`, `\theindex`, `headings`, `myheadings` and the related commands.

Denshi Taro (Member) was born in Kumamoto, Japan, on August 15, 1972. He received a Ph.D. degree in physics from Denshi Institute of Technology in 1995, and is presently an assistant engineer at Shin-nichi Electric Co., Ltd. He has worked on laser spectroscopy, and the development of LIDAR systems. Japan Applied Physics Society, American Physical Society member.



Denki Hanako (Non-member) was born in Okayama, Japan, on February 25, 1960. She received a Ph.D. degree in electrical engineering from Electric University in 1984, and is presently a Chief engineer at Kagoshima Electron Corp. She has worked on analysis of electromagnetic flow coupler pumps, the development of Cherenkhov radiation monitors for nuclear inspection, and the development of laser beam intensity transformation techniques. Japan Applied Physics Society, Laser Society of Japan, Optical Society of America

member.

