

Reserved Space for Title of Special Articles  
Reserved Space for Kind of Articles

## Template for Submission to Int. J. Microgravity Sci. Appl. (For Original Articles, Reports, Reviews or Research Notes)

First1 FAMILY1<sup>1,2</sup>, First2 FAMILY2<sup>2</sup> and First3 FAMILY3<sup>3</sup>

### Abstract

This is template for submission to the International Journal of Microgravity Science and Application (IJMSA). The necessary information as the author's guide is also included in this file. Please read the comments in the file. If you need further information on preparation of manuscripts and submission, please contact with the IJMSA secretariat.

**Keyword(s):** Keyword1, Keyword2, ..., Keyword-n

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### 1. Introduction

This is a  $\text{\LaTeX}$  template and author's guide for submission to the International Journal of Microgravity Science and Application (IJMSA). Since this journal requires the camera-ready manuscript, authors sometimes work hardly to keep a decent form. This template is provided to reduce such the authors efforts. Therefore, required manners and useful functions are explained in this file. In addition, some unique commands are also explained in this file.

The references are cited like this<sup>1)</sup>, this<sup>1,2)</sup>, this<sup>2-4)</sup> or this<sup>1,3,4)</sup>. However, the authors do not need to take care of the expressions because  $\text{\LaTeX}$  will automatically process the citations.

### 2. Packages and Macros

The IJMSA is provided the class file named `jasma.cls`. The four options, `a4paper`, `twocolumn`, `twoside` and `fleqn` are necessary for the IJMSA style. So authors do not touch the `\documentclass`. The packages of `amsmath`, `natbib` and `balance` are already included into the class file `jasma.cls`. The packages of `amssymb` and `bm` are recommended but some authors may want to comment out them. The `graphicx` package is also required to include figures. This package can take an option. So some authors may change the option from `dvipdfm` to `dvips` or so. The package `jasmafont` is required and should be placed at the last of the packages at the preamble. This package uses `Times` and `mathptmx` packages. The package `Times` changes the default Computer Modern (CM) font set to the PostScript-like font set, for example, Times-like and Helvetica-like fonts. Since this package does not affect the math

font, the package `mathptmx` is also included for the mathematical expressions. The authors have to make sure that these packages are already installed in your computer. Please pay attention that if authors do not use the `jasmafont`, the layout will collapse.

### 3. Manners and Rules

Some manners and rules to prepare an appropriate manuscript are described here.

#### 3.1 Page Layout

The paper size is set to ISO A4. If you want to print out your manuscript on letter-sized papers, the layout may collapse though the editorial board has not tried the letter-sized papers. All of other parameters are already set in the class file.

#### 3.2 Fonts

To keep visual uniformity throughout the journal, the CM fonts are replaced to the PostScript-like fonts by using `Times` and `mathptmx` packages in the `jasmafont` package. However, since three symbols, `\jmath` ( $j$ ), `\amalg` ( $\amalg$ ) and `\coprod` ( $\coprod$ ) can not be output in this environment, these are output by the CM font set. In addition, the summation symbol `\sum` ( $\Sigma$ ) is not beautiful, this symbol is also expressed by the CM font set like ( $\Sigma$ ). The infinite symbol ( $\infty$ ) of the CM font is also better and is used.

If you use the options of `notimes` and `nomath` for the `jasmafont` package, the CM font set is used. This is, however, not recommended and may be used for debugs or something.

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<sup>2</sup> Affiliation and address of the second author.

<sup>3</sup> Affiliation and address of the third author.

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**Table 1** This is a table sample

Items	Contents
Item1	AAA
Item2	BBB

### 3.3 Title Area

You are requested to prepare a title, author list, abstract, key-words. These must be put into the file preamble. The `\title` command allows the line feed command `\\`. Capitalize the first letter at the beginning and ending words of the title. The first letter of nouns, pronouns, verbs, adjectives, adverbs, conjunctions or prepositions of five letters or more are also capitalized, while articles, conjunctions and prepositions of four letters or fewer, and the particle “to” are never capitalized except for the first or last word.

The `\author` command also allows the line feed command. The authors are separated by commas except for the last author. The last and second last authors are separated by the word “and” without a comma. The first and family names must be shown in full. The first letter of the first name should be capitalized, while all letters of the family name should be capitalized. If some authors have different affiliations, the command `\affil` must be placed at the position just after the author name. The `\affil` command takes one option and one argument. The option can take any words used for distinguishing author affiliations.

After the `\author` command, the author must place the `\affil` command to represent actual affiliations. The same option name used in the `\author` command should be used. The three examples are provided at the preamble of this file.

### 3.4 Section Structure

There are four levels of structure, that is, `\section`, `\subsection`, `\subsubsection` and `\subsubsubsection`. The last command is not included in the standard  $\text{\LaTeX}$ . In addition, the command `\acknowledge` is provided for the acknowledgments. This command requires one argument which will be printed, for example, `\acknowledge{Acknowledgments}`. The references section is automatically generated by using the `thebibliography` environment or `\bibliography` command. At present, however, the `\bibliography` command is not recommended since the `jasma.bst` file is not tested sufficiently. If authors describe appendices, please use the command `\appendix`. The command `\appendix` is modified from the original definition and can take one option argument, which represents the number of appendices, and one argument, which represents a header. If you have one appendix, no option is required but the argument is required. This command without the option argument will generate the Appendix header, while this with the numeric option of more than 1 will generate the Appendices header. The

command `\append` corresponding to `\section` is available to define each appendix section by placing this command after the `\appendix`. The command `\subappend` corresponding to `\subsection` is also available. Please pay attention that these commands `\append` and `\subappend` work in the multiple appendices case. Therefore, only `\appendix` is required in the single appendix case.

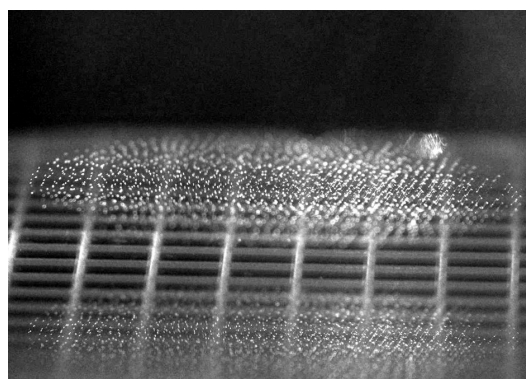
Please pay attention that the footer format is modified from the original  $\text{\LaTeX}$  format. This means that the authors may sometimes place a command named `\addfootnotespace` manually somewhere in the second column at the first page. The command `\addfootnotespace` has one argument which indicates the height of the additional space at the bottom of the second column like `\addfootnotespace{height}`. The manual insertion of `\addfootnotespace` will be required if you have no paragraphs and section headers in the second column. This may be caused if you use a long title or have many coauthors. Otherwise, the additional space will be automatically inserted. If you have any formatting troubles, please contact the editorial board.

There is another notice that the IJMSA does not support the footnote officially. Therefore, the authors should try to avoid using the footnotes. If you definitely need to use the footnotes, please contact the editorial board.

### 3.5 Tables and Figures

The tables must have horizontal and vertical rules to separate items except for vertical lines at the left and right ends. The caption begins the word “Table.” To refer the table in the text, the word “Table” should be used. The special environment `tabcenter` is provided to place a table. This environment can take an option being the same as `table` environment. The default option is set to “tb.” Other options “h” and “p” are also selected but are not recommended in this journal. The environment `tabcenter*` is also available for two-column width tables. A table sample is shown in **Table 1**.

Figures also have captions beginning the word “Fig.” To refer the figure in the text, “Fig.” for not beginning of a sentence or

**Fig. 1** This is a figure sample

$$\operatorname{erf}(z) = \frac{2}{\sqrt{\pi}} \sum_{n=0}^{\infty} \frac{(-1)^n z^{2n+1}}{n!(2n+1)} = \frac{2}{\sqrt{\pi}} \left( z - \frac{z^3}{3} + \frac{z^5}{10} - \frac{z^7}{42} + \frac{z^9}{216} - \dots \right) \quad (2)$$

$$\Gamma\left(\frac{1}{2} + n\right) = \frac{(2n)!}{4^n n!} \sqrt{\pi} = \frac{(2n-1)!!}{2^n} \sqrt{\pi} = \sqrt{\pi} \cdot \left[ \binom{n-\frac{1}{2}}{n} n! \right] \quad (3)$$

“Figure” for beginning of a sentence should be used. The special environments `figcenter` and `figcenter*` are also provided. One option can be taken as same as the `tabcenter` environment. The default value is “tb.” A figure sample is shown in **Fig. 1**.

To refer the table and figure in the main text, the commands `btref` and `bfref` can be used for tables and figures, respectively. The argument should be the same as the argument of the `label` command at the `caption` command.

### 3.6 Equations

Authors may be able to use `amsmath` functions such as `gather`, `align` and `subequations` environments though these functions are not yet tested well. Some authors may want to use `amssymb` and `bm` packages, these packages are also included in this file but you can comment out them as you wish.

Equation (1) is an example of an equation with one-column width by using the `equation` environment. No blank lines between the main text and `\begin{equation}` is recommended, while the blank lines between the main text and `\end{equation}` is allowed.

$$x^2 \frac{d^2 y}{dx^2} + x \frac{dy}{dx} + (x^2 - \alpha^2) y = 0 \quad (1)$$

Authors can use the special environment `onecoleqn`, which is provided for expression of long equations with two-column width in one column as shown as Eqs. (2) and (3). To separate the main text, a horizontal rule is put between the equation and text. This environment can take one option indicating the starting equation number. Actually, this environment is a combination of `table*` and `eqnarray` environments. Therefore, the `label` command can be placed just after each equation. You can also use `&`. If authors do not take care of a place of a two-column equation, you will see it at the top of the next page where the environment is used. This is caused by the original function of `LATEX` and `TEX`. However, the layout may be sometimes broken, for example, an equation only page may appear at the last page, vertically aligned at the middle of the page. To prevent such the layout, the authors may place the equations somewhere one page before. However, the earlier equation has the smaller equation

number. To set an appropriate number to each equation, authors can use the option `numerals` of this environment. Please read the source file to understand this environment in more detail.

Authors may express the equations with sub-numbers. To obtain such expressions, the `subequations` is convenient. The expressions are shown as Eqs. (4a) and (4b).

$$\frac{d}{dx} \left[ (1-x^2) \frac{d}{dx} P_n(x) \right] + n(n+1) P_n(x) = 0 \quad (4a)$$

$$\begin{aligned} \operatorname{erf}(z) &= \frac{2}{\sqrt{\pi}} \sum_{n=0}^{\infty} \frac{(-1)^n z^{2n+1}}{n!(2n+1)} \\ &= \frac{2}{\sqrt{\pi}} \left( z - \frac{z^3}{3} + \frac{z^5}{10} - \frac{z^7}{42} + \frac{z^9}{216} - \dots \right) \end{aligned} \quad (4b)$$

Other environments such as `gather` and `align` may also work well. Please pay attention that the authors cannot use the usual bold command such as `\bf` but can use another bold command `\bm`. Although the command conversion is inconvenient for the authors, the conversion is necessary to satisfy the font sets for the IJMSA.

Since the equation environments are complicated, there may be still some bugs. If the authors find bugs, please let us know. Such the information is very useful to improve the IJMSA class file.

### Acknowledgments

Acknowledgment is placed here.

### References

- 1) M. Ishikawa and R. Kitano: *Langmuir*, **26** (2010) 2438.
- 2) I. Yoshizaki, T. Ishikawa, S. Adachi, E. Yokoyama and Y. Furukawa: *Microgravity Sci. Tech.*, (2012), DOI:10.1007/s12217-012-9306-9.
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- 4) G. Seibert *et al.*: *A World Without Gravity*, eds. B. Fitton and B. Bat-trick, Sect. 2.3.5, 227, ESA Publication Division, Netherlands, 2001.

### Appendix

Start the appendix texts.