Prepared for submission to JCAP

JCAP: LaTeX author's manual

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Abstract. This document provides instructions for using the `jcappub.sty` LaTeX package along with some stylistic conventions. For a brief example that can be used as a template/ boilerpate please see the file example.tar.gz available in the documentation archive.

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1 The JCAP style package `jcappub.sty`

`jcappub.sty` is a LaTeX package that is designed to help authors produce preprints in a form suitable for submission to JCAP.

This package should be used with the `article` documentclass and `11pt,a4paper` options:

```
\documentclass[11pt,a4paper]{article}
\usepackage{jcappub}
```

Some useful packages are already included in `jcappub.sty`: hyperref, color, natbib (options: numbers, sort&compress), amsmath, amssymb, epsfig, graphicx.

2 Title page

The title page is created by the command `\maketitle` and can accommodate many details that are collected by specific macros (see figure 1).

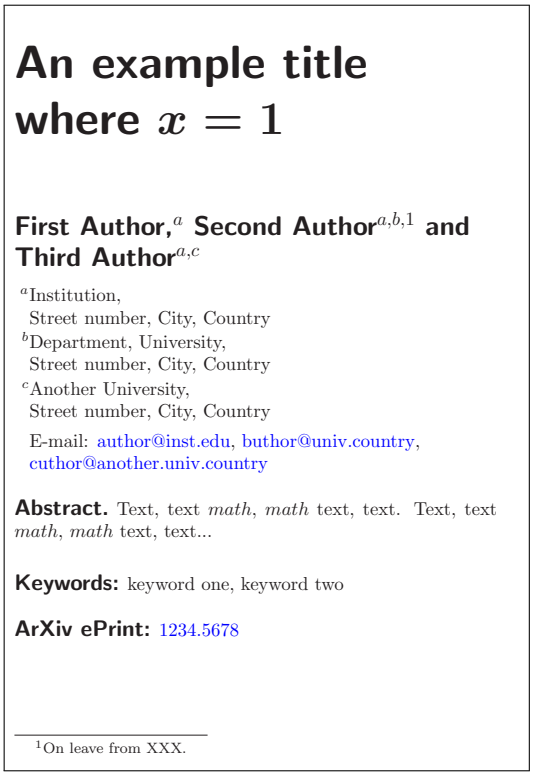
The following sections explain the macros that may be used.

2.1 Title

The title of your paper can be specified using the macro `\title{...}`.

If it contains any mathematics, then the command `\boldmath` should be placed inside the argument of the title.

Only the first letter, acronyms and a persons' name are capitalized. Also, the full stop is not needed at the end of the title, unless it is followed by "Part 1" or "Part 2" (e.g. "An example title. Part 1").



An example title where $x = 1$

First Author,[a] Second Author[a,b,1] and Third Author[a,c]

[a]Institution,
Street number, City, Country
[b]Department, University,
Street number, City, Country
[c]Another University,
Street number, City, Country

E-mail: author@inst.edu, buthor@univ.country, cuthor@another.univ.country

Abstract. Text, text *math*, *math* text, text. Text, text *math*, *math* text, text...

Keywords: keyword one, keyword two

ArXiv ePrint: 1234.5678

[1]On leave from XXX.

```
\title{An example title where \boldmath $x=1$}

\author[a]{First Author,}
\author[a,b,1]{Second Author%
\note{On leave from XXX.}}
\author[a,c]{and Third Author}

\affiliation[a]{Institution,\\
Street number, City, Country}
\affiliation[b]{Department, University,\\
Street number, City, Country}
\affiliation[c]{Another University,\\
Street number, City, Country}

\emailAdd{author@inst.edu}
\emailAdd{buthor@univ.country}
\emailAdd{cuthor@another.univ.country}

\abstract{Text, text $math$, $math$ text, text.
Text, text $math$, $math$ text, text... }

\keywords{keyword one, keyword two}

\arxivnumber{1234.5678}

\begin{document}
\maketitle
```

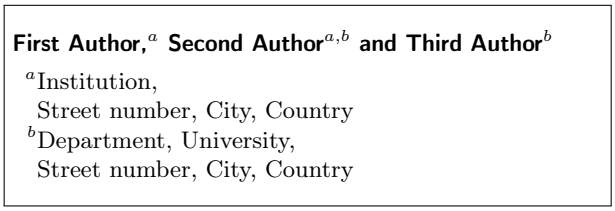
Figure 1. An example of the JCAP title page with the most common information (left), and the corresponding source code (right).

2.2 Authors and affiliations

All authors should appear on the title page together with their affiliation(s).

Authors and affiliations can be specified using the macros `\author[]{...}` and `\affiliation[]{...}`, one for each author/affiliation (see the example of figure 1).

The author name is specified within the curly brackets, while the purpose of the optional argument is to link authors and affiliations.



First Author,[a] Second Author[a,b] and Third Author[b]

[a]Institution,
Street number, City, Country
[b]Department, University,
Street number, City, Country

```
\author[a]{First Author,}
\author[a,b]{Second Author}
\author[b]{and Third Author}

\affiliation[a]{Institution,\\
Street number, City, Country}
\affiliation[b]{Department, University,\\
Street number, City, Country}
```

When all the authors share the same affiliation(s), there is no need to identify them with letters:

First Author, Second Author and Third Author
Institution,
Street number, City, Country
Department, University,
Street number, City, Country

```
\author{First Author,}
\author{Second Author}
\author{and Third Author}

\affiliation{Institution,\\
Street number, City, Country}
\affiliation{Department, University,\\
Street number, City, Country}
```

Footnote for the author. The macro `\note{...}` can be used inside `\author` to specify a footnote for that author. Its numerical identification has to be manually specified inside the square brackets of all the authors sharing that note.

First Author,[a,1] **Second Author**[a,b,1] **and Third Author**[b]
[a]Institution,
Street number, City, Country
[b]Department, University,
Street number, City, Country
...
[1]Note shared by two authors.

```
\author[a,1]{First Author,%
\note{Note shared by two authors.}}
\author[a,b,1]{Second Author}
\author[b]{and Third Author}

\affiliation[a]{Institution,\\
Street number, City, Country}
\affiliation[b]{Department, University,\\
Street number, City, Country}
```

2.3 E-mails

All authors usually appear on the first page with their email address.

Each email address can be specified using the macro `\emailAdd{...}`. If the email address contains an underscore, then it needs to be escaped with a backslash (`\emailAdd{name\_surname@domain.com}`).

2.4 Abstract

The abstract of the paper can be specified inside the macro `\abstract{...}`.

2.5 Keywords

The keywords of you paper can be specified inside the macro `\keywords{...}`.

Please note that the keywords that will appear on the published paper are those that you choose during submission, not necessarily the one you provide in the tex source.

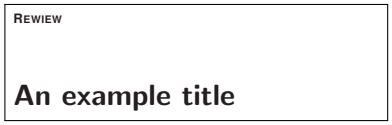
2.6 ArXiv number

You can provide the arXiv identification number of your paper by using the macro `\arxivnumber{...}`.

2.7 Additional information in the title page

The following additional information can be specified in the title page:

Subheader. If your article is an invited review, you can specify the type of your manuscript as a subtitle using the macro `\subheader{...}`.




```
\subheader{Review}

\title{An example title}
```

Collaboration. If the authors are part of a collaboration, the name of the collaboration can be specified in the macro `\collaboration{...}`.




```
\title{An example title}

\collaboration{Collaboration name}

\author{First Author,}
\author{Second Author}
\author{and Third Author}
```

If your collaboration has a logo, you can specify its image file in the macro `\collaborationImg{...}`.

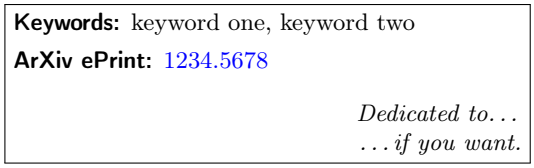



```
\title{An example title}

\collaborationImg{\includegraphics{Logo.png}}

\author{First Author,}
\author{Second Author}
\author{and Third Author}
```

Dedication. If you want to dedicate your paper, the macro `\dedicated{...}` will place the dedication in the bottom right part of the title page.




```
\dedicated{Dedicated to\ldots \\
           \ldots if you want.}
```

3 Table of contents

The table of contents is generated by the command `\maketitle` and placed after the title page.

You can suppress the table of contents with the command `\notoc` in the document preamble (i.e. before `\begin{document}`).

If you don't want the table of contents to start on a new page, use the command `\toccontinuoustrue`.[1]

[1] If you need more space before the table of contents when using this command, you can modify the spacing with `\renewcommand{\beforetookhook}{\bigskip\bigskip}`.

4 Body of the paper

4.1 General conventions

The command `\flushbottom` is used immediately after `\maketitle` to make the text fill the height of the page.

Sections and non-numbered sections. The text of a manuscript is usually divided into sections using the standard sectioning macros.
Titled paragraphs (e.g. `\paragraph{Title for the paragraph.}`) are preferred over non-numbered sections.
Usually only the first letter, acronyms and a persons' name are capitalized in the section title.

Parenthesis and capitals. Parentheses in the text should always be round (like this), and should not contain extra spaces: [this is wrong].
Capitals should be used only after full stops and not after colon, semicolon or parenthesis.

Dashes. There are four types of dashes.

1. The minus sign (−2) (LaTeX: `$-$`).
2. The hyphen connecting compounds (Kaluza-Klein, type-II) (LaTeX: `-`).
3. The en-dash describes a range (september 1–10, 1999) (LaTeX: `--`).
4. The em-dash — used for clauses — should be surrounded by spaces (LaTeX: `---`).

Emphasized text. Word or sentences within the text should preferably be emphasized using `\emph{}`. The use of **boldface** is discouraged.

Abbreviations. Figures, tables, appendices and sections are not abbreviated. Equations and references may be abbreviated as: "eq. (eqs.)", "ref. (refs.)".
Latin abbreviations ("et al.", "e.g.", "i.e.", ...) should be written without emphasis (i.e. in roman characters).

The following should be avoided: fig.(2), sec(II), appendix (A), *et.al.*, *e.g.*, eqn. 1.2.

The following are correct: figure 2, section 2, appendix A, et al., e.g., eq. (1.2).

Footnotes. Footnotes should always placed after the punctuation mark.[2]

They should begin with a capital letter and end with a full stop.

Acknowledgments. The command `\acknowledgments` starts a new non-numbered section where the acknowledgments can be placed. It usually resides before the bibliography, or at the end of the introduction.

[2] Like this.

Appendices. Appendices should have a proper title different from "Appendix A, B. . . ".

To start the appendices' section, the command `\appendix` will set the correct alphabetic numbering for sections and equations.

other text.

A First appendix

A.1 Subsection

Text text text text text.

B Second appendix

Text text text text text.

```
other text.

\appendix
\section{First appendix}

\subsection{Subsection}
Text text  text  text  text  text  text

\section{Second  appendix}
Text text  text  text  text  text  text
```

Cross referencing. To easily reference sections, figures, tables, etc. throughout your paper, please use the commands `\label{marker}` and `\ref{marker}`. Labeled equations can also be cited using the command `\eqref{marker}`.

4.2 Mathematics

Equations are numbered consecutively according to the section: (1.1), (1.2), . . . , (A.1), (A.2), . . .

Some conventions are adopted:

- Parenthesis surrounding fractions should be big enough for their contents

$$\mu_B^j = \left(\frac{1}{Q}\right) w_\alpha^j \eta_B^\alpha \,,$$

- Multiple equations should be aligned on the equal signs when possible (or on $>$, $\geq$, $\sim$, $\leftrightarrow$, etc.)

$$\begin{aligned} \mu_B^j &= \frac{1}{Q} w_\alpha^j \eta_B^\alpha \,, \\ \bar{w}_j^\alpha \bar{\mu}_j^B &= \frac{1}{Q} \bar{\eta}_\alpha^B \,. \end{aligned}$$

The same alignment rule holds for equations continued on multiple lines,

$$\begin{aligned} J = {} & \frac{1}{2} P\gamma\pi \left[\gamma(\gamma^2+1)\left\{(\alpha^2+\beta^2)^2 - 2(\alpha^2-\beta^2)+1\right\}\right] \times \\ & \times \Bigg\{ (\alpha+\beta)\left\{(\alpha^2+\beta^2)^2 + 2\gamma^2(\alpha^2-\beta^2)+\gamma^4\right\} + \\ & \qquad + d\left[\left\{(\alpha^2+\beta^2)^2 - 2(\alpha^2-\beta^2)+\gamma^4\right\} + \frac{\gamma^2+1}{\alpha^2+\beta^2}(3\alpha^2-\beta^2-1)\right] \Bigg\} \\ & \geq 0 \,. \end{aligned}$$

- Punctuation at the end of the equation should be consistent with the text following.
- If the equation lies on multiple lines, the equation number should appear on the last line or in the middle of the block (if possible).

- If two or more equations are short, they can also be written on a single line, separated by `\quad` or `\qquad`. For example:

$$\mu_B^j = \frac{1}{Q} w_\alpha^j \eta_B^\alpha \,, \qquad \bar{\mu}_j^B = \frac{1}{Q} \bar{\eta}_\alpha^B \bar{w}_j^\alpha \,.$$

4.3 Tables and figures

Tables and figures are numbered consecutively throughout the article. They always need a caption describing their contents which should be placed below each figure/table.

All figures and tables should be referenced in the text and should be placed at the top of the page (not between paragraphs within the text). A collection of tables or figures at the end of the paper should be avoided insofar as possible.

If you include pictures or other material that has already been published elsewhere, please obtain permission from the copyright owner(s) before incorporating it in your article.

5 Bibliography

JCAP uses the standard number-only system for references in the text with the enhancements given by natbib's sort&compress option. References in the bibliography should appear in the order that they are cited in the text.

Some important rules:

- Every work should appear only once in the reference list.
- It is not allowed to have multiple citations for the same article. Also self-citations are not permitted (a reference to the paper in its own bibliography).

References. The information provided for each reference should be as complete as possible.

articles: author(s), title, journal name, volume, year, page number, arXiv-number. Additional information (erratum, addendum) can be specified too. For example:

> M. Anselmino, A. Efremov and E. Leader, *The theory and phenomenology of polarized deep inelastic scattering*, *Phys. Rept.* **261** (1995) 1 [*Erratum ibid* **281** (1997) 399] [hep-ph/9501369].

books: author(s), title, publisher and year. For example:

> R. Penrose and W. Rindler, *Spinors and Space-time, Vol. 2: Spinor and twistor methods in space-time geometry*, Cambridge University Press, Cambridge U.K. (1986), pg. 501.

technical report/note: author(s), title, report number. For example:

> CMS collaboration, *Technical Design Report Vol. 1*, CERN-LHCC-2006-001.

proceeding/talk: author(s), title, conference information, year. For example:

> HERMES collaboration, F. Ellinghaus, *DVCS at HERMES: Recent Results*, in *Proceedings of the Workshop on Exclusive Reactions at High Momentum Transfer*, Jefferson Lab, Newport News, U.S.A., May 2007.

data set/software author(s), title, repository, DOI, year. Please note that not all info are mandatory. For example:

> K. Marzouk, A. Maraio and D. Seery, *Supporting dataset for "Non-Gaussianity in D3-brane inflation", arXiv:2105.03637* 10.5281/zenodo.4742082.