

Citation and Bibliography Styles Through Examples

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Abstract

This document describes how to (i) modify citation styles in the body text, (ii) make your own .bst (bibliography style) files, and (iii) modify bibliography styles.

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1 Introduction

Suppose that you are requested to strictly follow the reference style by a book publishing company. The reference style regulates:

- **Citation Style:** Cite references in text by number in parentheses, in order of appearance (e.g., The algorithms in literature [1-3,5,22]).
- **Bibliography Style:** Do not use boldface, italics, or underscoring. List all known coauthors. For more specific styles, see the following examples.

1. AW Warner, DL White, WA Bonner. Real-time Fourier transformation via acousto-optics. J Appl Phys 43:4489-4493, 1972. (*for journal papers*)
2. D Dzombak. Elements of Power Systems Analysis. 3rd ed. New York: McGraw-Hill, 1975, pp. 125-134. (*for books*)
3. KJ Kim, UM Diwekar, Solvent selection under uncertainty. In: GV Recklitis, ed. Clean Solvents Design. New York: Marcel Dekker, 2002, pp.169-174. (*for book chapters*)

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4. S Sorensen, S Skogestad, Multivessel columns. Proceedings of Advances in Batch Distillation, Pittsburgh, 2002, pp. 270-282. (*for meetings*)

Some difficult parts of this style are

- Pure first name initial (no periods) + Last name (e.g., KJ Kim),
- Periods after the author field and journal, book, book chapter, and meeting titles. Commas elsewhere,
- Year after page numbers in journals while year before page numbers in books, book chapters, and meetings (if any), and
- ‘In: ’ in book chapters but no ‘In: ’ in meetings.

Now how can we do this? Of course you can use the `\thebibliography` environment. However, here we want to use the advantages of `BIBTEX`.¹ If you can find a proper `.bst` (bibliography style) file from CTAN (<http://www.ctan.org>) or other mirror sites, use that file. Otherwise, you have to design your own `.bst` file.²

I hope this document will help you to do these jobs. Section 2 explains how to modify citation styles in the body text, Section 3 describes how to create a `.bst` file that is close to the final style, and Section 4 provides how to tune up the `.bst` file for your final purpose. Enjoy :-))

2 Modifying Citation Styles

This job is relatively easy. Doeun’s daddy (<http://www.doeun.pe.kr/uselatex/>) strongly recommends the `natbib` package for reference citation. This package, developed by Patrick W. Daly³, gives us high degree of freedom. The following examples are taken from his `natbib.dvi` file.

In the author-year citation mode with an author-year `.bst` file,

<code>\citet{jon90}</code>	\Rightarrow	Jones et al. (1990)
<code>\citet[Chap. 2]{jon90}</code>	\Rightarrow	Jones et al. (1990, Chap. 2)
<code>\citep{jon90}</code>	\Rightarrow	(Jones et al., 1990)
<code>\citep{jon90, jam91}</code>	\Rightarrow	(Jones et al., 1990; James et al., 1991)
<code>\citet*{jon90}</code>	\Rightarrow	Jones, Baker, and Williams (1990)
<code>\citep*{jon90}</code>	\Rightarrow	(Jones, Baker, and Williams, 1990)

In the number citation mode with an author-year `.bst` file,

<code>\citet{jon90}</code>	\Rightarrow	Jones et al. [21]
<code>\citep{jon90}</code>	\Rightarrow	[21]
<code>\citep{jon90, jam91}</code>	\Rightarrow	[21,32]

In the number citation mode with a number `.bst` file, only `\cite{}` is valid and generates citation number in []. Thus from these three modes, it is better to make an author-year `.bst` file.

¹I assume that you know how to use `BIBTEX`.

²Of course you do not need to scratch it!

³One of the authors of *A Guide to L^AT_EX: Document Preparation for Beginners and Advanced Users*.

The above expressions are default. Now we want to use citation numbers in (), instead of []. There are many options; but here I only show what I did in my recent document.

```
\usepackage[sort&compress]{natbib} % Natbib citation style package
\bibpunct{(}{}){,}{n}{}{} % More options for Natbib
```

The option [sort&compress] generates sorted and compressed number citations (e.g., [1,2,9,3,14,16,15] ⇒ [1-3,9,14-16]). The options in \bibpunct creates curly parentheses () (instead of []), ‘,’ divider between citation numbers (instead of ‘;’), and number citation from the option {n} (default {a}).

For more information, please read the manual, natbib.dvi. One more tip from this file is *superscript* citation as seen in *Nature*. Do the following work in the preamble and use \cite{key} in the body text.

```
\usepackage[sort&compress]{natbib}
\citestyle{nature} % Superscript citation style (Nature style)
```

3 Making a .bst File

To make your own .bst file, custom-bib package, also developed by Patrick W. Daly, is the best solution. Get makebst.ins, makebst.dtx, and merlin.mbs from CTAN (<http://www.ctan.org>) or other mirror sites. The merlin.mbs file is a master bibliography style file. So your .bst file is extracted from this .mbs file under given options that you will now choose now.

1. Type latex makebst.ins in the command mode. This will generate makebst.tex and makebst.drv.
2. Type latex makebst to make your own .bst file. You will be asked a lot of questions regarding the reference options. If you are not sure about the questions, just select the default(*). Some important questions (not all the questions!) are given below in order of appearance. *Remember that we want to stick on the bibliography styles described in Section 1. Also remember that there is no way to go back and correct an error during this job.*⁴
 - (a) The first question that you will meet is Do you want a description of the usage? ⇒ yes.
 - (b) Enter the name of the MASTER file ⇒ default.
 - (c) Name of the final OUTPUT .bst file? ⇒ type your file name (here, imsi).
 - (d) Do you want verbose comments? ⇒ yes.
 - (e) <<STYLE OF CITATIONS: ⇒ (a) Author-year with some non-standard interface.
 - (f) <<AUTHOR-YEAR SUPPORT SYSTEM ⇒ Natbib for use with ~.
 - (g) <<ORDERING OF REFERENCES ⇒ (c) Citation order (unsorted ...).
 - (h) <<AUTHOR NAMES ⇒ (x) Surname + pure initials (Smith JF). Remember that the style JF Smith is not provided. We will modify later!

⁴Do not worry. You can correct it later.

- (i) <<DATE POSITION ⇒ (*) Date at end. Remember that we need year after page numbers in journals but year before page numbers in books, book chapters, and meetings.
- (j) <<JOURNAL NAMES ⇒ (x) Dottles journal names as 'Phys Rev'. This is required by a book company in Section 1.
- (k) <<VOLUME PUNCTUATION ⇒ (*) Volume with colon as vol(num):ppp.
- (l) <<JOURNAL NAME PUNCTUATION ⇒ (x) Space after journal name. This is required by a book company in Section 1.
- (m) <<PUBLISHER POSITION ⇒ (e) Publisher after edition.
- (n) <<PUNCTUATION BETWEEN SECTIONS ⇒ (t) Period after titles of articles, books, etc else commas. We need a period after the author field (e.g., JF Smith, KJ Kim. ~).
- (o) <<PUNCTUATION AFTER 'IN' ⇒ (c) Colon after 'in' (as 'In: ..'). But we do not need In: in meetings (i.e., in collections and in proceedings).
- (p) Finished! Batch job written to file 'imsi.dbj' Shall I now run this batch job? <NO> ⇒ If you say yes, it creates your .bst file.

Now all done! If you want to change some options that you made, open the .dbj (document batch job ?) file.⁵ The questions are in CAPITAL LETTERS, and the options that you made are uncommented at the first column. Comment out the wrong choice by putting % in the first column, and uncomment the choice that you want to select by removing %. Then type latex imsi.dbj, resulting in a new imsi.bst file.

4 Modifying Bibliography Styles

Of course the custom-bib package cannot produce infinite number of styles that we or book publishing companies want. Thus we need some modifications to the generated .bst file.

The imsi.bst file produces the reference like this:

[12] Kim KJ, Urmila UM, Solvent selection under uncertainty. In: Proceedings of Clean Solvents Symposium, Pittsburgh, 1980, pp. 120-125.

[13] Robinson C, Elements of Fractional Distillation. New York: McGraw-Hill, forth edn., 1950.

First, we want to change the reference numbering system from [12] to 12. This can be done in the preamble by putting the following code:

```
\makeatletter                                % Reference list option change
\renewcommand\@biblabel[1]{#1.}              % from [1] to 1.
\makeatother                                  %
```

The option #1. can be anything that you want to change. For example, #1) . creates "1)." in the reference list.

⁵This is also an ASCII file. This manual editing is appropriate only when you made a wrong *independent* choice. For example, you may not select author-number options under the number citation system.

Second, we want to switch the order of surname and first name. Open the `imsi.bst` file. Go down to find the `FUNCTION {format.names}` code. You will see a line similar to `"{vv~}{ll}{ f}{j}{ jj}"`. The letter `vv` is the von part (e.g., von Neumann), `ll` is the last name part, `ff` is the first name part, and `jj` is the junior part. A double letter (e.g., `ll`) takes full name while a single letter (e.g., `f`) abbreviates full name. Thus the option creates like "Robinson C" since there is no von and junior parts. So in order to switch, just change the order like this `"{f}{~}{vv~}{ll}{ jj}"`.

Third, we want to put `'.'` after the author field. Go down to find the `FUNCTION {article}` code. Below the author `format.key` output line, insert a new `.sentence` line. According to the Step 2-(n), `<<PUNCTUATION BETWEEN SECTIONS` in Section 3, this insertion will put period at the end of the author field.

Forth, we want to remove `'In: ...'` in proceedings and meetings. Go down to the `FUNCTION {incollection}` code. At the line `format.in.ed.booktitle "booktitle" output.check`, change to `format.booktitle "booktitle" output.check` (i.e., remove `.in.ed`). Do the same thing for `FUNCTION {inproceedings}`.

Fifth, we want to move edition after a book title. Go to the `FUNCTION {book}` code. Move the `format.edition` output line to just above the `format.number.series` output line.

Sixth-Assignment?, Put the year before the author names *only* in books.⁶ Hint: Go to `FUNCTION {book}` and look at `format.date "year" output.check`. Move this line to a proper place.

Due to my poor knowledge about the language (postfix stack language) used in a `.bst` file, I could only provide minimal hacking tips for the given example. For more information read `btXHak.dvi` and `btXbst.doc` in the document repository of your \TeX file system.

5 End Notes

If you find any mistakes or have any suggestions, please feel free to contact the author.

⁶This style is ridiculous. But try it for your practice.