

**mcite:**  
Multiple Citations on One Key

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**Abstract**

This  $\LaTeX_{\epsilon}$  package provides support for collapsing multiple citations into one, as customary in physics journals.

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## 1 Introduction

Imagine we want to refer to the standard model [1] of particle physics. Instead of the standard  $\text{BIB}\TeX$  [2] format

- [1] Sheldon Glashow. Partial symmetries of weak interactions. *Nucl. Phys.*, 22:579, 1961.
- [2] Abdus Salam. Weak and electromagnetic interactions. In W. Svartholm, editor, *Elementary Particle Theory*, page 367, Stockholm, 1968. Almqvist and Wiksell.
- [3] Steven Weinberg. A model of leptons. *Phys. Rev. Lett.*, 19:1264, 1967.

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it is customary in physics journals to collapse such references into one

- [1] Sheldon Glashow, Nucl. Phys. **22** (1961) 579; Abdus Salam, in: W. Svartholm (ed.), *Elementary Particle Theory*, p. 367, Stockholm, 1968; Steven Weinberg, Phys. Rev. Lett. **19** (1967) 1264.

The slight typographical changes are easily taken care of by changing the `BIBTeX` style, i.e. by using `phaip.bst`. The hard part is to convince `BIBTeX` to collapse the entries. `mcite` takes care of that.

`\cite` This package overloads the `LATEX` [3] `\cite` command. All keys starting with a `*` (which should be sufficiently unlikely in a `BIBTeX` key) will be added to the previous item. For example the following reference [4, 3, 1] was created by `\cite{texbook,latex,*latex-companion,Glashow,*Salam,*Weinberg}`.

## Hacking the BibTeX Style

With the standard `BIBTeX` styles, it is almost impossible to provide proper punctuation (i.e. “;” between collapsed items). In principle one could play tricks with an active “.”, but there are too many special cases in real life `BIBTeX` entries that can go wrong. Fortunately, it is fairly easy to customize `BIBTeX` styles for our purposes.

Almost all `BIBTeX` styles known to (wo)mankind contain a function

```
FUNCTION {fin.entry}
{ add.period$
  write$
  newline$
}
```

removing the `add.period$` and escaping the `newline$` with `\relax` will take care of the paragraph breaks and allow `mcite` to provide the proper punctuation:

```
FUNCTION {fin.entry}
{ write$
  "\relax" write$
  newline$
  "\relax" write$
}
```

Note that `%` would be almost as good as `\relax` but the latter also works if the `\catcode` of `%` has been changed.

In the function `begin.bib`, the `\begin{thebibliography}` should be replaced by `\begin{mcbibliography}`. Similarly, in `end.bib` the `\end{thebibliography}` by `\end{mcbibliography}`. The `mcbibliography` environment will inform `mcite` that it has to provide the punctuation.

## Bugs and Deficiencies

The following bugs and deficiencies are known:

1. `mcite` only works with unsorted bibliography styles. Without modifications to `BIBTeX`, it seems impossible to support sorted bibliography styles.
2. `mcite`'s `\cite` is less forgiving about bogus spaces. This can be fixed.

## 2 Implementation

It's is good practice to identify this version of this package. We do this by parsing an RCS Id string and storing the result in the conventional TeX control sequences:

```
1 \langle *package\rangle
2 \def\fileversion{v0.04}
3 \NeedsTeXFormat{LaTeX2e}
4 {\def\RCS#1#2\endRCS{%
5   \ifx$#1%
6     \@RCS $#2 \endRCS
7   \else
8     \@RCS $*: #1#2$ \endRCS
9   \fi}%
10 \def\@RCS $#1: #2, v #3 #4 #5 #6$ \endRCS{%
11   \gdef\filename{#2}%
12   \gdef\filerevision{v#3}%
13   \gdef\filedate{#4}%
14   \gdef\docdate{#4}}%
15 \RCS $Id: mcite.dtx, v 1.6 1996/01/01 23:52:29 ohl Exp $ \endRCS}%
```

And now the standard procedure:

```
16 \ProvidesPackage{mcite}[\filedate\space multiple citations]
17 \typeout{Package: 'mcite'
18   \fileversion\space <\filedate> (tho) PRELIMINARY TEST RELEASE}
19 \wlog{English documentation \spaces<\docdate> (tho)}
```

### 2.1 Collecting Information

```
20 \def\@enamedef#1{\expandafter\edef\csname #1\endcsname}
21 \def\mc@single#1{\global\@enamedef{mc*sg*#1}{}}
22 \def\mc@head#1#2{\global\@enamedef{mc*hd*#1}{#2}}
23 \def\mc@tail#1#2{\global\@enamedef{mc*tl*#1}{#2}}
24 \def\mc@ifsingle#1#2#3{\@ifundefined{mc*sg*#1}{#3}{#2}}
25 \def\mc@ifhead#1#2#3{\@ifundefined{mc*hd*#1}{#3}{#2}}
26 \def\mc@iftail#1#2#3{\@ifundefined{mc*tl*#1}{#3}{#2}}
27 \def\mc@thehead#1{\@nameuse{mc*tl*#1}}
28 \def\mc@thetail#1{\@nameuse{mc*hd*#1}}
```

`\mcite` We are overloading the original `\cite` command such that `\cite{latex,*latex-companion, texbook}` will give “[3, 4]”.

```
29 \let\orig@cite\cite
30 \def\mcite{%
31   \@ifnextchar[%
32     {\PackageWarning{mcite}%
33       {optional argument to \protect\cite\space not supported}%
34       \@tempswatruetrue
35       \expandafter\mc@citex\mc@gobbleopt}%
36     {\@tempswatruetrue
37       \mc@cite}}
```

Gobble up all optional arguments

```
38 \def\mc@gobbleopt[#1]{}
```

`\cite` If we postpone the overloading of `\cite` until the `\begin{document}`, we can coexist with `cite.sty`. If we were to do it now, we would have to demand that `cite.sty` is loaded *before* `mcite.sty`.

```
39 \AtBeginDocument{\let\cite\mcite}
```

`\mc@cite` First of all: expand the argument:

```
40 \def\mc@cite#1{%
41   \edef\mc@temp{#1}%
42   \expandafter\mc@cite@\expandafter{\mc@temp}}
```

Here we do the actual “preprocessing” of the `\cite` keys.

```
43 \def\mc@cite#1{%
44   \mc@firsttrue
45   \@for\mc@@@=#1\do{%
```

It the key starts with a `*`, mark it as tail. Otherwise mark it as head.

```
46     \expandafter\mc@ifstar\mc@@@\sentinel%
47     {\ifmc@first
48       \PackageWarning{mcite}%
49       {tail ‘\mc@key’ appears as first item in \protect\cite}%
50       \mc@dohead
51     \else
52       \mc@dotail
53     \fi}%
54     {\mc@dohead}%
```

Write a `\citation` command to the `.aux` file in any case. This gives some duplication but keeps things in order.

```
55     \if@filesw
56       \immediate\write\@auxout{\string\citation{\mc@key}}%
57     \fi}%
58   \expandafter\orig@cite\expandafter{\mc@list}}
```

```
59 \def\mc@dohead{%
60   \mc@iftail{\mc@key}%
61   {\PackageWarning{mcite}%
62     {head ‘\mc@key’ already used as tail of ‘\mc@thehead{\mc@key}’}}%
63   }%
64   \mc@thead{\mc@key}{}%
65   \edef\mc@curhead{\mc@key}%
66   \ifmc@first
67     \mc@firstfalse
68     \edef\mc@list{\mc@key}%
69   \else
70     \edef\mc@list{\mc@list,\mc@key}%
71   \fi}
```

```
72 \def\mc@dotail{%
73   \mc@ifhead{\mc@key}%
74   {\PackageWarning{mcite}%
75     {tail ‘\mc@key’ already used as head}}%
76   }%
77   \mc@tail{\mc@key}{\mc@curhead}}
```

```
78 \def\mc@ifstar#1#2\sentinel#3#4{%
79   \ifx*#1%
```

```

80   \def\mc@key{#2}%
81   #3%
82   \else
83     \def\mc@key{#1#2}%
84     #4%
85   \fi}
86 \newif\ifmc@first

```

## 2.2 Producing the Output

The simplest approach is to just drop the `\@bibitem` if we're processing a continuation (it is just an `\item` with associated `.aux` file action):

```

87 \let\orig@bibitem\@bibitem
88 \def\@bibitem#1{%

```

If the `BIBTEX` style supports `mcite`, we have to provide punctuation ourselves.

```

89   \ifmc@bstsupport
90     \mc@iftail{#1}%
91     {;\space\ignorespaces}%
92     {\ifmc@first\else.\fi\orig@bibitem{#1}}
93     \mc@firstfalse
94   \else
95     \mc@iftail{#1}%
96     {\ignorespaces}%
97     {\orig@bibitem{#1}}%
98   \fi}%
99 \newif\ifmc@bstsupport
100 \mc@bstsupportfalse

```

We can't handle `\bibitem`s with an optional argument; tell the user.

```

101 \def\@lbibitem[#1]#2{%
102   \PackageError{mcite}%
103     {You can't use the optional argument of \protect\bibitem}%
104     {Hey, *I* have to fool around with the labels!}%
105   \@bibitem{#2}}

```

The `mcbibliography` environment instructs `mcite` to provide its own punctuation.

```

106 \def\mcbibliography{%
107   \mc@bstsupporttrue
108   \mc@firsttrue
109   \thebibliography}
110 \def\endmcbibliography{%
111   .%
112   \endthebibliography}

```

That's it!

```

113 </package>

```

## References

- [1] Sheldon Glashow. Partial symmetries of weak interactions. *Nucl. Phys.*, 22:579, 1961.

- Abdus Salam. Weak and electromagnetic interactions. In W. Svartholm, editor, *Elementary Particle Theory*, page 367, Stockholm, 1968. Almquist and Wiksell.
- Steven Weinberg. A model of leptons. *Phys. Rev. Lett.*, 19:1264, 1967.
- [2] Oren Patashnik. `BIBTEXXing`. Documentation for general `BIBTEXX` users, 8 February 1988.
- Oren Patashnik. Designing `BIBTEXX` styles. The part of `BIBTEXX`'s documentation that's not meant for general users, 8 February 1988.
- [3] Leslie Lamport. *L<sup>A</sup><sub>TEX</sub>: A Document Preparation System*. Addison-Wesley, Reading (Mass.), 2nd edition, 1994.
- Michel Goossens, Frank Mittelbach, and Alexander Samarin. *The L<sup>A</sup><sub>TEX</sub> Companion*. Addison-Wesley, Reading (Mass.), 1994.
- [4] Donald E. Knuth. *The T<sub>E</sub>Xbook*. Addison-Wesley, Reading (Mass.), 1986.

## A Driver File

In general we will of course format this documentation with itself.

```

114 <*driver>
115 \documentclass[a4paper]{article}
116 \usepackage{doc}
117 \usepackage{mcite}
118 \EnableCrossrefs
119 \RecordChanges
120 \CodelineIndex
121 \makeatletter
122 \def\bitem#1{\item[\@biblabel{#1}]}
123 \makeatother
124 \def\MCITE/\texttt{mcite}
125 \DoNotIndex{\, \advance, \baselineskip, \batchmode, \begin, \catcode, \char}
126 \DoNotIndex{\CodelineIndex, \csname, \def, \divide, \docdate, \DocInput}
127 \DoNotIndex{\documentclass, \else, \emph, \EnableCrossrefs, \end, \endcsname}
128 \DoNotIndex{\errmessage, \errorstopmode, \expandafter, \fbox, \fi, \filedate}
129 \DoNotIndex{\filename, \fileversion, \font, \fontencoding, \fontfamily}
130 \DoNotIndex{\fontseries, \fontshape, \fontsize, \gdef, \goodbreak, \hfil}
131 \DoNotIndex{\hoffset, \hskip, \ifcase, \ifx, \InputIfFileExists, \item, \let}
132 \DoNotIndex{\line, \LoadClass, \makebox, \mbox, \multiply, \NeedsTeXFormat}
133 \DoNotIndex{\newdimen, \newenvironment, \newif, \nobreak, \normalfont}
134 \DoNotIndex{\normalsize, \nullfont, \or, \oval, \pagestyle, \par, \parbox}
135 \DoNotIndex{\parindent, \parskip, \PassOptionsToClass, \ProcessOptions}
136 \DoNotIndex{\ProvidesClass, \put, \quad, \raisebox, \RecordChanges, \relax, \rule}
137 \DoNotIndex{\selectfont, \space, \ss, \texttt, \textwidth, \the, \thispagestyle}
138 \DoNotIndex{\topmargin, \usepackage, \voffset, \vskip, \vspace, \wlog}
139 \begin{document}
140 \bibliographystyle{unsrt}%%{physics}
141 \DocInput{mcite.dtx}
142 \end{document}
143 </driver>

```

## B Copying

`mcite` is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2, or (at your option) any later version.

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