

**mcite:**  
Multiple Citations on One Key

Thorsten Ohl\*

Technische Hochschule Darmstadt  
Schloßgartenstr. 9  
D-64289 Darmstadt  
Germany

April 4, 1996

**Abstract**

This L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub> package provides support for collapsing multiple citations into one, as customary in physics journals.

## Contents

<b>1</b>	<b>Introduction</b>	<b>1</b>
<b>2</b>	<b>Implementation</b>	<b>3</b>
2.1	Collecting Information . . . . .	3
2.2	Producing the Output . . . . .	5
<b>A</b>	<b>Driver File</b>	<b>6</b>
<b>B</b>	<b>Copying</b>	<b>7</b>

## 1 Introduction

Imagine we want to refer to the standard model [1] of particle physics. Instead of the standard B<sup>B</sup>T<sub>E</sub>X [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. Almquist and Wiksell.
- [3] Steven Weinberg. A model of leptons. *Phys. Rev. Lett.*, 19:1264, 1967.

---

\*e-mail: Thorsten.Ohl@Physik.TH-Darmstadt.de

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 Bib<sub>T<sub>E</sub>X</sub> 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 T<sub>E</sub>X control sequences:

```
1 <*package>
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     \@tempswatrue
35     \expandafter\mc@citex\mc@gobbleopt}%
36   {\@tempswatrue
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{%
```

If 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@head{\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. `BIBTEXing`. Documentation for general `BIBTEX` users, 8 February 1988.

Oren Patashnik. Designing `BIBTEX` styles. The part of `BIBTEX`'s documentation that's not meant for general users, 8 February 1988.

- [3] Leslie Lamport. *L<sup>A</sup>T<sub>E</sub>X: A Document Preparation System*. Addison-Wesley, Reading (Mass.), 2nd edition, 1994.

Michel Goossens, Frank Mittelbach, and Alexander Samarin. *The L<sup>A</sup>T<sub>E</sub>X Companion*. Addison-Wesley, Reading (Mass.), 1994.

- [4] Donald E. Knuth. *The T<sub>E</sub>Xbook*. Addison-Wesley, Reading (Mass.), 1986.

## Index

The italic numbers denote the pages where the corresponding entry is described, numbers underlined point to the definition, all others indicate the places where it is used.

```

AtBeginDocument= \subitem *AtBeginDocument, 96, 41, 42
                  immediate= \subitem *immediate, 56
bibitem= \subitem *bibitem, 103
          thetail= \subitem thetail+, 27, 62
bibliographystyle= \subitem *bibliographystyle, 124
bitem= \subitem *bitem, 102
        bstsupportfalse= \subitem bstsupportfalse+, 100
        bstsupporttrue= \subitem bstsupporttrue+, 107
citation= \subitem *citation, 106
cite= \subitem *cite, 87, 92, 97
      citex= \subitem citex+, 35
do= \subitem *do, 45
DoNotIndex= \subitem *DoNotIndex, 59
            detail= \subitem detail+, 52, 72
            packageWarning= \subitem *PackageWarning, 32, 4
edef= \subitem *edef, 41, 65
endmcbibliography= \subitem *endmcbibliography, 16
endRCS= \subitem *endRCS, 4, 6
endthebibliography= \subitem *endthebibliography, 42
                  ifhead= \subitem ifhead+, 25, 73
filerevision= \subitem *filerevision, 24
              ifsingle= \subitem ifsingle+, 46, 78
              ifstar= \subitem ifstar+, 78
              string= \subitem *string, 56
global= \subitem *global, 21, 26, 60, 90, 95
        key= \subitem key+, 64
files= \subitem files+, 55
bstsupport= \subitem bstsupport+, 21
first= \subitem first+, 66, 77
        tail= \subitem tail+, 23
        write= \subitem *write, 56

```

## 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.

`mcite` is distributed in the hope that it will be useful, but *without any warranty*; without even the implied warranty of *merchantability* or *fitness for a particular purpose*. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 675 Mass Ave, Cambridge, MA 02139, USA.