

# BIBTEX

A tutorial

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# The standard bibliography

It was shown in `\cite{b1}` ...

```
\begin{thebibliography}{99}
```

...

```
\bibitem{b1} Max Meier, \textsl{The final theory}, Springer 1999
```

...

```
\end{thebibliography}
```

It was shown in [7] ...

## References

...

[7] Max Meier, *The final theory*, Springer 1999

# The standard bibliography II

It was shown in `\cite{b1}` ...

```
\begin{thebibliography}{99}
```

...

```
\bibitem[MM99]{b1} Max Meier, \textsl{The final theory}, Springer 1999
```

...

```
\end{thebibliography}
```

It was shown in [MM99] ...

## References

...

[MM99] Max Meier, *The final theory*, Springer 1999

# Appearance of citations

number-only	... as shown in [34] ...	<code>\usepackage{cite}</code>
author-date	... as shown in (Maier 2003) ...	<code>\usepackage{natbib}</code>
short-title	as shown in <i>Maier, Final Theory</i> ...	<code>\usepackage{jurabib}</code>
footnotes		<code>jurabib, footbib</code>
several bibliographies		<code>multibib, chapterbib,</code> <code>bibunit</code>
...		

# The cite package

```
\usepackage[...]{cite}
```

- ▶ without this package, "`see \cite{wbl1, book3, meier3}`"  
results in, e.g., `see [2,1,3]`
- ▶ with the package: `see [1-3]`

## Options

- ▶ `space`, `nospace` – more or less space after comma between citations  
`[1, 3, 5]` or `[1,3,5]` or default: `[1, 3, 5]`
- ▶ `nocompress` – `[1, 2, 3, 4, 7, 9, 10, 11]` instead of `[1-4, 7, 9-11]`
- ▶ `nosort` – switch off sorting of entries
- ▶ `nobreak` – forbid linebreaks before and in the citation (default: strongly discouraged, but not forbidden)
- ▶ `superscript` – formats citations as superscript: `see1-3`

- ▶ optional argument: `\cite[pp. \, 35--67]{book3}` provides [3, pp. 35–67]
- ▶ `\renewcommand\citeleft{({}`  
`\renewcommand\citeright{)}}`  
provides (3, pp. 35–67)

# The natbib package

```
\usepackage[...]{natbib}
```

## Textual citation

```
\citet{jon90}           Jones et al. (1990)  
\citet[chap. 2]{jon90} Jones et al. (1990, chap. 2)
```

## Parenthetical citation

```
\citep{jon90}           (Jones et al., 1990)  
\citep[chap. 2]{jon90} (Jones et al., 1990, chap. 2)  
\citep[see][]{jon90}    (see Jones et al., 1990)  
\citep[see][chap. 2]{jon90} (see Jones et al., 1990, chap. 2)
```

## Multiple citations

```
\citet{jon90,jam91}     Jones et al. (1990); James et al. (1991)  
\citep{jon90,jam91}     (Jones et al., 1990; James et al. 1991)  
\citep{jon90,jon91}     (Jones et al., 1990, 1991)  
\citep{jon90a,jon90b}   (Jones et al., 1990a,b)
```

# The natbib package II

## Supressed parentheses

<code>\citealt{jon90}</code>	Jones et al. 1990
<code>\citealp{jon90}</code>	Jones et al., 1990
<code>\citealp{jon90,jam91}</code>	Jones et al., 1990; James et al., 1991
<code>\citealp[p. 32]{jon90}</code>	Jones et al., 1990, p. 32

## Partial citations

<code>\citeauthor{jon90}</code>	Jones et al.
<code>\citeyear{jon90}</code>	1990

## Forcing upper case

when <code>\citet{dRob98}</code>	della Robbia (1998)
then <code>\Citet{dRob98}</code>	Della Robbia (1998)

## Options

- ▶ `round, square, curly, angle` – parentheses `()`, `[]`, `{}`, `<>`
- ▶ `colon, comma` – separator for multiple citations: `;` or `,`



# The natbib package III

- ▶ natbib should be used with BIB<sub>T</sub>E<sub>X</sub>
- ▶ Manual use: put the necessary data into the optional `\bibitem` argument:  
`\bibitem[Bennett et~al.(1996)]{BenFucSmo96}`  
Ch. H. Bennett, D. P. DiVincenzo and W. K. Wootters,  
`\textsl{Mixed state entanglement}`,  
Physical Review A54 (1996)3824

# BIB<sub>T</sub>E<sub>X</sub>: generate bibliography from a database

- ▶ Collect all bibliographical data into (one or several) .bib file(s)

mypapers.bib

```
@Book{petz08,  
  author = {D{\'}e{nes Petz},  
  title = {Quantum Information Theory and Statistics},  
  publisher = {Springer},  
  year = 2008  
}  
  
@Article{Woo01,  
  author = {W. K. Wootters},  
  title = {Entanglement of formation and concurrence},  
  journal = {Quantum Information and Computation},  
  year = 2001,  
  volume = 1,  
  pages = {27--47}  
}
```

- ▶ Select a bibliographystyle, e.g., plain  
(bibliographystyles are defined through a .bst file: plain.bst)
- ▶ In your L<sup>A</sup>T<sub>E</sub>X document `paper2.tex`, replace  
`\begin{thebibliography} ... \end{thebibliography}` by

```
\bibliographystyle{plain}  
\bibliography{mypapers,mybooks}
```

- ▶ Run

```
latex paper2.tex  
bibtex8 paper2  
latex paper2.tex  
latex paper2.tex
```

# The .bib database

- ▶ text file, pure ASCII, T<sub>E</sub>X-encoded: `{\r U}{\~n}iv{\^e}rs{\‘i}t{\“a}t`  
→ bibtex
- ▶ or: 8 bit text file `Üñivêrsität`  
→ bibtex8
- ▶ entries in the .bib file:

```
@string { ... }
```

(defines an abbreviation)

the other entries define a bibliographic item:

```
@book { ...
```

```
... }
```

```
@article {...}
```

```
@BOOK { ...}
```

(identical to book)

```
@inbook { ....}
```

Everything outside an item (like this) is an comment and ignored by bibtex.

## Abbreviations

```
@string{ jgr = "Journal of Geophysical Research"}  
@string {PRL = "Physical Review Letters"}
```

## A typical (overcomplete) entry

```
@Article{ HilWoo97,  
  title = {Entanglement of a Pair of Quantum Bits},  
  author = {Hill, Scott  and Wootters, William K.},  
  journal = PRL,  
  volume = 78,  
  number = 26,  
  pages = {5022--5025},  
  numpages = 3,  
  year = 1997,  
  month = {Jun},  
  doi = {10.1103/PhysRevLett.78.5022},  
  publisher = {American Physical Society},  
  eprint={quant-ph/9703041},  
}
```

```
@Article{ HilWoo97,  
  title = {Entanglement of a Pair  
           of Quantum Bits},  
  author = "Hill, Scott and Wootters, William K.",  
  journal = PRL,  
  Volume = 78,  
  PAGES = {5022},  
  year = 1997,  
}
```

- ▶ comma-separated fields
- ▶ first field: internal key, to be used for citation: `\cite{HilWoo97}`
- ▶ further fields: `key = value` pairs
- ▶ **Values** are strings enclosed by `{...}` or `"..."`.  
Strings of digits can be written without enclosing `{...}` or `"..."`.
- ▶ mandatory, optional and self-defined fields  
`myremarks = {Very cool paper, in ChemLib}`  
`myfile = "C:\Papers\Math\paper34.pdf"`
- ▶ field and item names (title, @book, ...): upper/lowercase doesn't matter
- ▶ spaces and linebreaks do not matter

entry type	mandatory fields	optional fields
@article	author, title, year, journal	volume, number, pages, month, note
@book	author or editor, title, publisher, year	volume or number, series, address, edition, month, note
@booklet	title	author, howpublished, address, month, year, note
@conference	author, title, booktitle, year	editor, volume or number, series, pages, address, publisher, organization, ...
@inbook	author or editor, title, chapter or pages	volume, number, series, edition, ...
@phdthesis	author, title, school, year	type, address, note, month
@unpublished	author, title, note	month, year
@misc	at least one of the optional fields	author, title, howpublished, year, month, note
@manual	title	author, organization, year, address, edition, month, note
@proceedings	title, year	editor, volume, series, ...

Further entry types: @incollection, @mastersthesis, @inproceedings, @techreport

- ▶ Strings (in "...") can be concatenated by the # operator. Useful for abbreviations:

```
@string { ich = "Hellmund, Meik" }
@string { AU = "Uhlmann, Armin" }
...
author = ich # " and " # AU
```

- ▶ T<sub>E</sub>X math mode is allowed:

```
title = {The equation  $x^2=0$  solved by application
of  $\text{\texttrm{C}}_2\text{\texttrm{H}}_5\text{\texttrm{OH}}$ }
```

- ▶ title field: Some bibliography styles make changes to the string, e.g., uppercase ↔ lowercase conversions. Avoid this by bracketing:

```
title = {The {I}sing model and {\LaTeX}}
```

- ▶ author field:

- ▶ list several authors by and
- ▶ if name has more than 2 parts, use the form

```
de la Cierva {y} Codorniu, Juan and von Neumann, John
```



## cross references

```
@InCollection{pda80,  
  author =      {Michael E. Fisher and Jing-Huei Chen},  
  title =      {Bicriticality and partial  
                differential approximants},  
  booktitle =  {Phase Transitions: Carg{\`e}se 1980},  
  crossref =   {cargese80},  
  pages =      {169--216}  
}
```

```
@Proceedings{ cargese80,  
  title =      {Phase Transitions: Carg{\`e}se 1980},  
  year =      1982,  
  editor =     {M. L{\`e}vy and Le Guillou, J. C. and  
                J. Zinn-Justin},  
  address =    {New York},  
  publisher =  {Plenum}  
}
```

# Bibliography styles

- ▶ Bibliography styles are defined via `.bst` files (written in a special programming language)
- ▶ Examples: `abbrv`, `abbrvnat`, `alpha`, `harvard`, `jurabib`, `plain`, `unsrt`, ...
- ▶ Many publisher/Journals provide `.bst` files.
- ▶ Create your own: use `custom-bib` package

```
latex makebst.tex
... answer many questions, e.g.,
      Name of language definition file?
      answer: german
... creates .bst file
(if last answer was "y")
```
- ▶ last resort: hand-edit the `.bbl` file written by `bibtex` and copy it into your  $\LaTeX$  document

Example BIB $\TeX$  styles:

<http://www.cs.stir.ac.uk/~kjt/software/latex/showbst.html>