

Using revtex.bst with REVTeX 4

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1 Introduction

With the introduction of REVTeX 4, there is an emphasis on tagging information in manuscripts so that it can be reliably extracted and used in the editorial and production processes. One of the primary areas where such tagging can have a major impact is in the bibliography sections of manuscripts. With reliable tagging, references can be automatically checked for accuracy and used for creating hyperlinks to cited papers available online. Improved accuracy in references will filter all the way through the production process to the online journal products. Production costs and delays can be greatly reduced by catching errors at the earliest stage possible, ideally at the time of submission. Because tagging information can be tedious, we have created a BibTeX style file that handles all of the tagging for the author. One only has to supply a proper .bib file and use the revtex.bst style file.

Readers unfamiliar with BibTeX may wish to consult Sec. ?? before reading further.

1.1 Reference component tagging

The components that build up a reference are each tagged using a single command, `\bibinfo`. A component corresponds to a field in an entry in the .bib file. The first argument of `\bibinfo` is a label that for the most part corresponds to the field names in the .bib entries. The second argument is the value of the field in the .bib entry. For example, if an article entry has its journal set to “Phys. Rev. B”, revtex.bst will output

```
\bibinfo{journal}{Phys. Rev. B}.
```

Usually the `\bibinfo` command has no effect upon the typesetting. It is only there to provide tagging for later use. However, specific fields can have behaviors associated with them. For instance, the URL field can be typeset using `\texttt` or even turned into a hyperlink when one uses the *hyperref* package.

1.2 Differences with prsty.bib

revtex.bst is a complete rewrite of prsty.bib. For ease of maintenance, the new style file was created using Patrick Daly’s custom-bib BibTeX style generating

package. The final output forms of the entries will be the same as with `prsty.bib`, although particular fields may be typeset slightly differently (as with URLs).

1.2.1 New fields

New fields have also been added to `revtex.bst`. These fields can appear in any of the entry types in Sec. ??.

- **collaboration:** A collaboration name associated with a reference.
- **eprint:** The e-print citation for the reference (Los Alamos or otherwise). E-print numbers can be turned into hyperlinks to the online article.
- **URL:** A URL associated with the reference. Can be turned into a hyperlink.

A collaboration appears as part of the author list and the other two appear at the end of the citation.

2 Getting started with BibTeX

Standard $\text{\LaTeX} 2_{\epsilon}$ distributions should include everything that you need to use BibTeX. Here we give a brief overview of BibTeX basics to get you oriented. More information on BibTeX can be found in Leslie Lamport's book, *LaTeX, A Document Preparation System* and *A Guide to $\text{\LaTeX} 2_{\epsilon}$* by Helmut Kopka and Patrick W. Daly.

2.1 Files associated with BibTeX

BibTeX has two main files that an author needs to be familiar with. The first is the `.bib` file which contains a database, or list, of entries for each item you plan to cite in your paper. Examples of entries are given in ??. The second is a `.bbl` file which is created by running BibTeX on your manuscript. The `.bbl` file actually contains the TeX that will be read into your manuscript at the appropriate place.

2.2 Citing BibTeX entries

Each entry in your `.bib` file has a unique label associated with it. To cite a reference, use the `\cite` command with the label as an argument. For example, if an `@Article` entry has the label "impurity," use the command `\cite{impurity}`. BibTeX and $\text{\LaTeX} 2_{\epsilon}$ will take care of numbering and ordering the citations (based partially upon the information in the `revtex.bst` style file).

2.3 Referencing the .bst and .bib files

To use the `revtex.bst` style file, put the command `\bibliographystyle{revtex}` after the `\begin{document}` line of the manuscript. At the point in the manuscript where the bibliography is to appear, put the command `\bibliography{filename}` where *filename* is the basename of your `.bib` file (i. e., the filename without the `.bib` extension).

2.4 Running BibTeX

The first step is to create an .aux file by running L^AT_ΕX 2_ε on your T_ΕX file. Among other things, this outputs a list of the labels that used in manuscript's \cite commands. BibTeX uses the .aux file to pull the correct entries out of the .bib file, processes them according to the .bst file, and then puts the results in the .bbl file. After running L^AT_ΕX 2_ε once, run BibTeX (for example, by typing `bibtex filename`, where *filename* is the name of your manuscript's T_ΕX file without the .tex extension). Once the .bbl file has been created, run L^AT_ΕX 2_ε again as usual until the warnings about re-running to get the cross-references correct disappear. The .bbl file only needs to be re-created when a reference is added or deleted from the manuscript.

2.5 Entry types

All of the standard entry types are supported. Here we give some example entries that one might put in a .bib file. Please note that some of the data is completely fictitious and these are just given as examples. For more examples, please see more definitive BibTeX references. The eprint and url fields can appear in any of the entry types.

2.5.1 Article

```
@Article{Distler:1992gc,
  author   = "Jacques Distler and Mark D. Doyle",
  title    = "World sheet supersymmetry without contact terms",
  journal  = "Phys. Lett.",
  volume   = "B287",
  year     = "1992",
  pages    = "73-81",
  eprint   = "hep-th/9203058",
}

@Article{Mart1984,
  author = "J. Martinsen and S. M. Palmer and J. Tanaka and R. C. Greene
           and B. M. Hoffman",
  title = "",
  journal = "Phys. Rev. B",
  volume = "30",
  pages = "6269",
  year = "1984",
}
```

2.5.2 Books, proceedings, and things therein

```
@Book{Abrik1972,
  author = "A. Abrikosov",
  title = "Introduction to the Theory of Normal Metals",
  publisher = "Academic Press",
  address = "New York",
  year = "1972",
}
```

2.5.3 Unpublished

```
@Unpublished{SeiWit1999,  
  author   = "Nathan Seiberg and Edward Witten",  
  title    = "The D1/D5 System And Singular CFT",  
  year     = "1999",  
  eprint   = "hep-th/9903224",  
}
```

2.5.4 Theses

```
@PHDThesis{Thomp1995,  
  author = "J. Thompson",  
  title  = "Heavy Metal",  
  school = "Northwestern University",  
  year   = "1995",  
  eprint = "math-ph/9805004",  
}
```

2.5.5 Miscellaneous

```
@Misc{revtex,  
  author = "The American Physical Society",  
  title  = "The REVTeX 4 home page",  
  year   = "1999",  
  url    = "http://publish.aps.org/revtex4/",  
}
```