

# THE SCOOP PREPARE BIB<sub>T</sub>E<sub>X</sub> FILE TOOL

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ABSTRACT. This document describes the SCOOP PREPARE BIB<sub>T</sub>E<sub>X</sub> FILE tool (version 1.0.0).

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## 1. INTRODUCTION

The bibliography of L<sup>A</sup>T<sub>E</sub>X documents is often obtained by having `bibtex` process a BIB<sub>T</sub>E<sub>X</sub> (`.bib`) file. The appearance of the bibliography is then determined by the BIB<sub>T</sub>E<sub>X</sub> style `.bst` file selected via a `\bibliographystyle` command.

Commonly used `.bst` files, notably those distributed for publications in scientific journals, come with varying features and limitations. For instance, the support of `@ONLINE` entries, which are not among the BIB<sub>T</sub>E<sub>X</sub> standard entry types<sup>1</sup> but are defined in the BIB<sub>L</sub>A<sub>T</sub>E<sub>X</sub> standard<sup>2</sup>, varies across `.bst` files.

The SCOOP PREPARE BIB<sub>T</sub>E<sub>X</sub> FILE tool (`spbf`) is meant to produce `.bib` files which are customized to be processed by `bibtex` with a `.bst` file with known limitations. In particular, it allows users to maintain their `.bib` files in the modern BIB<sub>L</sub>A<sub>T</sub>E<sub>X</sub> standard and produce downgraded `.bib` files on demand, which are compatible with `bibtex` processing and compliant with the features of a particular `.bst` file.

The `spbf` tool is used internally by the SCOOP TEMPLATE ENGINE (`ste`)<sup>3</sup>, but it may also be used independently. To produce a customized BIB<sub>T</sub>E<sub>X</sub> file, `spbf convert` performs three steps.

- (1) First, it runs

```
biber --bblsafechars --output-format=bibtex
```

on the input file, which takes care of recoding any UTF8 characters present in the input into L<sup>A</sup>T<sub>E</sub>X accented characters, e. g., the German umlaut `ä` becomes `\"a}` etc.

- (2) Second, it applies a couple of transcription rules, whose primary purpose is to downgrade entries using BIB<sub>L</sub>A<sub>T</sub>E<sub>X</sub> features to BIB<sub>T</sub>E<sub>X</sub> compatible features. For instance, upper-case characters will be protected by curly braces, entry types such as `@THESIS` will be transcribed etc. These unconditional transcriptions are described in [Section 3](#).

- (3) Third, it applies a couple of additional transcription rules depending on the command line options given. For instance,

```
spbf convert --arxivtotypeornote ...
```

<sup>1</sup><https://en.wikipedia.org/wiki/BibTeX>

<sup>2</sup><https://mirrors.ctan.org/info/biblatex-cheatsheet/biblatex-cheatsheet.pdf>

<sup>3</sup><https://gitlab.com/scoopgroup-public/scoop-template-engine>

would transcribe the entry

```
@ARTICLE{...,
  ... = {...},
  EPRINT = {1804.06214},
  EPRINTTYPE = {arXiv},
}
```

into

```
@ARTICLE{...,
  ... = {...},
  NOTE = {{arXiv}: \href{https://arxiv.org/abs/
    1804.06214}{1804.06214}},
}
```

This example of a transcription can be useful since the *EPRINT* and *EPRINTTYPE* entries are not BIB<sub>T</sub>E<sub>X</sub> standard entry types<sup>4</sup> and thus are not honored by some *.bst* files.

A description of the command line options to customize the behavior of `spbf convert` is given in [Section 4](#).

`spbf convert` takes as input either

- a BIB<sub>T</sub>E<sub>X</sub> or BIB<sub>L</sub>A<sub>T</sub>E<sub>X</sub> (*.bib*) file (database mode),
- or a BIB<sub>L</sub>A<sub>T</sub>E<sub>X</sub> control (*.bcf*) file (document mode).

In document mode, your system's `biber` command must be version 2.10 or higher.

## 2. COMMANDS

The SCOOP PREPARE BIB<sub>T</sub>E<sub>X</sub> FILE tool offers the following functions. The commands

```
spbf help
spbf doc
spbf version
```

should be self-explanatory. The main functionality is

```
spbf convert [options] infile [outfile]
```

whose operation is described in the remainder of this document.

<sup>4</sup><https://en.wikipedia.org/wiki/BibTeX>

## 3. UNCONDITIONAL TRANSCRIPTIONS

`spbf convert` first carries out a number of transcriptions independently of which command line [options] are given. These are meant primarily to allow users to make use of BIBL<sub>A</sub>T<sub>E</sub>X features in their input .bib files and use `spbf convert` to downgrade those to features to standard BIB<sub>T</sub>E<sub>X</sub> entry types.<sup>5</sup> The transcriptions are carried out in the order they are described below.

**3.1. Upper-Case Character Protection.** `spbf convert` protects all uppercase characters (in fact, uninterrupted chains of such characters) by curly braces in the TITLE, SUBTITLE and BOOKTITLE fields. For instance, an entry

```
@...{...,
  TITLE = {Intrinsic formulation of KKT conditions and
           constraint qualifications on smooth manifolds},
}
```

is transcribed into

```
@...{...,
  TITLE = {Intrinsic formulation of {KKT} conditions and
           constraint qualifications on smooth manifolds},
}
```

**3.2. DATE Field.** `spbf convert` transcribes the DATE field into a YEAR field. For instance, an entry

```
@...{...,
  DATE = {2012-12},
}
```

is transcribed into

```
@...{...,
  YEAR = {2012},
}
```

---

<sup>5</sup><https://en.wikipedia.org/wiki/BibTeX>

3.3. **LOCATION Field.** `spbf convert` transcribes the `LOCATION` field into a `ADDRESS` field. For instance, an entry

```
@...{...,  
  LOCATION = {Berlin, Heidelberg},  
}
```

is transcribed into

```
@...{...,  
  ADDRESS = {Berlin, Heidelberg},  
}
```

3.4. **JOURNALTITLE Field.** `spbf convert` transcribes the `JOURNALTITLE` field into a `JOURNAL` field. For instance, an entry

```
@...{...,  
  JOURNALTITLE = {SIAM Journal on Optimization},  
}
```

is transcribed into

```
@...{...,  
  JOURNAL = {SIAM Journal on Optimization},  
}
```

3.5. **ORGANIZATION Field.** `spbf convert` transcribes the `ORGANIZATION` field into a `PUBLISHER` field. For instance, an entry

```
@...{...,  
  ORGANIZATION = {IEEE},  
}
```

is transcribed into

```
@...{...,  
  PUBLISHER = {IEEE},  
}
```

3.6. **SUBTITLE Field.** `spbf convert` appends the contents of the `SUBTITLE` field to the `TITLE` field. For instance, an entry

```
@...{...,
  TITLE = {Infinite Dimensional Analysis},
  SUBTITLE = {A Hitchhiker's Guide},
}
```

is transcribed into

```
@...{...,
  TITLE = {Infinite Dimensional Analysis.
  A Hitchhiker's Guide},
}
```

3.7. **@REPORT Entries.** `spbf convert` transcribes entries of type `@REPORT` into entries of type `@TECHREPORT`. If applicable, it also converts the `TYPE` field: if the `TYPE` field equals `{techreport}`, it will be transcribed into `{{T}echnical report}`. For instance, an entry

```
@REPORT{...,
  ... = {...},
  TYPE = {techreport},
}
```

is transcribed into

```
@TECHREPORT{...,
  ... = {...},
  TYPE = {{T}echnical report},
}
```

3.8. **@COLLECTION Entries.** `spbf convert` transcribes entries of type `@COLLECTION` into entries of type `@BOOK`. For instance, an entry

```
@COLLECTION{...,
  ... = {...},
}
```

is transcribed into

```
@BOOK{...,
  ... = {...},
}
```

3.9. **Bachelor @THESIS.** `spbf convert` transcribes entries of type `@THESIS` with a `TYPE = {Bachelor thesis}` field into entries of type `@MASTERTHESIS` with a field `TYPE = {{B}achelor thesis}`. In this case, it also replaces an `INSTITUTION` field by a `SCHOOL` field. For instance, an entry

```
@THESIS{...,
  ... = {...},
  INSTITUTION = {Heidelberg University},
  TYPE = {Bachelor thesis},
}
```

is transcribed into

```
@MASTERTHESIS{...,
  ... = {...},
  SCHOOL = {Heidelberg University},
  TYPE = {{B}achelor thesis},
}
```

3.10. **Master @THESIS.** `spbf convert` transcribes entries of type `@THESIS` with a `TYPE = {mathesis}` field into entries of type `@MASTERTHESIS` with a field `TYPE = {{M}aster thesis}`. In this case, it also replaces an `INSTITUTION` field by a `SCHOOL` field. For instance, an entry

```
@THESIS{...,
  ... = {...},
  INSTITUTION = {Heidelberg University},
  TYPE = {mathesis},
}
```

is transcribed into

```
@MASTERTHESIS{...,
  ... = {...},
  SCHOOL = {Heidelberg University},
  TYPE = {{M}aster thesis},
}
```

3.11. **Ph.D. @THESIS.** `spbf convert` transcribes entries of type `@THESIS` with a `TYPE = {phdthesis}` field into entries of type `@PHDTHESIS` with a field `TYPE = {{P}h.{D}. thesis}`. In this case, it also replaces an `INSTITUTION` field by a `SCHOOL` field. For instance, an entry

```
@THESIS{...,
  ... = {...},
  INSTITUTION = {Heidelberg University},
  TYPE = {phdthesis},
}
```

is transcribed into

```
@PHDTHESIS{...,
  ... = {...},
  SCHOOL = {Heidelberg University},
  TYPE = {{P}h.{D}. thesis},
}
```

3.12. **Habilitation** `@THESIS`. `spbf convert` transcribes entries of type `@THESIS` with a `TYPE = {Habilitation thesis}` field into entries of type `@PHDTHESIS` with a field `TYPE = {{H}abilitation thesis}`. In this case, it also replaces an `INSTITUTION` field by a `SCHOOL` field. For instance, an entry

```
@THESIS{...,
  ... = {...},
  INSTITUTION = {Heidelberg University},
  TYPE = {Habilitation thesis},
}
```

is transcribed into

```
@PHDTHESIS{...,
  ... = {...},
  SCHOOL = {Heidelberg University},
  TYPE = {{H}abilitation thesis},
}
```

## 4. COMMAND LINE OPTIONS

Following the conversions described in [Section 3](#), `spbf convert` carries out a number of additional transcriptions depending on the command line options given.

### 4.1. Options Related to Specific Entry Types.

4.1.1. `--onlinetotechreport`. The `--onlinetotechreport` option is meant to create a `.bib` file for processing in documents whose `.bst` file does not properly render `@ONLINE` entry types. It causes `@ONLINE` to be replaced by `@TECHREPORT`.

## 4.2. Options Related to EPRINT fields.

4.2.1. `--arxivtotypeornote`. The `--arxivtotypeornote` option is meant to create a `.bib` file for processing in documents whose `.bst` file does not honor

```
@...{...,
  EPRINTTYPE = {arXiv},
}
```

fields. It causes entries of type `@TECHREPORT`

```
@TECHREPORT{...,
  ... = {...},
  EPRINT = {1804.06214},
  EPRINTTYPE = {arXiv},
}
```

to be transcribed according to

```
@TECHREPORT{...,
  ... = {...},
  TYPE = {{arXiv}: \href{https://arxiv.org/abs/
    1804.06214}{1804.06214}},
}
```

and entries of all other types

```
@...{...,
  ... = {...},
  EPRINT = {1804.06214},
  EPRINTTYPE = {arXiv},
}
```

to be transcribed according to

```
@...{...,
  ... = {...},
  NOTE = {{arXiv}: \href{https://arxiv.org/abs/
    1804.06214}{1804.06214}},
}
```

4.2.2. *--haltotypeornote*. The `--haltotypeornote` option is meant to create a `.bib` file for processing in documents whose `.bst` file does not honor

```
@...{...,
  EPRINTTYPE = {HAL},
}
```

fields. It causes entries of type `@TECHREPORT`

```
@TECHREPORT{...,
  ... = {...},
  EPRINT = {hal-01686770},
  EPRINTTYPE = {HAL},
}
```

to be transcribed according to

```
@TECHREPORT{...,
  ... = {...},
  TYPE = {{HAL}: \href{https://hal.archives-ouvertes.fr/
    hal-01686770}{hal-01686770}},
}
```

and entries of all other types

```
@...{...,
  ... = {...},
  EPRINT = {hal-01686770},
  EPRINTTYPE = {HAL},
}
```

to be transcribed according to

```
@...{...,
  ... = {...},
  NOTE = {{HAL}: \href{https://hal.archives-ouvertes.fr/
    hal-01686770}{hal-01686770}},
}
```

4.2.3. *--urntonote*. The `--urntonote` option is meant to create a `.bib` file for processing in documents whose `.bst` file does not honor

```
@...{...,
  EPRINTTYPE = {urn},
}
```

fields. It causes entries of all types

```
@...{...,
  ... = {...},
  EPRINT = {urn},
  EPRINTTYPE = {urn:nbn:de:bsz:ch1-qucosa-227446},
}
```

to be transcribed according to

```
@...{...,
  ... = {...},
  NOTE = {{URN}: \href{https://www.nbn-resolving.de/
    urn:nbn:de:bsz:ch1-qucosa-227446}
    {urn:nbn:de:bsz:ch1-qucosa-227446}}},
}
```

### 4.3. Options Related to the DOI Field.

4.3.1. `--doitourl`. The `--doitourl` option is meant to create a `.bib` file for processing in documents whose `.bst` file does not honor

```
@...{...,
  DOI = {...},
}
```

fields but which do honor

```
@...{...,
  URL = {...},
}
```

fields. It causes entries of all types

```
@...{...,
  ... = {...},
  DOI = {10.1137/18M1181602},
}
```

to be transcribed according to

```
@...{...,
  ... = {...},
  URL = {https://doi.org/10.1137/18M1181602},
}
```

4.3.2. *--doitonote*. The *--doitonote* option is meant to create a *.bib* file for processing in documents whose *.bst* file does not honor

```
@...{...,
  DOI = {...},
}
```

fields nor

```
@...{...,
  URL = {...},
}
```

fields (hence *--doitourl* is not helpful). It causes entries of all types

```
@...{...,
  ... = {...},
  DOI = {10.1137/18M1181602},
}
```

to be transcribed according to

```
@...{...,
  ... = {...},
  NOTE = {{DOI} \href{https://doi.org/10.1137/18M1181602}
    {10.1137/18M1181602}},
}
```

#### 4.4. Options Related to the URL Field.

4.4.1. *--urltonote*. The *--urltonote* option is meant to create a *.bib* file for processing in documents whose *.bst* file does not honor

```
@...{...,
  URL = {...},
}
```

fields. It causes entries of all types

```
@...{...,
  ... = {...},
  URL = {http://www.optpde.net/},
}
```

to be transcribed according to

```
@...{...,
  ... = {...},
  NOTE = {\url{http://www.optpde.net/}},
}
```

#### 4.5. Options Related to Author Names.

4.5.1. *--giveninits*. Most but not all `.bst` files abbreviate authors' and editors' given names. This option is meant to create a `.bib` file for processing in documents whose `.bst` file does not abbreviate given names, particularly in the case that your `.bib` file may have some entries with abbreviated given names and other entries with complete given names. This option causes entries of all types

```
@...{...,
  AUTHOR = {Hoffmann, Karl-Heinz},
}
```

to be transcribed according to

```
@...{...,
  AUTHOR = {Hoffmann, K.-H.},
}
```

and entries of all types

```
@...{...,
  EDITOR = {Hoffmann, Karl-Heinz},
}
```

to be transcribed according to

```
@...{...,
  EDITOR = {Hoffmann, K.-H.},
}
```

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