

# Template demonstrating the quantum bibstyle

David Wierichs<sup>1</sup> and Johannes Jakob Meyer<sup>2,3</sup>

<sup>1</sup>Institute for Theoretical Physics, University of Cologne, Germany

<sup>2</sup>Dahlem Center for Complex Quantum Systems, Freie Universität Berlin, 14195 Berlin, Germany

<sup>3</sup>QMATH, Department of Mathematical Sciences, University of Copenhagen, 2100 Copenhagen, Denmark

## 1 Overview

We use the opportunity of talking about bibtex entries to give an overview of the available reference classes:

<code>article</code>	Section 2
<code>book</code>	Section 3
<code>repository</code>	Section 4
<code>website</code>	Section 5
<code>misc</code>	Section 6
Other classes	Section ??
<code>booklet</code>	Section ??
<code>inbook</code>	Section 6.1
<code>incollection</code>	Section ??
<code>inproceedings</code>	Section ??
<code>manual</code>	Section ??
<code>mastersthesis</code>	Section ??
<code>phdthesis</code>	Section ??
<code>proceedings</code>	Section ??
<code>techreport</code>	Section ??
<code>unpublished</code>	Section ??
Mixed tests	Section 7

All of these reference classes are available in standard bibtex style files as well, with the exception of `repository` and `website`. Of course there may be other style files supporting reference classes with the same name, but the implementation in `quantum.bst` will not be based on any of those.

## 2 Reference class `article`

For the `article` class, the `title` is printed in *italics*. The `journal` is not reformatted, the `volume` printed in **bold font**. We also include the `pages` if present and the `year` in round brackets (). `doi` links are always included if given, the same holds for `eprint`. Only if neither of these two fields is given do we use the `url` to provide a hyperlink to the article. Code repositories are linked

whenever provided via the `code` field, which is a non-standard field in `quantum.bst`.

Examples:

<code>doi</code>	<code>eprint</code>	<code>url</code>	<code>code</code>	result
✓	✓	✓/×	✓	[1]
✓	✓	✓/×	×	[2]
×	✓	✓/×	✓	[3]
×	✓	✓/×	×	[4]
×	×	✓/×	✓	[5]
×	×	✓/×	×	[6]

Note that in particular citations via a URL alone are not recommended. If you want to cite a website or code repository, please use the respective reference classes `website` or `repository` (see below).

### article references

- [1] Matthew McKague. “Self-testing in parallel with CHSH”. *Quantum* **1**, 1 (2017). DOI: [10.22331/q-2017-04-25-1](https://doi.org/10.22331/q-2017-04-25-1). eprint: [arXiv:1609.09584](https://arxiv.org/abs/1609.09584). code: [tony-blake/Hybrid-x509-s](#).
- [2] Matthew McKague. “Self-testing in parallel with CHSH”. *Quantum* **1**, 1 (2017). DOI: [10.22331/q-2017-04-25-1](https://doi.org/10.22331/q-2017-04-25-1). eprint: [arXiv:1609.09584](https://arxiv.org/abs/1609.09584).
- [3] Matthew McKague. “Self-testing in parallel with CHSH”. *Quantum* **1**, 1 (2017). eprint: [arXiv:1609.09584](https://arxiv.org/abs/1609.09584). code: [tony-blake/Hybrid-x509-s](#).
- [4] Matthew McKague. “Self-testing in parallel with CHSH”. *Quantum* **1**, 1 (2017). eprint: [arXiv:1609.09584](https://arxiv.org/abs/1609.09584).
- [5] Matthew McKague. “Self-testing in parallel with CHSH”. *Quantum* **1**, 1 (2017). URL: [doi.org/10.22331/q-2017-04-25-1](https://doi.org/10.22331/q-2017-04-25-1). code: [tony-blake/Hybrid-x509-s](#).
- [6] Matthew McKague. “Self-testing in parallel with CHSH”. *Quantum* **1**, 1 (2017). URL: [doi.org/10.22331/q-2017-04-25-1](https://doi.org/10.22331/q-2017-04-25-1).

### 3 Reference class book

For the reference class `book`, the `title`, the `year`, the `publisher` as well as *either* the `author` or the `editor` field must be given. The `volume`, `number` and `series`, the (publisher) `address`, the `edition` as well as links in the fields `doi`, `eprint` and `url` are optional. The order in which links are printed is the same as for `article`, Section 2. Some example `book` references are [1, 2].

#### book references

- [1] Michael A. Nielsen and Isaac L. Chuang. “Quantum computation and quantum information”. Cambridge University Press (2009). DOI: [10.1017/cbo9780511976667](https://doi.org/10.1017/cbo9780511976667).
- [2] Michael A. Nielsen and Isaac L. Chuang. “Quantum computation and quantum information”. Cambridge University Press (2009). 10th Anniversary edition. URL: [doi.org/10.1017/cbo9780511976667](https://doi.org/10.1017/cbo9780511976667).

### 4 Reference class repository

For the custom `repository` reference class, the `author` field is used if given but is not required (in contrast to the `article` class). If the repository address is given via `code` (strongly recommended), a properly formatted repository name is printed and links to the given address, including potentially version-, branch- or even commit-specific links. If no `code` entry is given, `url` is used as address instead, without any formatting of the printed text; Either `code` or `url` have to be provided. A title is not considered even if given. TODO: Consider a year in any way?

code	url	result
✓	✓/×	[1]
×	✓	[2]
×	×	invalid

Note that if you want both a `url` and a `code` link to be displayed, you can use the `website` reference class presented below for that.

#### repository references

- [1] Johannes Jakob Meyer. code: [johannesjmeyer/rsmf](https://github.com/johannesjmeyer/rsmf).

- [2] Johannes Jakob Meyer. URL: [github.com/johannesjmeyer/rsmf](https://github.com/johannesjmeyer/rsmf).

### 5 Reference class website

For the new custom reference class `website`, we require a `title` and a `url` which are both printed always. `author` is optional and printed if given, the same holds for `code`, which is formatted as repository link like for `repository`. If you want to provide `code` but not `url`, the reference class `repository` (see above) is made for you.

author	code	result
✓	✓	[1]
×	✓	[2]
✓	×	[3]
×	×	[4]

Note that if you want both a `url` and a `code` link to be displayed, you can use the `website` reference class presented below for that.

#### references

- [1] The Wiki-authors. “Wikipedia”. URL: [wikipedia.com](https://wikipedia.com). code: [wikimedia/mediawiki](https://wikimedia.org/mediawiki).
- [2] “Wikipedia”. URL: [wikipedia.com](https://wikipedia.com). code: [wikimedia/mediawiki](https://wikimedia.org/mediawiki).
- [3] The Wiki-authors. “Wikipedia”. URL: [wikipedia.com](https://wikipedia.com).
- [4] “Wikipedia”. URL: [wikipedia.com](https://wikipedia.com).

### 6 Reference class misc

The reference class `misc` is meant to be used for miscellaneous entries that do not fall into any of the provided categories. As such, `misc` entries display the generic properties `author`, `title`, `howpublished`, `date`, `eprint` and `note`, the only requirement being at least one of these fields to be provided and non-empty. As the reference class `article` covers the case of preprint articles, the `misc` class was modified to refer back to `article` if `archivePrefix` is set to “arxiv” or an anyhow capitalized version thereof *and* `primaryClass` is provided and non-empty.

We provide some examples, not covering all cases, because `misc` is very flexible and there are many possibilities.

- A citation that actually is an article on the arXiv: [1]
- A footnote-like reference only containing a note: [2]
- A reference to a private correspondence: [3]

## misc references

- [1] Thomas Hubregtsen, David Wierichs, Elies Gil-Fuster, Peter-Jan H. S. Derks, Paul K. Faehrmann, and Johannes Jakob Meyer. “Training quantum embedding kernels on near-term quantum computers”. eprint: [arXiv:2105.02276](#).
- [2] Indeed, only a note was provided for this reference.
- [3] Christian Gogolin. “Purple became very popular after this.”. Private correspondence.

## 6.1 Reference class inbook

The reference class `inbook` is an alias for `book` with the additional requirement that `chapter`, `pages` or both are provided. Examples would be Refs. [1, 2].

## Other references

- [1] Michael A. Nielsen and Isaac L. Chuang. “Quantum computation and quantum information”. Chapter 3. Cambridge University Press (2009). DOI: [10.1017/cbo9780511976667](#).
- [2] Michael A. Nielsen and Isaac L. Chuang. “Quantum computation and quantum information”. Chapter 3, pages 120–169. Cambridge University Press (2009). DOI: [10.1017/cbo9780511976667](#).

## 7 Tests

Directly from the arxiv [1], arxiv via Zotero [2], some more testcases [3–7]

## Test references

- [1] Thomas Hubregtsen, David Wierichs, Elies Gil-Fuster, Peter-Jan H. S. Derks, Paul K. Faehrmann, and Johannes Jakob Meyer. “Training quantum embedding kernels on near-term quantum computers”. eprint: [arXiv:2105.02276](#).
- [2] Thomas Hubregtsen, David Wierichs, Elies Gil-Fuster, Peter-Jan H. S. Derks, Paul K. Faehrmann, and Johannes Jakob Meyer. “Training quantum embedding kernels on near-term quantum computers”. [arXiv:2105.02276](#) [quant-ph] (2021). eprint: [arXiv:2105.02276](#).
- [3] A S Holevo and V Giovannetti. “Quantum channels and their entropic characteristics”. *Reports on Progress in Physics* **75**, 046001 (2012). DOI: [10.1088/0034-4885/75/4/046001](#).
- [4] A S Holevo and V Giovannetti. “Quantum channels and their entropic characteristics”. *Reports on Progress in Physics* **75**, 046001 (2012). DOI: [10.1088/0034-4885/75/4/046001](#).
- [5] Chris Akers, Netta Engelhardt, and Daniel Harlow. “Simple holographic models of black hole evaporation”. *JOURNAL OF HIGH ENERGY PHYSICS* (2020). DOI: [10.1007/JHEP08\(2020\)032](#).
- [6] Vishal Katariya and Mark M. Wilde. “Geometric distinguishability measures limit quantum channel estimation and discrimination”. *Quantum Information Processing* **20**, 78 (2021). DOI: [10.1007/s11128-021-02992-7](#).
- [7] Vishal Katariya and Mark M Wilde. “Geometric distinguishability measures limit quantum channel estimation and discrimination”. *Quantum Information Processing* **20**, 1–170 (2021).