

# Latex Test

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This is a test on how to compile  $\text{\LaTeX}$  files.  
First, without bibliography, the file is compiled with:  
`pdflatex test (.tex)`

One has to run the command twice, to get the references right.  
It is more complicated, if one includes bibliographies: [1], [2]. Here, `BibLaTeX.bib` is a `BibLaTeX` file, while `BibTeX.bib` is a `BibTeX` file.  
For `BibLaTeX` one has to run:  
`pdflatex test (.tex)`  
`biber test (.tex)`  
`pdflatex test (.tex)`  
`pdflatex test (.tex)`

For `BibTeX` one has to run (`BibTeX` does not work somehow):  
`pdflatex test (.tex)`  
`bibtex test (.tex)`  
`pdflatex test (.tex)`  
`pdflatex test (.tex)`

In `Biber/BibLaTeX` there is however a problem with the `.bib` file. First, the date format `YYYY-MM-DD` does not work. Second, somehow the field `volume` does not work and lead to a crash of `biber`. In this case it is best to remove the cache of `Biber`, located at `biber --cache`:  
`rm -rf $(biber --cache)`

Sometimes there is a problem with `LT $\text{\TeX}$`  that it is too slow. Reason: The file is too big!? Solution: Make the file smaller, split it in different files. Unfortunately increasing the cache does not work:  
`"ltex.java.maximumHeapSize": 2048,`  
`"ltex.sentenceCacheSize": 10000.`

To get a bib-file with only the cited papers, run the following command:  
`biber --output_format=bibtex --output_resolve <filename>.bcf`  
or  
`bibexport -o extracted.bib *.aux`

Even simpler is importing the `.aux` file in Zotero!

If one wants to use OCR on a PDF (where it does not work immediately, like for example paper from ADS):

1. Export the PDF to an image format, e.g. `png` or `HEIC` (seems not to matter which format to chose)
2. Open the image file (that should contain the images of all pages together) and use `Export to PDF / Als PDF exportieren` (not use `export->PDF!`). The PDF might have to be renamed for this!
3. Open the PDF and use `export->PDF, filter: reduced file size, PDF/A, linearized PDF, embed text`. This produces a PDF with the smallest possible file size (still much larger than original file) and embedded readable text.

If one wants to use OCR works already on the PDF, just export with the option `embed text`, don't use `filter: reduced file size`.

## References

- [1] Vo Hong Minh Phan et al. "Stochastic Fluctuations of Low-Energy Cosmic Rays and the Interpretation of Voyager Data". In: *Physical Review Letters* 127.14 (Sept. 27, 2021), p. 141101. DOI: 10.1103/PhysRevLett.127.141101. arXiv: 2105.00311. URL: <https://link.aps.org/doi/10.1103/PhysRevLett.127.141101>.
- [2] Florian Tobias Schulze. "Stochastic Sources of Cosmic Rays and the Cosmic Ray Ionisation Puzzle". BA thesis. RWTH Aachen, July 2020. 53 pp.