

Writing a paper in \LaTeX

collaborating, commenting, tracking changes

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Topics

1. Commenting

- Todo lists
- Custom comment style

2. Change tracking

- Whole document
- Single chapters

3. More useful stuff

Todo list and custom comment style

Todonotes by Henrik Skov Midtiby

- <http://www.ctan.org/tex-archive/macros/latex/contrib/todonotes/>
- comment boxes in margin or text (inline)
- highly customizable e.g. for using different authors

Todo lists

```
\documentclass[10pt,a4paper]{article}
\usepackage[latin1]{inputenc}
\usepackage[colorinlistoftodos, textsize=scriptsize, prependcaption]{todonotes}

\begin{document}



\listoftodos

\section{First chapter}

\todo[inline,backgroundcolor=blue!25]{A longer comment with option \emph{inline}.}
Something funny.
\todo{Check if it is really funny!}

\end{document}
```

Todo list

 A longer comment with option <i>inline</i>	1
 Check if it is really funny!	1

1 First chapter

A longer comment with option *inline*.

Something funny.

Check if it is
really funny!

Custom comment style

```
\documentclass[10pt,a4paper]{article}
\usepackage[latin1]{inputenc}
\usepackage{xargs}
\usepackage{xcolor}
\usepackage{tcolorbox}
\usepackage[colorinlistoftodos, textsize=scriptsize, prependcaption]{todonotes}

\newcommandx{\ME}[2][1={
\todo[linecolor=red,backgroundcolor=red!25,bordercolor=red,#1]{Me:\\#2}
}

\newcommandx{\CA}[2][1={
\todo[linecolor=blue,backgroundcolor=blue!25,bordercolor=blue,#1]{Colleague 1:\\#2}
}

\begin{document}

Something funny. \ME{Check if it is really funny!} \CA{No, I don't think so.}

\end{document}
```

Something funny.

Me:
Check if it is
really funny!

Colleague 1:
No, I don't
think so.

Change tracking

Whole document

Fancy title of fancy research paper

Me, my colleague, my boss
version: September 13, 2016

Abstract

A short summary.

1 Introduction

Of course we need to cite our colleagues (Nied et al., 2014; Petrow and Merz, 2009) and everybody else we know (Vorogushyn and Merz, 2013) to have a nice long list of references.

2 Data



Figure 1: this penguin represents our data.

Here we describe the data. And we show some nice graph of them (Figure 1).

3 Methods

Table 1: Random table.

letter	run	number
A	1	23
B	3	98
C	54	56

For this fancy paper some fancy methods were used as well. In table Table 1 we just give some random info that nobody actually needs.

4 Results

I wrote some text here, but I'm not yet really sure about it. I'll put a note for my co-authors to have a look.

Me:
Is this correct?
Check again!

Colleague 1:
I think this is
a stupid sentence.

5 Discussion

Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like "Huerdest gelbun"? Kjilt -- not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

Me:
Here in the discussion I'm really not sure about certain things and I have to explain a lot in the comment. This would make the comment too long, so I use the option online.

6 Conclusions

References

- Nied, M., Pardowitz, T., Nissen, K., Ulbrich, U., Hundscha, Y., and Merz, B.: On the relationship between hydro-meteorological patterns and flood types, *Journal of Hydrology*, 519, 3249–3262, doi:10.1016/j.jhydrol.2014.09.089, URL <http://dx.doi.org/10.1016/j.jhydrol.2014.09.089>, 2014.
- Petrow, T. and Merz, B.: Trends in flood magnitude, frequency and seasonality in Germany in the period 1951–2002, *Journal of Hydrology*, 371, 129–141, doi:10.1016/j.jhydrol.2009.03.024, URL <http://dx.doi.org/10.1016/j.jhydrol.2009.03.024>, 2009.
- Vorogushyn, S. and Merz, B.: Flood trends along the Rhine: the role of river training, *Hydrology and Earth System Sciences*, 17, 3871–3884, doi:10.5194/hess-17-3871-2013, URL <http://dx.doi.org/10.5194/hess-17-3871-2013>, 2013.

Change tracking

Whole document

Fancy title of fancy research paper

Me, my colleague, my boss
version: September 13, 2016

Abstract

A ~~short~~ longer summary.

1 Introduction

Of course we need to cite our colleagues (Nied et al., 2014; Petrow and Merz, 2009) and everybody else we know (Vorogushyn and Merz, 2013) to have a nice long list of references.

2 Data



Figure 1: This penguin represents our data is just cute.

Here we describe the data. And we show some nice graph of them (Figure 1).

3 Methods

Table 1: Random table.

letter	run	number
A	1	23
B	3	98
C	54	6624

For this fancy paper some fancy methods were used as well. In table Table 1 we just give some random info that nobody actually needs.

4 Results

I wrote some text here, but I'm not yet really sure about it. I'll put a note for my co-authors to have a look.

Me:
Is this correct?
Check again!

5 Discussion

Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like "Hauderdest gelbun"? Kjft - not at all! A blind text like this gives you information about the selected text, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

Colleague 1:
I think this is a stupid sentence.

Me:
Oh, got to change it.

Me:
Here in the discussion I'm really not sure about certain things and I have to explain a lot in the comment. This would make the comment too long, so I use the option inline.

6 Conclusions

After submitting a first version of the paper I made some changes. These changes should be highlighted. Some journals (e.g. HESS) require that for submitting papers!

References

- Nied, M., Pardowitz, T., Nissen, K., Ulbrich, U., Hundecha, Y., and Merz, B.: On the relationship between hydro-meteorological patterns and flood types, Journal of Hydrology, 519, 3249–3262, doi:10.1016/j.jhydrol.2014.09.089, URL <http://dx.doi.org/10.1016/j.jhydrol.2014.09.089>, 2014.
- Petrow, T. and Merz, B.: Trends in flood magnitude, frequency and seasonality in Germany in the period 1951–2002, Journal of Hydrology, 371, 129–141, doi:10.1016/j.jhydrol.2009.03.024, URL <http://dx.doi.org/10.1016/j.jhydrol.2009.03.024>, 2009.
- Vorogushyn, S. and Merz, B.: Flood trends along the Rhine: the role of river training, Hydrology and Earth System Sciences, 17, 3871–3884, doi:10.5194/hess-17-3871-2013, URL <http://dx.doi.org/10.5194/hess-17-3871-2013>, 2013.

Change tracking

Whole document

Latexdiff by Frederik Tilmann

- <http://www.ctan.org/tex-archive/support/latexdiff/>
- e.g. required by HESS
- can highlight differences in text, headings, captions, tables
- cannot highlight differences in comments (i.e. todonotes)
- gives complete reference list of new + old version

Change tracking

Whole document

how to use:

- `latexdiff OPTIONS old.tex new.tex > changes.tex`
- `OPTION --flatten` for including multiple tex-files
- `OPTION --type=UNDERLINE` for changes highlighted as shown (for more options, see `latexdiff` manual)
- `latexdiff-vc` – can handle version control, though not tested yet (see manual)

Change tracking

Whole document

Whole process

(latexdiff, compile document with changes and bibliography)
– i.e. as a .bat-file (Windows)

F:

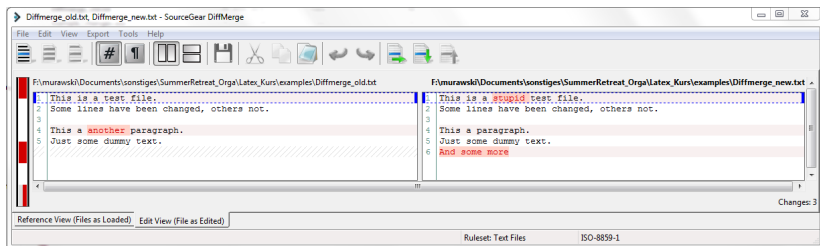
```
cd directory\of\your\manuscript
latexdiff --flatten --type=UNDERLINE old.tex new.tex > changes.tex
pdflatex -quiet changes.tex
bibtex changes
pdflatex -quiet changes.tex
pdflatex -quiet changes.tex
```

Change tracking

Single chapters



- <https://www.sourcegear.com/diffmerge/>
- might be included in SourceTree as external diff
- useful for merging changes of two different `.tex`-files



bibexport

- extract only used references from .bib-file
- <http://ctan.org/pkg/bibexport>
- useful for submitting manuscript to journal
- how to use:
`bibexport.sh -o literature.bib manuscript_main.aux`

latexpand

- replaces all `\input` and `\include` commands with the respective file content
- useful for “finalising” e.g. a manuscript to keep the published version and prevent it from further changes in the associated sub-files
- basically what option `--flatten` in `latexdiff` does internally
- included in MiKTeX and TeX Live
- how to use:
`latexpand manuscript_original.tex > manuscript_flattened.tex`
- some useful extra options:
`--keep-comments --empty-comments`
- <http://www.ctan.org/pkg/latexpand>

- convert latex file to rtf, which can be read by Word
- <http://latex2rtf.sourceforge.net/>

... for Diffmerge and SourceTree

Use one line per sentence:

Introduction.tex

Block zurücksetzen

- 1 • About the Rhine and the flood problem.
- 2 • Flood changes.
- 3 • Many previous studies indicate changes in flood flow characteristics among others in the Rhine basin \citep{Petrov_2009, Bormann_2010}.
- 4 •
- 5 •
- 6 •
- 7 •
- 8 \begin{itemize}
- 9 \item detection of changes in weather patterns (frequency, seasonality, persistence, especially for patterns related to heavy precipitation events)
- 10 \end{itemize}

Many previous studies indicate changes in flood flow characteristics among others in the Rhine basin ([Vitar/Petrou 2009](#), [Serafini et al. 2010](#)). However, the question about responsible drivers of these changes is usually poorly addressed resulting in a soft attribution of the role of climatic changes in particular driven by natural variability or anthropogenic forcing, landuse changes or river t & m. The mire catchesment ([Brennwald 2002](#)) and ([Vitar/Foroughy/2011](#)) quantified the impact of river training in the main stem of the Rhine on the hydrological regime. In both cases, the effect of river engineering was found to be significant. In order to develop an end-to-end attribution study of flood flow changes to anthropogenically induced climate change, a down global climate models represent climate under different emissions and scenarios, which are particularly by anthropogenic greenhouse gas concentrations. Numerous modelling approaches have been developed and applied, ([Vitar et al. \[g.\] \[Hirabayashi 2008\]](#)) for a review. In particular, an approach based on weather generator (WG) conditioned on climate model output offers a possibility to generate WG/Check the suitability of these references taken as the first step. And, it enables estimation of future climate conditions from climate model outputs, especially in the moments of their distributions. A WG can be conditioned on covariates such as weather patterns, which are typically better reproduced by climate models than raw meteorological observations. This approach relies on a number of assumptions discussed in details by ([Vitar/Jurawski_2016](#)). Here we briefly reproduce major points:

1. Firstly, the local climate is assumed to be forced by large-scale synoptic situations and hence, the local climate can be seen secondly, the local climate is determined by its own internal processes.
2. Thirdly, the climate models must adequately reproduce major weather pattern characteristics such as frequency, seasonality etc.
3. Finally, a WG must adequately reproduce the spatial and temporal structure of local climate variables.

In the present work, we focus on the reproduction of the spatial and temporal structure of the climate. The focus on the Rhine We developed an optimal weather pattern classification for the Rhine basin with 40 classes based on the SANDRA algorithm ([Vitar 2017](#)). Furthermore, in total 15 GOIs from the OIGPS project were investigated focussing on their ability to resemble weather pattern. This follows the procedure proposed by ([Jachens et al. 2016](#)). The results are summarized in the following sections:

Previously, some studies indicated that the link between weather patterns and local variables may not fulfil stationary assumption ([Vitar/Hewitson_2006](#)) point out that land use and land cover changes could affect local climate and thus modify the link to the ([Vitar/Beck_2016](#)) found that large parts of the climate variability between 1750 and 1995 in Central Europe could not be explained by changes in atmospheric circulation. In some periods particularly during summer, frequency changes of weather patterns explain only about 20% of the total variance. They used, however, a weather pattern classification solely based on mean sea level pressure, which might insufficiently train

Some more hints

pitfalls ...

... in latexdiff

- empty `.tex` file included won't compile
- no `input` commands allowed before `\begin{document}`
→ i.e. `preamble` not in extra file

... in todonotes

- no umlauts but rather `\"a`, `\"o`, `\"u`, `\ss{}`

Thanks for your attention and happy writing :)