LaTeX

- epstopdf
- Overview-Latex

epstopdf

(Automatically) converting EPS-Files to PDF-Files with epstopdf

If you need to convert an .eps-File to a .pdf-File, we highly recommend the usage of epstopdf. The conversions are of really high quality and look almost as good as the original graphics.

Converting by hand

To convert a given file called "foo.eps", simply type

```
epstopdf foo.eps
```

into your shell.

Converting files automatically by using the epstopdf-package

It is also possible to convert your .eps-Files automatically while compiling your .tex-Files. To achieve this, you need to

- include the graphix-package into your TeX-document with the pdftex-option and include the epstopdf-package **after** the graphicx-package, so your document header should look like this:

```
\usepackage[pdftex]{graphicx}
\usepackage{epstopdf}
```

- allow pdfTeX to execute external programs while compiling your document by setting the "--shell-escape" (TeXlive, on Ubuntu/Solaris) or "--enable-write18" (MikTeX, on Windows) command line option. So, if you compile your document (called foo.tex in the example) on a shell directly, you would enter the following commands into your shell.

Using **TeXlive**:

```
pdflatex --shell-escape foo.tex
```

Using **MikTeX**:

```
pdflatex -enable-write18 foo.tex
```

Modifing editor settings

Instead of compiling your TeX-document directly on a shell, you could amend the configuration of your favorite TeX-editor, e.g. Kile or WinShell.

In Kile, open up the configuration window via "Settings -> Configure Kile...", expand "Tools" on the left and click on "Build" just below "Tools". Then, select "PDFLaTeX" in the "Select a tool"-list and add "-shell-escape" to the "Options"-textfield on the right so that this textfield now should contain text similar to the following:

```
-interaction=nonstopmode -shell-escape '%source'
```

Click on "Ok" to save this modification.

In WinShell, open the "Program Calls"-tab in the "Options"-window by clicking "Options -> Program Calls...", select "PDFLaTeX" from the "Program"-list on the right and add "-enable-write18" into the "cmd-Line"-textfield so that this textfield should contain text like this:

```
-interaction=nonstopmode -enable-write18 -synctex=-1 "%s.tex"
```

Click on "OK" to save you new options.

In other TeX-Editors, there should be similar possibilities to modify the way your TeX-tools are executed.

It is possible now to convert .eps-images automatically to .pdf-files while typing your documents in your favorite editor.

Official Package Documentation

For more information, please have a look at the official package documentation of the epstopdf-package at https://ctan.org/pkg/epstopdf?lang=de

Overview-Latex

TeX/LaTeX Documentation

- A short introduction to LaTeX: https://tobi.oetiker.ch/lshort/lshort.pdf
  - Based on the original German edition found here: http://www.ctan.org/tex-archive/info/lshort/german

UZH Style Templates

The UZH offers LaTeX templates with official corporate design. Below you can find versions of these templates adapted for the Institute of Mathematics.

Letter

The UZH Letter style is based on the KOMA Letter package. **Documentation**:
http://www.ctan.org/pkg/scrlttr2

Please make sure that the return address (Institute of Mathematics) is mentioned on the envelope!

Direct downloads of the letter templates:

- UZH Brief deutsch mit Absender (pdf) (ps) (tex)
- UZH Brief deutsch ohne Absender (pdf) (ps) (tex)
- UZH Letter English with Sender (pdf) (ps) (tex)
- UZH Letter English without Sender (pdf) (ps) (tex)

Please replace the text enclosed by angle brackets (`<>`) with the appropriate information.

Presentation

Direct downloads of the persentation templates:

- UZH Präsentation deutsch (informell) (pdf) (ps) (tex)
- UZH Präsentation deutsch (pdf) (ps) (tex)
- UZH Presentation English (informal) (pdf) (ps) (tex)
- UZH Presentation English (pdf) (ps) (tex)

Working with Templates on the I-MATH Terminals

If you are working with the I-MATH Terminals, you can also find the official LaTeX templates linked above at `/scratch/templates/latex`. **Copy** the desired template to your home directory, or any other suitable location (Do not edit the files in `/scratch/templates/latex`) and edit it with your favorite LaTeX editor.

Installation of Corporate Design Templates

You have to perform the steps below only when using the LaTeX on your Notebook or Personal Computer.

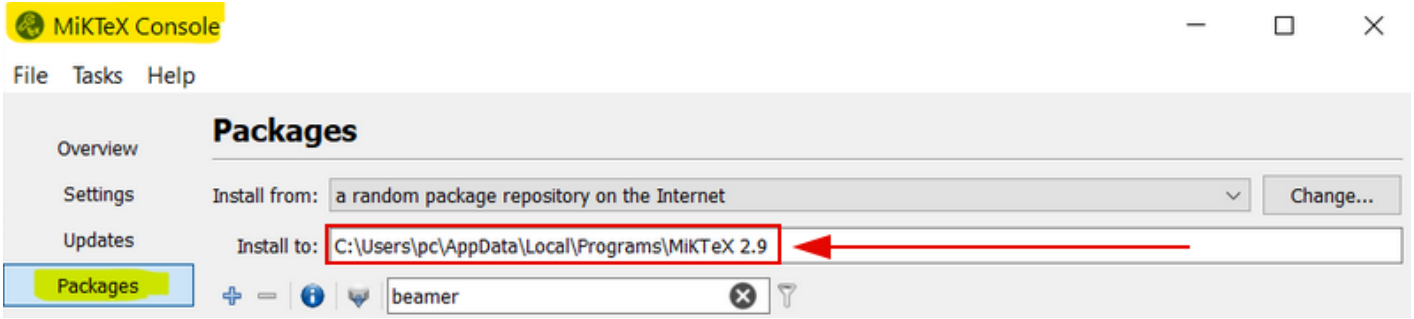
Windows

This instruction assumes that the latest MikTeX is installed including KOMA-Script, lastpage, mptopdf, and arial package. In order to ensure you're running the latest version or installing missing packages, start the MikTeX Console and select "Updates" from the dropdown menu. Press "check for updates" and install the available ones.

Letter Templates

Download the LaTeX Letter templates from math www (access). Unzip the package, and copy the entire `nmathletter` directory to `C:\\AppData\Local\Programs\MiKTeX\tex\latex\`.

Find install Path: Open MiKTeX Console --> Packages --> "Install in:" --> use this path for your packages



Beamer Templates

Download the LaTeX Beamer templates from math www (access). Unzip the package, and copy the entire `mathbeamer` directory to `C:\\AppData\Local\Programs\MiKTeX\tex\latex\`.

Ubuntu

You need to have the Ubuntu package texlive-fonts-extra installed:

In order to install the Arial font, type on a command line: `sudo getnonfreefonts --sys arial-urw`

If there is no `getnonfreefonts` :

```
cd /var/tmp
curl -O http://tug.org/fonts/getnonfreefonts/install-getnonfreefonts
texlua install-getnonfreefonts
getnonfreefonts --sys arial-urw
```

Letter Templates

- Download the LaTeX Letter templates from math www (access).
- Unzip the package, and copy the entire `nmathletter` directory `/usr/local/share/texmf/tex/latex`.
- Download https://ctan.org/pkg/koma-script and save it to `/usr/local/share/texmf/` and unzip the file in that directory.
- Run `sudo mktexlsr` in order to update the search database of latex.

Beamer Templates

- Download the LaTeX Beamer templates from math www (access).
- Unzip the package, and copy the entire `mathbeamer` directory to `/usr/local/share/texmf/tex/latex`.
- Run `sudo mktexlsr` in order to update the search database of latex.

MacOS X

installation of required packages and prepare installation

- Download and install the latest MacTeX. MacTeX can be obtained here.
- next, you need to install the required fonts.
- before this can be performed, you need to set the correct installation path. Please open a **terminal** and type `export PATH="/Library/TeX/texbin/:$PATH"`

- Download the installer "install-getnonfreefonts" to i.e. the Downloads directory:

  getnonfreefonts can be obtained here
  - assuming the terminal is still open, please navigate (cd) into the directory containing the downloaded file
  - type `sudo texlua install-getnonfreefonts`
  - do not close the terminal, as we need it for the next steps

Installing the Arial Font

- in the terminal type now:

  `sudo getnonfreefonts --sys arial-urw`
  - The font Arial will be downloaded

- next, in order to install the fonts run this command in the same terminal

  `updmap-user`

Further notes can be found:

- https://www.tug.org/mactex/

Letter Templates

Download the LaTeX Letter templates from math www. Unzip the package, and copy the entire `nmathletter` directory to `/usr/local/texlive/texmf-local/tex/latex/local` (you need administrative privileges to perform this task and you will be asked to enter your password).

Run `sudo mktexlsr` in a terminal in order to update the search database of latex.

Beamer Templates

Download the LaTeX Beamer templates from math www. Unzip the package, and copy the entire `mathbeamer` directory to `/usr/local/texlive/texmf-local/tex/latex/local` (you need administrative privileges to perform this task and you will be asked to enter your password).

Run `sudo mktexlsr` in a terminal in order to update the search database of latex.

- note: all sudo introduced command requires a password to perform the action

UZH Logo

If you want to include the UZH logo in a LaTeX document, download this zip file. Read the `README.pdf` file for instructions.

Tips and tricks

Count words in a latex document

```
Kile: File > Statistics
```

kdvi

- KDVI

Custom paper size

```
\documentclass[a4paper]{amsart}
\usepackage{amssymb,latexsym}
\usepackage{graphicx, pgf, pst-all}

\usepackage[paperwidth=17truecm, paperheight=24truecm, centering, twoside,
margin=1.58cm,heightrounded]{geometry}

\textwidth14truecm
\textheight20truecm
```

Looking for a symbol

- http://detexify.kirelabs.org/classify.html

Converting .eps-files (automatically) to .pdf-files

- epstopdf

Include a movie in a PDF Document

- movie15

Example: omega.tex omega.mpg omega.pdf

```
[user@host] pdflatex omega.tex
```

View the PDF File in Acrobat Reader. It probably won't work on the Terminals.

Example

- movie.tex

```
\documentclass[12pt,landscape]{article}
\usepackage{geometry}
\geometry{verbose,letterpaper}
\usepackage{movie15}
\usepackage{hyperref}
\begin{document}
Whispering-gallery mode in a quarter circle:
\begin{figure}[ht]

\includemovie[
  poster,
  text={\small(2-twist-spun.mp4)}
]{6cm}{4.8cm}{2-twist-spun.mp4}

\end{figure}
\end{document}
```

- To include a Youtube Flash movie, convert it to mp4:
  - Video example: http://www.youtube.com/watch?v=6lIM9p6XOKo
  - Convert it online: http://keepvid.com
    - Download the MP4 version: http://www.youtube.com/watch?v=6lIM9p6XOKo ">http://keepvid.com/?url=http%3A%2F%2Fwww.youtube.com%2Fwatch%3Fv%3D6lIM9p6XOKo
- compile:

```
pdflatex movie.tex
```

- View in acrobat reader: movie.pdf

Graphic / Drawing

xfig

- old, powerful and strange
- http://www.xfig.org/userman/latex_and_xfig.html (Dead link)

inkscape

- modern drwaing application
- http://famelis.wordpress.com/2011/04/12/latex-and-inkscape/
- http://wiki.inkscape.org/wiki/index.php/LaTeX (Dead link)
- e.g.:

```
Save your image, eg as “image.svg”. In addition, in Inkscape go to the
option File -> Save a Copy and chose PDF as your output format in the
same folder as the SVG. In the PDF options popup that comes right after
select the options:

  * PDF+LaTeX: Omit text in PDF and create LaTeX file
  * Export area is drawing

Save and go to your LaTeX document.

\begin{figure}
    \centering
    \def\svgwidth{\columnwidth} % sets the image width, this is optional
    \input{image.pdf_tex}
\end{figure}
```

Kile

Path setting

Kile users should make sure, that under `Settings|Configure Kile|Tools|Build` for *LaTeX* and *PDFLaTeX* the command is `/usr/sepp/bin/latex` resp. `/usr/sepp/bin/pdflatex`.

Access: restrictions

Some files are copyright protected. To access such files (links named 'math www'), you have to provide your I-MATH credentials.

Converting Latex to Word (and more)

- Overview: https://texfaq.org/FAQ-fmtconv

way	Correct math symbols	Keep Layout	Editable
Open the PDF under Windows in Adobe Acrobat (not Adobe Reader) and 'Export as Word'	-	-	✔
Open the PDF under Windows in Adobe Acrobat (not Adobe Reader) and 'Export as Image'. Take all Images, one per side in an empty Word Document.	✔	✔	-
LyX > ODT > Word	?	?	?
pandoc > DOCX	?	?	?

TeX4HT: http://www.tug.org/applications/tex4ht/mn.html * All possible filters: `ls -l /usr/share/tex4ht` * Converting a LaTeX Document to MS Word: `mk4ht oolatex filename.tex`	?	-	✔