

# latex-example

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## 1 Version information

Emacs version: GNU Emacs 24.4.1 (x86\_64-unknown-linux-gnu, GTK+ Version 3.10.8)  
of 2014-10-31 on dflt1w  
org version: 8.2.10

## 2 Some L<sup>A</sup>T<sub>E</sub>X links

- Link formatting
    - This is described in the L<sup>A</sup>T<sub>E</sub>X [hyperref](#) manual.
    - This is an example how to get links that are not framed by red rectangles, but just have a blue font color
- ```
#+LaTeX_HEADER: \hypersetup{colorlinks=true, linkcolor=blue}
```

- Building a L<sup>A</sup>T<sub>E</sub>X Document Class
  - <http://tutex.tug.org/pracjourn/2005-4/hefferon/hefferon.pdf>

### 3 Equations

This is an example for an equation

$$cores_{extrapol} = cores_{intern2013} \cdot offl\% \cdot \frac{gf \cdot (volume_{user} + volume_{intern})}{volume_{intern}}$$

This is an example for an equation embedded in the text  $cores_{extrapol} = cores_{intern2013} \cdot offl\% \cdot \frac{gf \cdot (volume_{user} + volume_{intern})}{volume_{intern}}$  The text continues after the formula.

Here follows a numbered equation that also can be referenced like in the following parentheses (eq 1).

$$cores_{extrapol} = cores_{intern2013} \cdot offl\% \cdot \frac{gf \cdot (volume_{user} + volume_{intern})}{volume_{intern}} \quad (1)$$

## 4 Figures

I can reference the figure like this: Fig. 1.

Note

- there must be no empty line between the picture's link and the meta definitions for name, caption, etc.
- The OPTION `tex:t` must be set for references to work.

| Specifier | Permission                                                                                                                                          |
|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| h         | Place the float here, i.e., approximately at the same point it occurs in the source text (however, not exactly at the spot)                         |
| t         | Position at the top of the page.                                                                                                                    |
| b         | Position at the bottom of the page.                                                                                                                 |
| p         | Put on a special page for floats only.                                                                                                              |
| !         | Override internal parameters $\text{\LaTeX}$ uses for determining "good" float positions.                                                           |
| H         | Places the float at precisely the location in the $\text{\LaTeX}$ code. Requires the float package, e.g., float. This is somewhat equivalent to h!. |

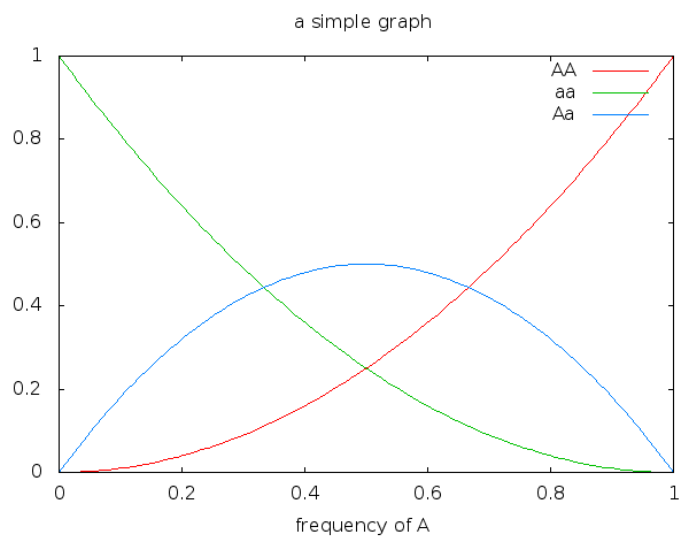


Figure 1: A simple graph

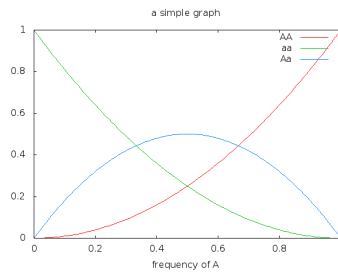


Figure 2: A simple graph at half the width

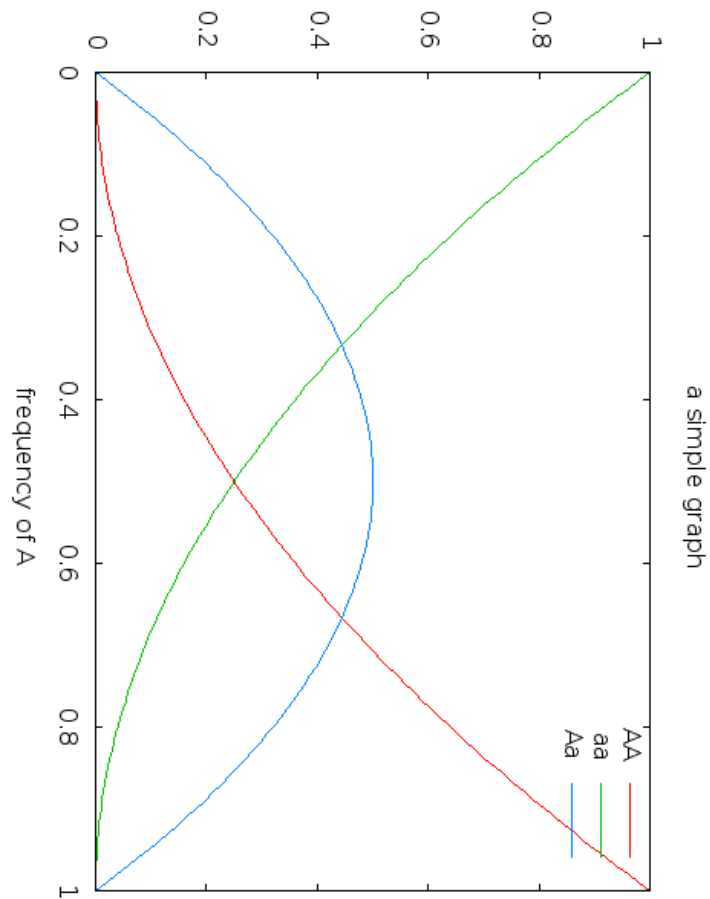


Figure 3: A simple graph rotated 270°

A pdf can be included the same way, e.g. by specifying

```
#+ATTR_LATEX: :options page=10 :width 10cm
[[file:myfig.pdf]]
```

## 4.1 inclusion of SVG graphics

q.v. my plantuml related documentation.

## 5 Footnotes and margin notes

This is a text with a footnote <sup>1</sup>. The footnote will be displayed on the bottom of the current page. One can also place all footnotes in a separate chapter called *footnotes* at the end of the org file<sup>2</sup>.

Margin notes one can set by directly inlining the L<sup>A</sup>T<sub>E</sub>X command as demonstrated here.

*a margin  
note*

## 6 Tables

### 6.1 nicer table formatting using booktab style

Some **interesting tips** for booktab style tables by M. Püschel.

Whether table captions appear above or below the table can be configured using this variable:

```
(setq org-latex-table-caption-above nil)
```

| Table 1: default table |          |          |          |
|------------------------|----------|----------|----------|
| Column 1               | Column 2 | Column 3 | Column 4 |
| 1                      | 10       | 100      | 1000     |
| 2                      | 11       | 101      | 1001     |
| 3                      | 12       | 102      | 1002     |
| 4                      | 13       | 103      | 1003     |
| 5                      | 14       | 104      | 1004     |
| 15                     | 60       | 510      | 5010     |

| Table 2: table using booktabs style |          |          |          |
|-------------------------------------|----------|----------|----------|
| Column 1                            | Column 2 | Column 3 | Column 4 |
| 1                                   | 10       | 100      | 1000     |
| 2                                   | 11       | 101      | 1001     |
| 3                                   | 12       | 102      | 1002     |
| 4                                   | 13       | 103      | 1003     |
| 5                                   | 14       | 104      | 1004     |
| 15                                  | 60       | 510      | 5010     |

---

<sup>1</sup>This is the footnote text

<sup>2</sup>this is a footnote from the end of the org document

## 6.2 Math in tables

Use *math* or *inline math* together with *array* environment.

Here we use the simple math mode

| <i>Column1</i> | <i>Column2</i> |
|----------------|----------------|
| $\sin(x)$      | $\tan(x)$      |

This uses the `inline-math` mode

| <i>Column1</i> | <i>Column2</i> |
|----------------|----------------|
| $\sin(x)$      | $\tan(x)$      |

## 6.3 Table font size

The font size is determined by the `:font` switch in the `#+ATTR_LATEX` line.

| Column 1  | Column 2        |
|-----------|-----------------|
| Some text | Some other text |
| 10        | 20              |

Sidenote:

- When a caption is used, the latex export uses a `table` environment.
- The previous captionless table generates a `tabular` environment.

Table 3: Table small size

| Column 1  | Column 2        |
|-----------|-----------------|
| Some text | Some other text |
| 10        | 20              |

Table 4: Table footnotesize

| Column 1  | Column 2        |
|-----------|-----------------|
| Some text | Some other text |
| 10        | 20              |

Table 5: Table tiny size

| Column 1  | Column 2        |
|-----------|-----------------|
| Some text | Some other text |
| 10        | 20              |

## 6.4 Sidewaystable

Using the `sidewaystable` together with a `:placement` [H] specifier requires that one uses the `rotfloat` environment.

Table 6: A sidewaystable

| Column 1 | Column 2 | Column 3 | Column 4 | Column 5 | Column 6 |
|----------|----------|----------|----------|----------|----------|
| 1        | 10       | 100      | 1000     | example  | result   |
| 2        | 11       | 101      | 1001     | example  | result   |
| 3        | 12       | 102      | 1002     | example  | result   |
| 4        | 13       | 103      | 1003     | example  | result   |
| 5        | 14       | 104      | 1004     | example  | result   |
| 6        | 15       | 105      | 1005     | example  | result   |
| 7        | 16       | 106      | 1006     | example  | result   |

## 7 Text font size

Text Example Text Example Text Example Text Example Text Example (default) Text Example Text Example Text Example Text Example Text Example (default)

## 8 Index creation

Must be solved by including L<sup>A</sup>T<sub>E</sub>X source commands:

- Requires in the preamble
  - `\usepackage{makeidx}`
  - `\makeindex`
- Mark up words by `\index{word}`
- At the location where the index should appear, use `\printindex`
- to render the document, a call to the `makeindex` binary needs to be added in the build command. I use the following definition in my `init.el`.

```
(setq org-latex-pdf-process
  (let
    ((cmd (concat "pdflatex -shell-escape -interaction nonstopmode"
      " -output-directory %o %f")))
    (list cmd
      "cd %o; if test -r %b.idx; then makeindex %b.idx; fi"
      cmd
      cmd)))
```



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