

# Tips on writing nice L<sup>A</sup>T<sub>E</sub>X documents

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## Abstract

This document is intended to explain basic style and typography guidelines to the students of the “travaux pratiques” class and beginners with L<sup>A</sup>T<sub>E</sub>X in general.

## Introduction

We won't describe usage of commands, that is what references and manuals are for. We outline fundamental rules of typing a short article or a report so that it has a compact form and a nice look.

## 1 General remarks

- 1.1 Typing in L<sup>A</sup>T<sub>E</sub>X is different from writing on a black board or taking notes by hand. In general, we use much less arrows, circles, shortcuts, and even colors, in an academic typed document.
- 1.2 Don't use document classes with chapters (as book or report) for a short document. One normally uses the article class.
- 1.3 If your work is to be printed, try to make it black and white as much as possible. Unnecessarily colored texts, figures, or ornaments might look bad on a black and white printer.

## 2 Title page

- 2.1 A report or an article starts with the *title, authors' names, and date*, usually produced using the command `\maketitle`. You can include your e-mail using the command `\thanks` inside the `\author` command, as is done in this document.
- 2.2 Abstract comes after the title. It describes shortly what is done in the whole text.
- 2.3 You may but you don't have to include a table of contents.
- 2.4 The first section is usually the introduction and should, as it clearly says, introduce the subject. Don't start directly with a definition or a theorem.
- 2.5 Make a clear structure of the text using sections and subsections. The titles should be short and descriptive.

## 3 Text and mathematics

- 3.1 *Write text! Describe and explain!* Formulas are formatted nicely using L<sup>A</sup>T<sub>E</sub>X but they only shine if you surround them by a smooth text.
- 3.2 One should usually not use symbols as  $\forall$ ,  $\exists$ ,  $\Leftrightarrow$ , and  $\Rightarrow$  (they make the text less readable and uglier), apart from centered formulas. The symbols  $\Leftrightarrow$  and  $\Rightarrow$  can often be avoided even there.
- 3.3 *(Almost) everything is a sentence!* Except figures, tables, titles, and some special words (Theorem, Remark, ...), everything you write should be a grammatically correct sentence. That means capitalization, punctuation, word

order, etc. Yes, even a centered formula is part of a sentence and should be treated as such. Read your text aloud, it will help you spot awkward.

- 3.4 Any formula that is too long (say 3 cm) or too high (when it reasonably stretches the line height) should be centred. In particular, avoid in-line fractions (replace  $\frac{a}{b}$  by  $a/b$ ).
- 3.5 Enclose in-line math formulas in dollars ( $a+b$ ), even if it is just one letter. It looks different!
- 3.6 You start a new paragraph by leaving an empty line in the source file. A new paragraph is indented by the length `\parskip`. Set its value to zero if you don't like indentation or if your paragraphs are too short. Divide your text to paragraphs and don't use `\` to start a new line within a paragraph.
- 3.7 Don't start a sentence with a math symbol. Always start it with words.
- 3.8 Bullet point lists and numbered lists can be separate sentences or paragraphs, or parts of a sentence that begins before the list. Give them the right punctuation.
- 3.9 To structure mathematical text, use the `amsthm` package for displaying theorems, lemmas, proofs, etc. It also provides numerous possibilities for numbering and your own definitions.
- 3.10 Type centralized formulas using the commands from the package `amsmath`. Avoid using boxes around formulas (or anything else), unless it is truly necessary.
- 3.11 Only those centralized equations which you refer to in the text should be numbered.

## 4 Bibliography, figures, and tables

- 4.1 Every item of the bibliography must be cited in the text. Even if it is just a review book that was recommended, cite it at least in the introduction and refer to it as to an additional source for interested readers.
- 4.2 When you insert figures or tables, always provide a caption. Captions should be descriptive.
- 4.3 Figures and tables are floats which means that their position is not fixed by default. A reader can skip them and only consult them if they are referred to in the text. Conclusion: make a reference to every figure and table you use.
- 4.4 How to create figures? The best figures are from vector images (pdf, eps, svg, ...) but also high-resolution raster images are fine. Use your preferred editor (Gimp, Inkscape, ...) or export your figures from a mathematical software (Mathematica, Matlab, Maple, ...). The most customizable (but more difficult to create) figures can be done using packages as PStricks, TikZ, pgfplots, etc.

## Conclusion

Mind these simple rules, learn more about L<sup>A</sup>T<sub>E</sub>X and its usage in academic writing, and observe how others are using it. Good luck!

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