

# Style Guide - Version June 14, 2017

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## 1 Introduction

The following is a list of style guidelines I try to follow in my papers. This might be useful for PhD students. It is work in progress and I am extending it continuously.

## 2 General style

- Know your audience, both readers and potentially targeted journals and write accordingly.
- If you use theoretical constructs with which your audience is likely not to be familiar, include the definition or appropriate references.
- Avoid repetition of words and formulations unless you do it intentionally to stress an analogy.
- Avoid long sentences. Clarity trumps elegance. A sentence longer than two lines is usually too long.
- Try to avoid abbreviations if reasonable. Avoid abbreviations as e.g. “Thm.” or “iff”.
- Do not use contractions such as “don’t” in papers.
- Do not use math symbols to abbreviate text, e.g.  $\exists$  for “there is” etc.
- Be consistent in your choice of British or American English.
- Learn and follow common standards used in the research community for symbols, abbreviations, etc.
- Use parentheses and footnotes sparingly, prefer footnotes.
- Use clear and descriptive section headings.
- Diagrams, lists, enumerations etc. are useful.
- Aim at being clear and not at showing off your mathematical knowledge. It is often acceptable to correct or make more precise a statement in a footnote to demonstrate that you are aware of the wider context.

## 3 General typesetting

- Always run a spell checker over the file when the text or part of it are meant to be complete.
- Abbreviations such as “i.e.” or “e.g.” should always be connected by an unbreakable space, i.e. an “~” to the next word to avoid too much space, e.g. “...as e.g.~a set of...”
- Do not write Latin words or abbreviations such as “i.e.” in italics. It looks pretentious.

- References to equations, citations etc. should always be connected to the previous word by an unbreakable space, e.g. “...as found in~\cite{...}”.
- Numbers should be connected to the next or previous word by unbreakable space.
- Dashes between names with two -, e.g. “Yang--Mills theory” etc.
- Avoid hyphens or dashes wherever possible to avoid confusion with minus signs.
- Avoid overstructuring the paper into subsubsubsubsections etc. A section should be at least a third of a page long.
- Look up rules which you are not sure about. There are many useful style guides online. Choose a style you like and learn the reasons for the various rules. Try to notice what you enjoy in other papers.

#### 4 Punctuation rules

- Make sure your punctuation in the bibliography etc. is consistent.
- Always use `amsmath` and `\dots` for three dots. It chooses automatically the correct version (`\ldots` vs `\cdots`)

#### 5 Equations, formulas, numbers

- All equations get numbers. It’s easier to find a specific one if all equations are numbered. Labeling only equations that one later refers to is for people who care more about looks than about usability. Exception: Spacing issues.
- All equations need punctuation marks, except diagrams, which would look weird. Always put a space, preferably a “~” separating the formulas from the punctuation marks.
- An equation followed by “which” or “where” ends in a comma, one followed by “with” does not.
- Never start a sentence with a formula or a mathematical symbol.
- Typeset equations in a logical and orderly way, in particular arrays of equations and equations extending over several lines.
- Try to avoid to attach a footnote to a formula.
- Avoid consecutive inline formulas as e.g. “Because  $3 < 4$ ,  $3k < 4k$ .” Separate inline formulas by text.
- Avoid hyphens that could be confused with minus signs, as e.g. “a degree-1 object”.
- Space before and after formulas should be “~”.
- Many mathematical terms should not be set in italics, in particular differentials  $d$ , Euler’s constant  $e$  and the imaginary unit  $i$ . Same holds for the trigonometric functions and operators such as the trace  $\text{tr}$ .

- Set diagrams with `xymatrix`, if possible.
- Integration is an operation, so follow the physicist’s convention and write  $\int dx f(x)$  instead of  $\int f(x)dx$
- Always use the appropriate symbols, e.g. `\in` instead of `\epsilon` as in  $1 \in \mathbb{N}$  and `\langle` instead of `<` as in an inner product or dual pairing.
- Use the correct size of summations, direct sums, unions running over indices.
- Add space to make formulas look nice and more readable. For example, add space after e.g. differentials, `:` or `|` when used as “such that”
- Make sure that figures and diagrams are typeset nicely. In particular, use LaTeX labels in all diagrams!
- Similar formulations to “the following equation” preceding an equation should end in a colon.

## 6 Bibliography

- Learn and use BibTeX as well as a bibliography manager of your choice!
- There are many possible bibliography styles. Choose one, but be consistent!
- Choose the closest BibTeX style file and adjust it to your needs. If you publish with me, use mine.
- The bibliography is part of the paper. Make sure it looks clean!
- Make sure that your punctuation is consistent.
- Make sure that your capitalization of titles is consistent.
- Make sure that your formatting of journal names and preprint references is complete and consistent.
- Make sure that references are correct and up to date.
- Check preprints, they may have been published since you started writing.