LaTeX - Communication in Science - Technical information

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1. Referencing figures, equations and tables

Figures, equations and tables should be referenced with: Fig. `\ref{f:ref-name}`, Eq. `\ref{e:ref-name}` and Tab. `\ref{t:ref-name}`. This can only be done, if they have a label of the same name defined (i.e. `\label{e:ref-name}`).

2. Equations and units

Equations need to be part of the sentence, so proper use of commas and full stops should be considered. For units, check if at the beginning of the .tex file is a `\usepackage{units}`. If not, add it and write units in math mode (inside `$...$` or equation) as: `\units[1.45]{m~s^{-1}}`. First argument is the value and second argument is the unit. Any large numbers (like 1000000) can be made more readable with a short spacing `\,` (i.e.: `1\,000\,000`). Here is a list of all spaces that can be used in math mode:

https://www.sharelatex.com/learn/Spacing_in_math_mode#Spaces

3. Bibliography/References/Citation rules

Bibliography should not be added as a normal section. Instead, the following should be used:

`\bibliographystyle{elsarticle-num}`

`\begin{thebibliography}{99}`

`\raggedright`

`\bibitem{citename} Author/Authors, \emph{Title}, Journal (Year).`

`\end{thebibliography}`

Here, `\raggedright` aligns the text to the left. `\bibitem{citename}` denotes a single citation (that we can reference with `\cite{citename}`).

- When using one or two authors, use for example:

  `\bibitem{example1}` J. L. Rosner, `\emph{`Low--energy photon production in neutrino neutral--current interactions`}`, Phys. Rev. D 91, 093001 (2015).

- When using more authors, use for example:

  `\bibitem{example2}` H. B. Hartanto `\emph{`et al.`}`, `\emph{`Higgs boson production in association with top quarks in the POWHEG BOX`}`, Phys. Rev. D 91, 094003 (2015).

- When using an internet link, use for example:

  `\bibitem{example3}` LaTeX short math guide, `\url{`http://www.ung.si/~sstanic/teaching/CIS/LaTeX_short-math-guide.pdf`}`, accessed in May, 2015.

- If using `\url`, please make sure that `\usepackage{url}` is at the beginning of the .tex

file. It automatically splits the link at specific characters. In case, it does not split it correctly or if you wish to split it differently, use for example:

`\url{`[`http://www.ung.si/~sstanic/teaching/`](http://www.ung.si/~sstanic/teaching/)`}\\`

`\url{CIS/LaTeX_short-math-guide.pdf}`

4. Adding new commands

Sometimes writing specific parts of equations can be very time-consuming (especially if using specific characters). For that, you can define a new command right after the `\usepackage{...}` part of the .tex file and before the `\begin{document}` part of the file. This is done with, for example: `\newcommand{\diff}{\operatorname{d}\!}`

The first argument (`\diff`) defines the name of your new command (has to start with `\`). The second argument is the definition of what your command will do. In the example, the differentiation operator can now be inserted in equations with `\diff` `\operatorname{d}` makes the differentiation operator and `\!` slightly reduces the space to the next character). This command is used in Eq. (1) in the attached file.

5. BibTeX

BibTeX is a useful tool to manage bibliography collections. BibTeX bibliography file which implements the above style is in the file `cis_style.bst`.