Best Practice Guidelines for LaTeX Manuscripts

Please note that observing the following details in creating your manuscript will promote smooth production of your work:

- Please ensure your LaTeX file can be compiled without errors in a recent version of LaTeX. We recommend uploading the manuscript to Overleaf (free service) and running the compiler there.
- Please avoid including multiple levels of linked sub-files. Well-organized file structure and clear file names improve handling enormously.
- Please avoid macro packages which change standard layout and enumeration settings, such as `fancyhdr`, `a4wide`, `enumerate`, and `enumitem`. These will have to be replaced with standard settings during production.
- The use of `\def` is not recommended. Instead, please replace all instances with the appropriate `\newcommand`. This prevents existing commands being inadvertently replaced, producing unexpected errors (more explanation below).
- Please use standard LaTeX commands consistently for character emphasis, such as `\mathbb`, `\mathcal`, or `\mathfrak` and avoid including additional font-related packages such as `bbm`, `dsfonts`, `eucal`, `mathrsfs`, `mathabx`, and `mathtools`.
- The `\text{...}` command is recommended for text in math environments rather than `\mbox` or `\hbox` constructions.
- Please do not use color for emphasis in running text, particularly not the `xcolor` package (see below for further explanation). As an exception, color may be used for highlighting syntax in code listings.
- Images should always be separated from the text (using proper `\includegraphics` commands), must have a caption and must be referenced in the text. Please do not use `wrapfigure` or `subfigure`.
- Please note that where `tikz` or `xy` packages (or similar ones creating diagram-like structures) are used, the output cannot be created on the fly for all publication formats produced, but only for PDF. For all other formats, the output has to be included as an image instead (see further details below).
- Please do not use `\pageref`, as this will lead to dead links in some output formats, since page orientation is only valid for the PDF (see explanations below).
- Please avoid linking back to the manuscript from the bibliography, and do not include footnotes in the bibliography.

Why are we asking you to observe these restrictions?

We are publishing and distributing your work not only in PDF, but also in other digital/online versions such as html and epub, which are based on XML, the industry standard for data exchange. Using XML as a basis allows us to provide data to other specific interfaces such as Braille machines as well as indexing, abstracting and library services. Satisfying all the requirements of these formats dictates many of

the above restrictions, as these are produced from the LaTeX version. The functions and packages that are not recommended in the guidelines above may work in the PDF output, but not beyond that. Although the name PDF (Portable Document Format) suggests portability, it actually depends on the output medium: a professional postscript printer might not produce the same result as a local printer at home or at a department. A prime example of the limitations is that not all aspects of the page-oriented PDF output can be mirrored in other formats. This often requires the source to be adapted to allow all output formats to be produced from it.

Examples:

- Constructs such as

  ```
  $X+nY=0 \quad\hbox{for all $n>0$}$
  ```

  will not work properly and need to be replaced manually; instead use

  ```
  $X+nY=0 \text{ for all } n>0$
  ```

  to avoid nesting math environments. Note that the `\text` command also adds proper horizontal spacing.
- The command `\r` is already predefined as an internal command in TeX; if you want to define the set of real numbers and use, e.g., `\def\r{\mathbb{R}}`, this internal command is overwritten. If you use `\newcommand{\r}{\mathbb{R}}` for the same purpose, it will result in an error stating that `\r` is already defined. To avoid this, you could use `\newcommand{\R}{\mathbb{R}}` which would work well, but of course all instances of `\r` in your document need to be replaced by `\R`. Avoid using `\renewcommand`.
- Commands such as `\enlargethispage` or `\pagebreak`, etc. only work with a fixed output page size which is not valid for all formats. Such commands are then either ignored or produce strange breaks.
- Using too many fonts can produce errors in some output formats due to a restriction on the number of fonts that can be used simultaneously. Hence, please consider carefully which fonts are really needed and use these consistently in your manuscript. Also, please do not use fonts that have no proper postscript version as these cannot be handled by professional printers. Avoid the set of so-called Type 3 Postscript fonts, which sometimes occur in specific packages or in figures, as their characters will be omitted in the output. To check whether the document includes such Type 3 fonts, refer to the fonts tab in "Document Properties" in Adobe's Acrobat Reader: this will list all fonts used and whether these are Type 1, True Type (both of which are ok), or Type 3.
- Colors are problematic with regard to accessibility (lack of sufficient contrast between colors) and for other output formats, as colors cannot be freely integrated there. Such passages have to be embedded as images, which in turn will reduce readability. If, nevertheless, specific colors need to be defined, please include CMYK definitions of these colors as - depending on the output - some output drivers such as professional printers cannot deal with RGB colors. E.g.,

```
\definecolor{ultramarine}{RGB}{1,1,1}
%%\definecolor{ultramarine}{cmyk}{0,0,0,1}

\textcolor{ultramarine}{Colored text}
```

- For typesetting algorithms, please use either the `algorithms2e` package or ONE of the (`algpseudocode` OR `algcompatible` OR `algorithmic`) packages to typeset algorithm bodies and the `algorithm` package for captioning the algorithm.
- If you use the `newtxmath` package, do NOT include the `amsmath` package separately.
- Please try to avoid the `tikz`, `xy`, and `pstricks` packages if possible. These graphs/figures cannot be rendered in our other output formats, therefore can only be included there as rendered image files of a fixed resolution.
- Caution with packages which embed page-like structures within layout elements, such as `multicol` or `minipage` (sometimes used to create specific layout within `\mbox` or `\parbox`). These can cause significant problems for some output formats or can only be rendered as images.