

A GUIDE FOR AUTHORS PREPARING THEIR ACCEPTED MANUSCRIPT FOR IGT

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ABSTRACT. — Here is the abstract, which is short but nevertheless useful.

The aim of this document is to be at the same time a manual and a sample of a `.tex` file prepared in the class `cedram.cls` for submissions accepted for publication. The class `cedram` is a derivation of `amsart.cls` (version 2) implementing, among other things, the layout of the journal. Therefore all authors already at ease with the classes of the AMS should find it easy to adapt their source to `cedram.cls`. As a corollary, all packages whose name starts with `ams` (like `amsmath` or `amsfonts`) are already automatically loaded and you don't need to call them explicitly in the preamble⁽¹⁾.

To compile this document (and later your article based on the same class), the easiest way is to use LaTeXmk, either within your L^AT_EX environment or on the command line as

```
latexmk -pdf sample.tex
```

which will take care of running `pdflatex`, `bibtex` and the rest as many times as needed.

1. The beginning

1.1. Metadata

As you can see in the source file of this document, all “metadata” like keywords, subject numbers, authors, affiliations, email (and url) should

Keywords: isotriviality, log-selfishness, Gauß law.

2020 *Mathematics Subject Classification:* 10X99, 14A12, 11L05.

(*) J. Fourier was partially supported by the Revolutionary Committee.

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⁽¹⁾There is one exception: the package `amscd` is not loaded by default.

be in the relevant field separated by comma-space if needed. Beware the special role played by `\` in the `address` field: it is rendered as a comma, so you should not separate, e.g. your institution and the city by a comma, but by `\\`. Have a look at this document's `address` field for more details.

A special treatment is reserved to acknowledgement and thanks. The class provides a field `\thanks`, whose use you can see at the bottom of this page (in a footnote). It is intended for a short acknowledgement of funding, hospitality, grants, etc. If you have longer and more wordy thanks that you wish to address to someone, there is a command `\longthanks` which creates a non-numbered subsection in which you can enter your wordy thanks. It is *not* like `\thanks`, so it will appear where you type it (unlike the other command, which needs to be filled before `\begin{document}`). The journal style requires that you insert it right before the bibliography, as it is in this very same file.

Concerning the title, apart from being of course in the field `\title{}`, all English common nouns should be lower-case, and upper-case letters should be used only for proper names (but see the §4 for a discussion about capitalization of adjectives). There is an optional field, to be entered in square brackets, for a shorter version of the title to be used in running headers; this, again, you see by looking at the source code of this very document and at the top of every odd page but the first. The same applies for authors.

2. Pre-loaded commands

In order to maintain uniformity about labelling and numbering of theorems and theorem-like environments, many environments are already defined by the class. This means that, unlike what you might be used to doing, you *should not* insert a list of commands like

```
\theoremstyle{plain}
\newtheorem{theorem}{Theorem}
\newtheorem{lemma}{Lemma}
...
...
\theoremstyle{remark}
\newtheorem{remark}{Remark}
```

at the beginning of the file. But most probably in your document you have already a bunch of occurrences of

```
\begin{thm}
If  $\sim xyz=0$  and  $\sim x \neq 0$  and  $\sim y \neq 0$  then  $\sim z=0$ .
\end{thm}
```

and we are going to discuss how you can adapt your source file. The list of all environments which are defined in the class is in Appendix A.

- (1) If in the class the kind of environment (say, Theorem) already exists and has the same name as in your file (as in the above example, since this is the case for `thm`), then you don't have to do anything, and the outcomes will be as intended:

THEOREM 2.1. — *A statement.*

PROPOSITION 2.2. — *A statement.*

- (2) If, for instance, you called your Theorem environment `satz`, so that a typical command in your source file is

```
\begin{satz}
  This template will prove useful.
\end{satz}
```

then you will receive an error. In this case you should replace the line in your preamble which reads

```
\newtheorem{satz}{Theorem}
or
\newtheorem{satz}{Theorem}[section]
or
\newtheorem{satz}[lemma]{Theorem}
```

simply by the line

```
\equalenv{satz}{thm}
```

where the first argument is the name *you* gave to the environment, and the second is the name of the environment in the class (see next subsection).

- (3) Finally, if you want to use an environment which does not belong to the list below (say, for instance, that you want an environment `Subsublemma`, called by the command `\begin{ssllmma}`) you need to modify the definition so that it reads

```
\theoremstyle{plain} % or {definition}
\newtheorem{ssllmma}[cdrthm]{Subsublemma}
```

and it will look like this:

SUBSUBLEMMA 2.3. — *It works*

and place it *after* `\begin{document}`.

Finally, of course, it is necessary that you either delete or at least comment out all of your definitions which fall into categories 1 and 2.

2.1. Three useful packages

2.1.1. cleveref

The `cleveref` package can be used to simplify cross-referencing the various environments: for instance, it allows us to write `\see \cref{prop:1}` instead of `\see Proposition~\ref{prop:1}`. The command automatically detects the names of the environments and uses the plural form, along with linking prepositions, adequately. To illustrate this, let us add a new proposition to this text.

PROPOSITION 2.4. — *A statement.*

Now, typing `We use \cref{thm:1,prop:1,prop:2}` produces “We use Theorem 2.1 and Propositions 2.2 and 2.4”. Please note that, when using `cleveref`, the label names cannot contain commas. To use the `cleveref` package, you need to have the command

```
\usepackage{cleveref}
```

in the preamble of the document, as is the case here — on line 15 of the source file. (This is also where you can load additional packages not already loaded by the style file and that you want to use.) The configuration of the `cleveref` package, on the other hand, is directly handled by the style file, so the above command is enough (please do not add configuration commands for `cleveref` in the preamble, unless for very specific reasons explicitly mentioned to us in a cover letter).

2.1.2. enumitem

The `enumitem` package is already loaded and its main point is to enhance the original capacities of L^AT_EX for creating lists. It mainly allows you to take care of labels properly (and, in the background, offers a better layout when things get hard). If you want to create a list like

- (1) $3 = 2^2 - 1$ is a prime number;
- (2) $7 = 2^3 - 1$ is a prime number;
- (3) $31 = 2^5 - 1$ is a prime number.

you can simply use `\begin{enumerate}` and then let each line start with `\item`, finishing with `\end{enumerate}`. Please avoid using the `itemize` environment if you want increasing labels (as above). `enumitem` allows for great flexibility in the choice of labels; it suffices to add the command `[label=...]` right after the `\begin{enumerate}` command (beware, it is `label` and not `\label`). The three dots can be basically whatever you want: the important thing is that you add a *counter* at a certain point, namely either of the six⁽²⁾

`\roman*` `\Roman*` `\alph*` `\Alph*` `\arabic*`

which offer, respectively, small/capital roman numbering, small/capital (latin) alphabetic numbering, and numbering in Arabic numerals 1, 2, 3, ... For instance, we can modify the above list to the following

- M1) $3 = 2^2 - 1$ is a prime number;
- M2) $7 = 2^3 - 1$ is a prime number;
- M3) $31 = 2^5 - 1$ is a prime number.

2.1.3. mathtools

Another very useful package which is automatically loaded is `mathtools`. It provides many commands, among others extensible arrows, fine-tuned matrices and very nice treatments of *paired delimiters*, for instance in order to define a `abs` command such that

$$\code{\abs\frac{a}{b}} \quad \text{gives} \quad \left| \frac{a}{b} \right|$$

but

$$\code{\abs*\frac{a}{b}} \quad \text{gives} \quad \left| \frac{a}{b} \right|.$$

For all instructions for this package, we refer to the well-written documentation available at <http://mirrors.ircam.fr/pub/CTAN/macros/latex/contrib/mathtools/mathtools.pdf>.

3. The bibliography

The bibliography style used for IGT is `cdraifplain` which is a minor modification of the AMS “plain bibliographical style”. All authors are asked to prepare their bibliography in a *separate* `.bib` file. If your file is called `mynicebibliography.bib` then you should put this file in the same folder as the `.tex` file and finish your document with the lines

⁽²⁾A bit more is allowed; see the package’s website.

```
\bibliography{mynicebibliography}
\end{document}
```

which is precisely the way this very sample file finishes. Of course, you will need to upload the `.bib` file along with the `.tex` for our production. Please try to keep your `.bib` file as simple as possible. You can clean it using programs such as `bibtol` in order to remove unused entries. Do not use the `\bibliographystyle` command as it is already contained in the class.

Creating the `.bib` file is quite standard; one easy way of doing so is by choosing your favourite database (for example MathSciNet or Zentralblatt) and find the `bibtex` string corresponding to the work you want to quote: then, copy-paste it. Here, some remarks are in order. First of all, the `\note{}` field is sometimes abusively used by these databases. For instance, the `bibtex` entry for Matoušek's *Thirty-three miniatures* reads

```
@book{Mat10Wrong,
  AUTHOR = {Matou\v{s}ek, Ji\v{r}\'\i},
  TITLE = {Thirty-three miniatures},
  SERIES = {Student Mathematical Library},
  VOLUME = {53},
  NOTE = {Mathematical and algorithmic applications
          of linear algebra},
  PUBLISHER = {American Mathematical Society, Providence, RI},
  YEAR = {2010},
  PAGES = {x+182},
  ISBN = {978-0-8218-4977-4},
  MRCLASS = {15-01 (05A10 05C70)},
  MRNUMBER = {2656313},
  MRREVIEWER = {Torsten\ Sander},
  DOI = {10.1090/stml/053},
  URL = {https://doi.org/10.1090/stml/053},
}
```

and you can easily find what went wrong by looking at the entry [8] in the bibliography of this file. The entry [9] is correct, and it is typeset as follows (note that the accents were also changed to follow the BibTeX syntax):

```
@book{Mat10Right,
  AUTHOR = {Matou{\v s}ek, Ji{\v r}{'\i}},
  TITLE = {Thirty-three miniatures. {M}athematical and
          algorithmic applications of linear algebra},
  SERIES = {Student Mathematical Library},
  VOLUME = {53},
```

```

PUBLISHER = {American Mathematical Society, Providence, RI},
YEAR = {2010},
PAGES = {x+182},
ISBN = {978-0-8218-4977-4},
MRNUMBER = {2656313},
DOI = {10.1090/stml/053},
}

```

Another reference for a book is [4], an example for a journal article is [13] and an example for a doctoral thesis is [12].

Speaking about bibliography, you could look at how the entry [5] is typeset in the `sample.bib` file; it gives instruction on how to obtain upper-case and accents, because if you simply write in a bibliographical entry

```

title={Moderate deviations of subgraph counts in the
      Erd\H{o}s-R{\e}nyi random graphs  $\{G(n,m)\}$ 
      and  $\{G(n,p)\}$ },

```

the result will be

Moderate deviations of subgraph counts in the erdős-rényi
random graphs $G(n, m)$ and $G(n, p)$.

We stress here that our policy is that, as in the title, we prefer all common English nouns to be lower-case even if in the original title the author or publisher followed a different style, as for reference [2] (see also § 4 for a discussion about capitalization of adjectives).

Another useful command is the field `eprint`: you can see it in action in reference [2]. The entry, which is “only” an arXiv submission, was typeset (in the `.bib` file, as usual!) as

```

@unpublished{Bab15,
  author = {Babai, L\{a}szl\{o}},
  title = {Graph isomorphism in quasipolynomial time},
  year = {2015},
  eprint = {1512.03547}
}

```

(you can check it by yourself in the `sample.bib` file) so that you see what `eprint` does. On a one hand, it prepends `https://arxiv.org/abs/` to the reference number (which was the only typeset argument) and, on the other, it creates a clickable link. In case the repository hosting the preprint is not the arXiv, you need to specify the prefix of the repository with `archiveprefix = {}` (this will replace the url of the arXiv with that of the repository). You can also use `archive = {}` for providing a repository

name, but this is not displayed in the reference list. For instance, reference [3] was typeset as

```
@unpublished{BHLM07,
  TITLE = {Algorithmic aspects of a general modular
           decomposition theory},
  AUTHOR = {Bui-Xuan, Binh-Minh and Habib, Michel
           and Limouzy, Vincent and de Montgolfier, Fabien},
  year = {2007},
  eprint = {hal-00111235v2},
  archiveprefix = {HAL},
  archive = {https://hal.archives-ouvertes.fr}
}
```

For all electronic resources that have a url but don't belong to any "repository" like the arXiv or HAL (for which the previous paragraph applies), the two useful fields `url` and `urldate` are available. Their aim should be self-explanatory: for instance, the entry [6] referring to a paper available on MathOverflow was typeset as

```
@unpublished{Ham10,
  title = {What is the minimal size of a partial order that
           is universal for all partial orders of size  $n$ ?},
  author = {Joel David Hamkins},
  date = {2010-05-25},
  howpublished = {MathOverflow},
  url = {https://mathoverflow.net/q/25874},
  urldate = {2024-01-26},
  year={2010},
}
```

In a reference with type `@article`, `@inproceedings` or `@incollection` (which serves to cite an article within a book, e.g. [1]), the field `doi` has priority over `url`. In other words, `url` is printed only if `doi` is not filled. For instance, both fields are filled in reference [11], while only the field `url` is filled in reference [7].

Finally, there is a trend in electronic publishing to endow papers with a unique ID rather than continuous page numbering to precisely locate papers within a journal. This is handled through the field `eid`, with the possible addition of the `pagetotal` field. The field `pages` should not be used for these papers. See entry `MoTa10` in the file `sample.bib` and [10].

4. En-dashes and capitals

We have already discussed that all nouns should be lower-case, like in the title, and upper-case should be used only for proper names. Accordingly, we insist that all adjectives coming from a proper name be spelt with a capital letter except from extremely common ones. Therefore we expect to find Riemannian, Euclidean, non-Archimedean, Gaussian but abelian instead of Abelian.

Another typographical remark which often leads to difficulties is the difference between a hyphen (typeset -) and an en-dash (typeset --) or em-dash (typeset ---). In particular, it is an en-dash and not a hyphen that needs to be used to separate proper names (as in Gauß–Bonnet, instead of *Gauß-Bonnet) and in intervals, so pp. 123–125 instead of *pp. 123-125. On the other hand, a proper name like Nash-Williams is correctly written with a hyphen.

4.1. T_EX hints

We gather here some hints which might be useful when preparing your source file.

- the package `amsmath`, which is automatically loaded, provides the command `\eqref{}` which has the advantage of automatically inserting parenthesis around the number generated by `\ref{}`. So, `\eqref{local.lemma}` is preferred to `(\ref{local.lemma})`.
- In general, parenthesis in italicized text look *odd (not to say: bad)*. Since statements of theorems, propositions, etc. are automatically italicized, you can use the command `\textup{}` to repair the problem, as in

Let V be a finite-dimensional \mathbb{C} -vector space of `\textup{({}even\textup{})}` real dimension n .

Let V be a finite-dimensional \mathbb{C} -vector space of (even) real dimension n .

This holds in particular for lists: if you have a list of conditions in a theorem and (wisely!) take full benefit of the `enumitem` package described in Section 2.1.2, you want to begin your list by

```
\begin{enumerate}[label=\alph*]
```

so that your conditions will look like

a) The first,

- b) the second,
- c) and the last.

which is bad! Indeed, parenthesis are again in italics. Rather, start with

```
\begin{enumerate}[label=\alph*\textup{}]
```

- L^AT_EX commands and mathematical symbols in titles should be endowed with a plain text replacement for the PDF reader, to be displayed correctly in the reader's index. We use the command `texorpdfstring`, which takes the usual command as its first argument, and a plain text substitution for the PDF reader. For instance, the title of this section was typeset as

```
\subsection{\texorpdfstring{\TeX\ }{\TeX }hints}
```

- As a last hint, let us stress once more that T_EX does an excellent job in placing spaces and organizing layout, so each time you use a spacing-command like `\;` or `\!` please double-check that this is a good idea. This applies in particular to figures, cf. Section 5.2. On the other hand, since it is allowed to go at the line when it considers it useful, it is good practice to use `~` before a digit, a single mathematical symbol, or a reference, in order to avoid having the symbol go on a line all alone: so, write
we let `~k` be the unique even prime number.

5. Final remarks

5.1. Avoid overwriting

Since many commands are defined in our class file, and since it is important that the result of compiling each article is uniform, we ask all authors to refrain from using `\let` and `\renewcommand` in the preamble. Likewise, every command which might modify the general layout, like `\setlength` or `\leftmargin` or the like should be avoided.

5.2. Figures

If you want to insert figures, you should resize them in a way that they don't creep into the margins (and this, after having checked that `geometry` is disabled and that you are not using a smaller font or larger margins,

otherwise they won't creep into *your* margins but will in ART's). If this is not possible, you should rotate them so that they appear in landscape mode. It is important to insert figures in a figure environment, by using `\begin{figure}` and `\end{figure}`. This allows you, on a one hand, to add a caption and to get the figure numbers, so that you can insert a `\label{fig:mynicefigure}` and refer to it. What is more important, it allows the figure to *float*, so to move around for best typographical results. It is not a good practice, in general, to force L^AT_EX to insert figures *precisely* where you want, so please refrain from adding the option `[H]` which forces L^AT_EX to do so: some fine-tuning of figures placement can be discussed at a later stage of production.

Appendix A. List of pre-loaded commands

Here we list all pre-loaded commands. Since it is an appendix, we also recall here how to create an appendix: you should first add a line `\appendix`, which instructs L^AT_EX to switch from Arabic numbering to alphabetic (plus other minor changes), and then you can keep on using the usual `\section`, `\subsection` pattern you are used to.

A.1. Theorem-like environments

All theorems share a single counter, which is relative to the section number (so that the first theorem of § 5 would be Theorem 5.1). The rationale of the naming scheme is to use the 4 first letters of the English label.

Theorem: `theo`, *aliases:* `thm`, `theorem`, *unnumbered version:* `theo*`, *alias:* `thm*`

Conjecture: `conj`, *alias:* `conjecture`, *unnumbered version:* `conj*`

Proposition: `prop`, *unnumbered version:* `prop*`

Lemma: `lemm`, *alias:* `lemma`, *unnumbered version:* `lemm*`

Question: `ques`, *unnumbered version:* `ques*`

Corollary: `coro`, *unnumbered version:* `coro*`

Definition: `defi`, *unnumbered version:* `defi*`

Notation: `nota`, *unnumbered version:* `nota*`

Notations: `notas`, *unnumbered version:* `notas*`

Remark: `rema`, *unnumbered version:* `rema*`

Remarks: `remas`, *unnumbered version:* `remas*`

Example: `exam`, *unnumbered version:* `exam*`

Examples: exams, *unnumbered version:* exams*

THEOREM A.1. — *Theorems, Propositions, Lemmas, Corollaries look like this: bold heading, italic text.*

Remark A.2. — All the others (Definitions, Remarks, Questions, Conjectures) look like this: same bold heading, but upright text.

Remark (Optional argument). — All these environments can have an optional argument. Be mindful that you need to protect any closing square bracket in the argument, as it will be otherwise interpreted as the end of the argument.

E.g. `\begin{theo}[see~{\cite[Thm. 9.5]{Ser98}}]`.

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