



## Title of the paper on differential equations

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Received XX XXXXXX 201X, appeared XX XXXXXX 20XX

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**Abstract.** Here comes the abstract of your paper. The abstract should not exceed 200 words and should not contain citations. Please try to minimize the usage of formulae and do not use your own macros here. In general, your abstract should be self-contained.

**Keywords:** differential equations, difference equations.

**2010 Mathematics Subject Classification:** 12A34, 67B89.

## 1 Introduction

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Please also take care of using diacritical marks (e.g. Poincaré, Arzelà, Erdős or Gâteaux). Do not use mathematical mode when entering a letter with diacritic in text mode.

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## 2 Examples

In this section, we show examples how theorems, definitions, lists and formulae should be formatted.

### 2.1 Sample formulae

To write systems of equations which should be numbered together, as well as multiline formulae, we suggest to use the `split` environment:

$$\begin{aligned} x' &= x(\alpha - \beta y), \\ y' &= -y(\gamma - \delta x). \end{aligned} \tag{2.1}$$

$$\begin{aligned} \dot{y}(t) &= ay(t) + bf(y(t - \gamma_0\tau)) \\ &> ay(t) - bf(y(t - \gamma_0\tau)) \\ &\quad + bf(y(t - \gamma_0\tau)) \\ &= ay(t). \end{aligned} \tag{2.2}$$

To write a multiline formula with all lines numbered we suggest to use the `{align}` environment. The `{eqnarray}` environment is not recommended.

$$\dot{y}(t) = ay(t) + bf(y(t)), \tag{2.3}$$

$$\dot{y}(t) = ay(t) - bf(y(t)), \tag{2.4}$$

$$y(0) = y_0. \tag{2.5}$$

Equation (2.6) is just an example of a piecewise defined function.

$$|x| = \begin{cases} x, & x \geq 0, \\ -x, & x < 0. \end{cases} \tag{2.6}$$

To refer to a theorem (definition, section, etc.) labelled as above, please use the `\ref` command. For referring to equations the `\eqref` command is recommended. Here we refer to equation (2.2) and Theorem 2.2. To cite an entry from the references, please use the `\cite` command as presented here by citing [3]. You can also cite a given part (e.g. a chapter, a theorem) from a reference by writing [4, Theorem 4.1]. If more than one reference is cited simultaneously, then they should be arranged in an increasing order as [1, 2, 5, 6, 7].

For equations which do not need numbering, the environments `{equation*}` and `{align*}` should be used.

$$\begin{aligned} \alpha x(t) + \beta y(t) &= \int_{t_0}^t f(x(s), y(s - T_\epsilon)) ds - \int_{t_0}^t g(x(s - \tau), y(s)) ds \\ &\quad + \int_{t_0}^t h(x(s - \tau), y(s - \tau)) ds. \end{aligned}$$

For such equations, of course, no labels should be defined and they cannot be referred to.

Please take care to use the appropriate size for brackets. This is possible by using the commands `\big(`, `\big)`, `\Big\{`, `\Big\}`, `\dots`, resp. the commands `\left[`, `\right]`, etc.

This is an example of the *incorrect* use of brackets:

$$\left(\frac{a}{b}\right)^2 \left[ \int f(x) dx + \int g(x) dx \right],$$

which should be written e.g. as

$$\left(\frac{a}{b}\right)^2 \left[ \int f(x) dx + \int g(x) dx \right].$$

Please do not put large formulae in-line with the text rather than displaying them. This is especially important for formulae whose vertical size exceeds normal text height as they create different line spacing.

For names of functions, resp. other roman (`\rm`) math words used in mathematical formulae, please use the corresponding  $\LaTeX$  command, e.g. `\cos`, `\log`, `\limsup`. If such a command does not exist, please use the `\operatorname` command (e.g. `\operatorname{diam}`).

Please also take care to use the adequate  $\LaTeX$  commands e.g. `\langle`, `\rangle`, `\mid`, `\parallel`, `\ldots`, `\cdots`, `\colon` etc. instead of `<`, `>`, `|`, `||`, `...`, `:`, as the incorrectly used symbols have different meanings, see Table 2.1.

Incorrect	Correct
<code>&lt; a, b &gt;</code>	<code>\langle a, b \rangle</code>
<code>a, b, c, ...</code>	<code>a, b, c, \ldots</code>
<code>X<sub>1</sub> × X<sub>2</sub> × ... × X<sub>n</sub></code>	<code>X<sub>1</sub> × X<sub>2</sub> × \cdots × X<sub>n</sub></code>

Table 2.1: Usage of adequate  $\LaTeX$  commands.

Please include figures as shown in the example below for Figure 2.1.

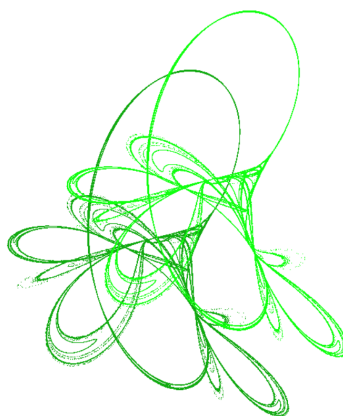


Figure 2.1: Sample figure.

## 2.2 A sample theorem

For writing theorems (and lemmas, corollaries, remarks, etc.), please use the adequate environment `\theorem`, `\lemma`, etc. These are all numbered in the same sequence. If needed, further environments may be specified by the `\newtheorem` command.

**Definition 2.1.** Here you can define something.

**Theorem 2.2.** Under some conditions on  $f$ , the initial value problem (2.3)–(2.5) has a unique solution.

*Proof.* Here is the proof of the theorem. □

**Corollary 2.3.** *This is a corollary of Theorem 2.2.*

*Proof.* Here is the proof of the corollary. □

**Remark 2.4.** We remark that Definition 2.1 is correct.

## 2.3 Sample lists

To create a list, please use the environments `{itemize}` and `{enumerate}`. The first one creates a list without numbering, the second one creates a list with the specified numbering.

Here is an example for using the `{itemize}` environment.

- First item.
- Second item.
- Third item.

Here is an example for using the `{enumerate}` environment. The numbering style can be changed from the default (1., 2., ...) by specifying the requested numbering style.

- (i) First item.
- (ii) Second item.

## Acknowledgements

We would like to thank you for following the instructions above very closely in advance. It will definitely speed up the process of your paper's publication.

## References

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