



Title of the paper on differential equations

First Author¹, Second Author^{✉ 1, 2}, Third Author¹, Fourth Author²
and Fifth Author^{2, 3}

¹First University, 1 University Street, City Name, H-1234, Country Name

²Second University, 2 University Square, City Name H-9876, Country Name

³Institute of Mathematics, Third University, 3 University Road, City Name, H-9888, Country Name

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1 Introduction

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[✉]Corresponding author. Email: secondauthor@firstuniversity.com

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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.

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

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

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

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

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

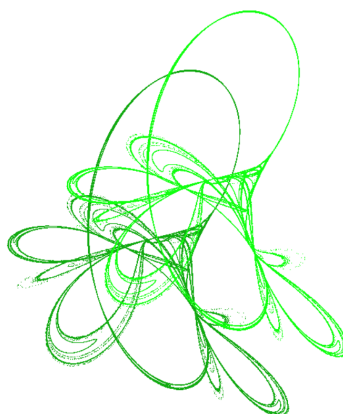


Figure 2.1: Sample figure.

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 above instructions. This will definitely speed up the publication process of your paper.

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