

SWIM 2019 L^AT_EX template

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Introduction

This is the extended abstract template for the 2019 edition of SWIM (Summer Workshop on Interval Methods). SWIM aims at gathering researchers working on/with interval methods and their applications. The goal is to review the state-of-the-art in this field. Contributions can be for example in the domain of verification and Validation ; robust and Nonlinear Control Systems ; state Estimation ; interval Observer Design ; parameter Identification ; fault Detection and Diagnosis, Fault Tolerant Systems ; stability, Reachability, Observability ; reliable Software Design ; robotics ; mathematics ; verified Solution of Algebraic and Dynamic System Models ; verified Numerics and Scientific Computing ; linear Algebra and any other applications of interval methods, verified numerics, and other related set-membership techniques (*e.g.*: affine arithmetics, polytopes, *etc*).

If you want to participate to SWIM 2019, please visit the official website [1].

Recommendation

It is expected that authors use this template as it is for their contribution. Please do not change the document class attributes as it should be:

11pt, twocolumn

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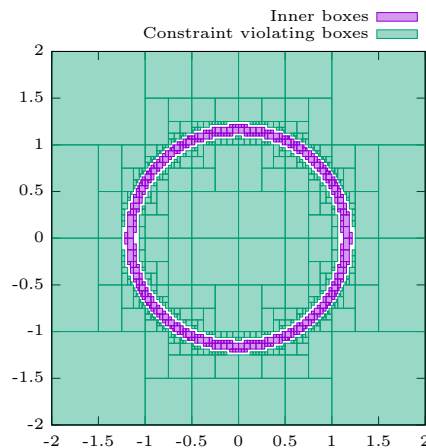


Figure 1: Example of a vector graphic figure.

It is expected a 2 page abstract up to 3 pages. First of all, sections should not be numbered using *

`\section*{Section example}`

Figures

You can put any figure you want but to increase quality, you may consider adding vector graphics. You can put a figure on both columns if you want using for example `figure*` (see Figure 2). Small figures can be added into a column (see Figure 1).

Notations

For the purpose of homogeneization, we would like you to follow the “bracket” notation if you introduce intervals: An interval is denoted $[x] = [\underline{x}, \overline{x}]$ and the set of intervals is $\mathbb{IR} = \{[x, \overline{x}] \mid \underline{x} \leq \overline{x}\}$. For example, with this notation, an iteration of the Newton interval

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Figure 2: Example of a two column figure.

method writes:

$$[x]_{k+1} = \left(x_k - \frac{[f](x_k)}{[f]([x]_k)} \cup [x]_k \right) \quad (1)$$

This are the only notations we would like you to follow.

Acknowledgement

If needed, acknowledgement should be put here right before the references.

References

- [1] O. Mullier, A. Chapoutot, and A. Alexandre dit Sandretto. Swim 2019 website. <https://swim2019.ensta-paristech.fr/>, 2019.