

2019-Updated L^AT_EX document class for SAE Technical Papers

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Abstract

This L^AT_EX class provides correct formatting according to the requirements for the publication of an SAE Technical Paper. It is supposed to be useful for authors publishing simulation models and similar containing lots of formulas. The style contains many features automating the formatting and thus, making it easier for the author to concentrate on contents.

Introduction

Important note: the author provides this updated template based on the original work of Axel Franke (Lund Institute of Technology, Sweden). The author is NOT affiliated with SAE International and does not guarantee the accuracy of this template or the suggestions written therein. This template is only a tentative to simplify the task of those who wish to publish with SAE International and make use of L^AT_EX typesetting software.

This is a Level 1 heading, created with the command `\section{Introduction}`. As can be seen, the correct format (bold face and capitalized) is done by the style – the author does not need to care about that.

Here is a sample figure, namely Fig. 1, followed by a sample table, namely, Table 1. A simpler table without line returns and with a different number of columns to demonstrate the logic behind the cell width calculation is shown in Table 2. Finally, a sample multigure is shown, for whom wants to use subfigures, in Fig. 2 and its subfigures Figs. 2(a) to 2(c).

Table 1: Example for a table.

a dimension	0.009 m
another	0.24 m
a very long text describing another dimension to force a line return inside the table cell	0.99 m
something that requires a footnote ^a	something
Writing an angle in degrees	0°

^aAn explanatory footnote.

Table 2: Some interesting results from our research.

	F _x	F _y	T	M
A)	0.453	1.00	-	-
B)	1.99	0.777	1.50	-0.999

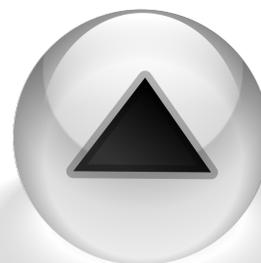


Figure 1: Figure taken from wikimedia.org and openclipart.org.



(a) Some info.



(b) Caption.



(c) More info.

Figure 2: An overall caption for these figures.

Some citations to interesting articles such as [1] or [2] can also be added and then presented at the end of the document. These usually go after the conclusion or recommendation sections, respectively Sections 4 and 5.

Title and author information

Title, author information, paper number and copyright are created in the preface using the commands

```
\PaperTitle{Proposal for a \LaTeX\ document  
class for SAE Technical Papers}  
\AddAuthor{Axel Franke}{Lund Institute of  
Technology, Sweden}  
\PaperNumber{No number}  
\SAECopyright{1999}
```

Authors from the same affiliation should be added within one `\AddAuthor` command. The general syntax is `\AddAuthor{Author1, Author2, ...}{Affiliation}`. The command may be used several times.

A subheading

This is a subheading which has been created as usual with the command

```
\subsection{A subsection}
```

Also the following sub-subheading is formatted automatically by the style.

Subsubheading: general options of the style

The `sae` \LaTeX style supports optional arguments which determine the document font (Helvetica or Times) and the paper size (letterpaper or A4). Default is Helvetica and A4. The letter format of this publication has been obtained by the opening command

```
\documentclass[letterpaper]{sae}
```

If Times is desired as document font, this can be achieved by using

```
\documentclass[letterpaper,times]{sae}
```

or

```
\documentclass[times]{sae}
```

The latter uses A4 as paper size. This concept has the advantage that document font and the paper size can be changed easily at any time of the publication process.

Conclusion

Here can some interesting conclusion be presented.

Recommendation

Followed by a short recommendation based on the work done.

References

1. L. Gagnon, G. Quaranta, and M. Schwaiger, "Open Source 3D CFD of a Quadrotor Cyclogyro Aircraft," in *11th OpenFOAM Workshop Book* (J. M. Nóbrega and H. Jasak, eds.), Springer International Publishing AG, 2018.
2. L. Gagnon, M. Morandini, G. Quaranta, V. Muscarello, G. Bindolino, and P. Masarati, "Cyclogyro Thrust Vectoring for Anti-Torque and Control of Helicopters," in *AHS 70th Annual Forum*, (Montréal, Canada), May 20-22 2014.

Contact Information

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Some acknowledgments are always appreciated and sometimes compulsory!

Definitions, Acronyms, Abbreviations

AMI	Arbitrary Mesh Interface
CFD	Computational Fluid Dynamics
RANS	Reynolds-averaged Navier–Stokes

APPENDIX A

This section can present figures that occupy too much space to include in the main text. The authors can choose what should go in an appendix.

APPENDIX B

Sometimes a second appendix is necessary, for example, to give a link to some extra video material.