A LaTeX CLASS FILE FOR ESA PROCEEDINGS

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ABSTRACT

Talks presented at an ESA sponsored conference are published by means of author-produced camera-ready copy. The format is predetermined. This LaTeX class allows authors to produce this format with a straight-forward LaTeX file. The only non-standard features are the `\keywords` command and the method for entering author and affiliation names.

Authors must deliver their full papers by 10 April 2017 as electronic pdf file via email; details are given in section 11.2

Key words: LaTeX; ESA; macros.

1. INTRODUCTION

This is a LaTeX 2_ε class based on the standard `article` class for generating camera-ready copy of conference proceedings for publication by the European Space Agency.

It conforms to the specifications for ESA conference proceedings:

- standard A4 paper;
- two columns, they have 1 cm between them;
- 10 pt font, Times Roman;
- all titles in upper case

Compatibility with standard LaTeX is maintained as much as possible in order to simplify the transfer of text from or to another format. The only additional features are the `\keyword` command and the entry of authors and affiliations.

It replaces the LaTeX 2.09 style file that has been previously provided by the ESA.

For an excellent manual on using LaTeX, see Kopka & Daly, *A Guide to LaTeX*, 3rd ed., 1999, Addison Wesley Longman.

2. INVOKING THE CLASS

The class file is invoked with the `\documentclass` command, as
`\documentclass[a4paper,twocolumn]{spaceDebrisC}`
with option `a4paper`. The text will be centered on the specified paper type. The `twocolumn` option is to be given as the publication is to be in two columns per page.

2.1. Other Packages

There are other (nearly) standard packages that should be included with the `\usepackage` command:

- `times` to use TimesRoman instead of Computer Modern (TeX) fonts ,
- `graphicx` for importing figures (see Section 9.1

The author may have his or her own extra packages, such as `amsmath` for advanced mathematical formatting.

3. NON-STANDARD FEATURES

A list of key words is to be printed below the abstract. They are entered *anywhere before the abstract environment* with the `\keywords` command.

```
\keywords{space; plasmas; electrons}
\begin{abstract}
. . .
\end{abstract}
```

Each author name should be entered with an `\author` command. Give the affiliation with the `\affil` command after all authors of the same affiliation. They will then be listed with a common footnote number.

```
\author{First C. Author}
\author{Second C. Author}
\affil{Author's Home Company, CA USA,
```

```
Email: \{FAuthor, SAuthor\}$@$companyX.xy}
\author{Last C. Author}
\affil{University of Somewhere,
 Email: LAuthor$@$university.so }
```

produces

First C. Author[1], Second C. Author[1], Last C. Author[2]
[1]Author's Home Company, CA USA,
Email: {FAuthor, SAuthor}@companyX.xy
[2]University of Somewhere,
Email: LAuthor@university.so

4. GENERAL SPECIFICATIONS

The paper must be prepared in the defined layout and **should not exceed 15 pages**.

5. PAGE LAYOUT

Page layout is provided by the spaceDebrisC.cls class file as well as fonts and fontsize.

6. STRUCTURE OF THE DOCUMENT

Except for the above features, the `spaceDebrisC` class is identical to the standard `article` class, as far as input is concerned. The document should be organized as usual.

```
\documentclass[a4paper,twocolumn]{spaceDebrisC}
% Any extra packages
\usepackage{times,natbib,graphicx,...}
% Title and authors
\title{Title text}
\author{First Author}...
\affil{First affiliation}
...
% Start of body
\begin{document}
\maketitle
% Keywords and abstract
\keywords{keyword1; keyword2; ... }
\begin{abstract}
Text of abstract
\end{abstract}
% Main text
\section{Heading}
Text
\subsection{Sub-heading}
Text
\section*{Acknowledgments}
Acknowledgment text
% Bibliography (Section 8)
\bibliographystyle{aa}
\bibliography{database name}
% Termination
\end{document}
```

Note: leave header and footer empty.

7. ABBREVIATIONS AND ACRONYMS

Define abbreviations and acronyms the first time they are used in the text, even after they have been defined in the abstract. Avoid using abbreviations in the title unless absolutely necessary.

8. BIBLIOGRAPHIC REFERENCES

Citations to bibliographic references are to be of the alphanum number style. The citations are parenthetical [3].

The list of references is placed at the end of the article in alphabetical order, as

```
\begin{thebibliography}{}
\bibitem{author73}
Author T., (1973). Astrophysical Quantities,
Athlone Press

\bibitem{nobody97}
Nobody B., Somebody G., Who D., et al., (1997).
 {\it The book}, Publisher, ed. 2

\bibitem{smith96}
Smith A., Jones B., (1996). The new discovery,
 {\it Other Journal}, {\bf 223}(1), 1029--1101
\end{thebibliography}
```

Note the empty braces after
`\begin{thebibliography}`

9. FIGURES AND TABLES

Figures and tables are inserted with the normal LaTeX environments `figure` and `table`. They are numbered automatically and one refers to the numbers with the `\label` and `\ref` system. Please note for non-vector formats: image resolution should be at least 600 dpi for monochrome and 300 dpi for colour images.

9.1. Figures

The `figure` environment is used to enter a single column figure such as Figure 1, while `figure*` is for double column figures (Figure 2).

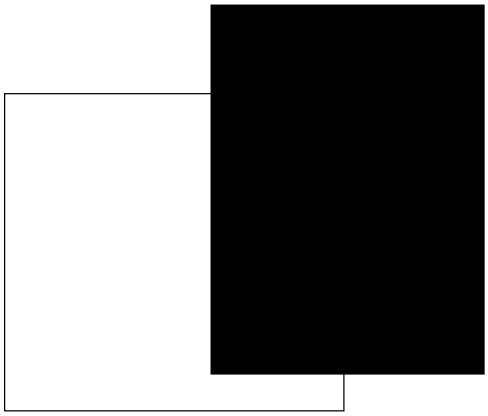

Figure 1. Sample figure showing how an pdf graphic may be included. This example is for a single column figure.

```
\begin{figure}
\centering
\includegraphics[width=0.8\linewidth]
{sample}
\caption{Sample figure showing how a
 eps(latex) pdf/png(pdflatex) graphic may
 be included.
This example is for a single column
figure.\label{fig:single}}
\end{figure}
```

One can then refer to this figure with `Figure~\ref{fig:single}`, producing "Figure 1".

The `\includegraphics` command is made available with the `graphicx` package and allows the importation of graphic files. For PostScript output (with the `dvips` program) these graphics must adhere to the *encapsulated* PostScript standard.

The same syntax can also be used with pdfTEX, a variant on the TEX program producing PDF output directly. In this case, the figures must be in PDF, PNG, or JPEG format. It is not necessary to include the extension in the file name (`file=sample` suffices), something that makes the LATEX text more general for both normal TEX and pdfTEX. (It may however be necessary to add the option `[pdftex]` when loading the graphics packages.)

9.2. Tables

Tables are placed and numbered and referred to with the `table` and `table*` environments. The contents of the table are normally entered with the `tabular` or `tabbing` environments. The `\caption` now comes at the top of the table, before the table contents.

Table 1. A sample table illustrating usage of the LATEX table environment.

First column	Col. 2	Col. 3	V mag
row 1	11.0	25.0	12
row 2	11.0	25.0	12
row 3	11.0	25.0	12
row 4	11.0	25.0	12
row 5	11.0	25.0	12

10. EQUATIONS

Formulae which appear in the running text should be enclosed in `$` signs. For example, to produce the equation $a^2 + b^2 = c^2$ within a paragraph type `$a^2 + b^2 = c^2$`. Displayed formulae are produced using the `\begin{equation}` and `\end{equation}` commands (see Equation 1). This produces equations which are automatically numbered sequentially throughout your paper. Equations which should appear together can be formatted using `\begin{eqnarray}` and `\end{eqnarray}` as for Equations 2 and 3:

$$\Delta\hat{a}_i = \sum_j \frac{\partial f_i}{\partial a_j}\Delta a_j \tag{1}$$

$$\begin{aligned} \alpha &= \alpha_0 + (T - T_0)\,\mu_{\alpha*0}\sec\delta_0 && (2)\\ \delta &= \delta_0 + (T - T_0)\,\mu_{\delta 0} && (3) \end{aligned}$$

When in math mode (i.e. within the `equation` or `eqnarray` environment) all letters appear in italics. However, the preferred notation is for subscripts, superscripts[1] and text within the equation to be typeset as roman. To achieve this use the `{\mbox{..}}` command. Thus, `$T_{\mbox{eff}}=5.8\times10^{3}$~K` produces $T_{\rm eff} = 5.8 \times 10^3$ K. Note that units should be tied to the numerical value using `~` and should always be in roman font (the default outside of math mode).

11. FINAL MANUSCRIPTS

11.1. Preparation of Final Manuscripts

There is an upper **limit of 15 pages** for papers.

You should use the standard LATEX or $pdflatex$ command, in conjunction with the style file provided, spaceDebrisC.cls, to produce the final output. If using dvips

[1] Except when the superscript or subscript are variables.

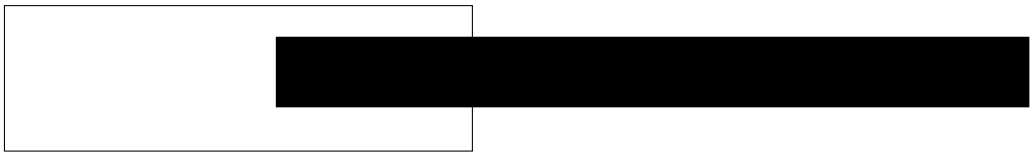

Figure 2. Sample figure showing how an encapsulated PostScript graphic may be included. This example is for a double column figure, which does cause more placement problems than single column ones.

places the final PostScript file lower on the page than appears to be reasonable, try using the qualifier '-t a4' with dvips.

11.2. Submission of Final Manuscripts

Deadline for submission is
10 April 2017

ACKNOWLEDGMENTS

The section containing acknowledgments should use the `\section*` form, as shown, to prevent it from being numbered.

REFERENCES

1. Author T., (1973). Astrophysical Quantities, Athlone Press
2. Nobody B., Somebody G., Who D., et al., (1997). *The book*, Publisher, ed. 2
3. Smith A., Jones B., (1996). The new discovery, *Other Journal*, **223**(1), 1029–1101