

# Model Article for the preprint style elsart

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## Abstract

This article discusses several features of preparing preprints with the `elsart` document style.

*Key words:* preprint style, `elsart`, L<sup>A</sup>T<sub>E</sub>X style, model article, guide lines

*PACS:* 01.30.-y

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## 1 Introduction

This article discusses several features of preparing preprints with the `elsart` document style. For more general information about L<sup>A</sup>T<sub>E</sub>X, see the L<sup>A</sup>T<sub>E</sub>X manual written by Lamport [1] or the booklet *Preparing Articles with L<sup>A</sup>T<sub>E</sub>X*, which is part of Elsevier Science's L<sup>A</sup>T<sub>E</sub>X package (see below).

All macro packages recommended in this document can be obtained from one of the servers of the Comprehensive TeX Archive Network (CTAN). CTAN is a mirrored network of the FTP servers `ftp.tex.ac.uk`, `ftp.dante.de` and `ctan.tug.org`, which are widely mirrored (see `ftp://ctan.tug.org/tex-archive/README.mirrors`) and hold up-to-date copies of all the public-domain versions of T<sub>E</sub>X, L<sup>A</sup>T<sub>E</sub>X, Metafont and ancillary programs.

Elsevier Science has prepared a L<sup>A</sup>T<sub>E</sub>X package for authors, which contains the following files:

- `ascii.tab` (ASCII table),
- `elsart.cls` (use this file if you are using L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub>, the current version of L<sup>A</sup>T<sub>E</sub>X),

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*URL:* `www.elsevier.com/locate/latex` (S.A.M. Pepping).

- `elsart.sty` and `elsart12.sty` (use these two files if you are using L<sup>A</sup>T<sub>E</sub>X 2.09, the now obsolete version of L<sup>A</sup>T<sub>E</sub>X),
- `instraut.dvi` and/or `instraut.ps` (instruction booklet),
- `readme`.

The package is freely available from Elsevier Science's Web servers

- <http://www.elsevier.nl/locate/latex>,
- <http://www.elsevier.com/locate/latex>,
- <http://www.elsevier.co.jp/locate/latex>,

and from CTAN in the directory

`/tex-archive/macros/latex/contrib/supported/elsevier`.

## 2 Options

There is an option to obtain double line spacing, as is sometimes required for copies submitted for review. It is called `doublespacing` or `reviewcopy`.

## 3 Frontmatter

The `elsart` document class has a separate `frontmatter` environment for the title, authors, addresses, abstract and keywords.

- `\title`: As in standard L<sup>A</sup>T<sub>E</sub>X, e.g. `\title{Model}`.
- `\author`: Different from standard L<sup>A</sup>T<sub>E</sub>X, the `\author` command contains only one author and no address. Multiple authors go into multiple `\author` commands, separated from each other by commas. The address goes into a separate `\address` command. Example: `\author{D.E. Knuth}`.
- `\address`: Here goes the address, e.g. `\address{CERN, Geneva}`.
- `\thanks` and `\thanksref`: These provide footnotes to the title, authors and addresses. The `\thanksref` command takes a label: `\thanksref{label}` to relate it to the `\thanks` command with the same label: `\thanks[label]`. There can be several references to a single `\thanks` command. Example: `\title{Model\thanksref{titlefn}}` and `\thanks[titlefn]{Supported by grants.}`
- `\corauth` and `\corauthref`: These provide footnotes to mark the corresponding author and the correspondence address. They are used in the same manner as `\thanks` and `\thanksref`. Example: `\author{A. Name\corauthref{cor}}` and `\corauth[cor]{Corresponding author. Address: ... .}`

- `\ead`: This command should be used for the email address or the URL of the author. It refers to the ‘current author’, i.e., the author last mentioned before the command. When it holds a URL, this should be indicated by setting the optional argument to ‘url’. Example: `\ead{s.pepping@elsevier.nl}`, `\ead[url]{www.elsevier.nl/locate/latex}`.

It is not necessary to give a `\maketitle` command. The title, authors and addresses are printed as soon as  $\text{\TeX}$  sees them.

The authors and addresses can be combined in one of two ways:

- The simplest way lists the authors of one address, followed by the address, and so on for all addresses.
- The other way first lists all authors, and then all addresses. The authors and addresses are related to each other by labels: `\author[label1]{Name1}` corresponds to `\address[label1]{Address1}`.  
`\author[South]{T.R. Marsh}`,  
`\author[Oxford]{S.R. Duck}`  
`\address[South]{University of Southampton, UK}`  
`\address[Oxford]{University of Oxford, UK}`

See the examples in figs. 1, 2, 3, 4.

If you put the frontmatter in an included file, that file should contain the whole frontmatter, including its `begin` and `end` commands. Otherwise, the labels of the frontmatter will remain undefined.

## 4 Abstract

The abstract should be self-contained. Therefore, do not refer to the list of references. Instead, quote the reference in full, as follows: Wettig & Brown (1996, NewA, 1, 17).

## 5 Keywords

In electronic publications a proper classification is more important than ever. Elsevier Science’s physics journals use several keyword schemes:

**Keywords:** Uncontrolled keywords.

**PACS:** The PACS scheme, developed and maintained by the AIP, covers the whole field of Physics. See <http://www.aip.org/pacs/pacs.html> or <http://www.elsevier.nl/locate/pacs>.

```

\documentclass{elsart}
\usepackage{graphicx,amssymb}
\journal{New Astronomy}
\begin{document}
\begin{frontmatter}

\title{Stroboscopic Doppler tomography of FO Aqr}
\author[South]{T.R. Marsh\corauthref{cor}},
\corauth[cor]{Corresponding author.}
\ead{trm@astro.soton.ac.uk}

\author[Oxford]{S.R. Duck\thanksref{now}}
\thanks[now]{Present address: Systems Engineering and Assessment Ltd.,
Beckington Castle, PO Box 800, Bath BA3 6TB, UK.}
\ead{srd@sea.co.uk}

\address[South]{University of Southampton, Department of Physics,
Highfield, Southampton SO17 1BJ, UK}
\address[Oxford]{University of Oxford, Department of Physics, Nuclear
Physics Laboratory, Keble Road, Oxford, OX1 3RH, UK}

\begin{abstract}
FO Aqr is a close binary star in
which a magnetic white dwarf accretes from a cool companion. Light
curves and spectra show variations on the orbital frequency, the
white dwarf's spin frequency and combinations of the two.
\end{abstract}
\begin{keyword}
Accretion, accretion disks \sep Line: profiles \sep
Binaries: close \sep Novae, cataclysmic variables
\sep PACS 97.10.Gz \sep 97.30.Qt \sep 97.80.Gm
\end{keyword}
\end{frontmatter}

\section{Introduction}
FO Aqr is a member of the DQ~Her class of stars which
are close binary stars in which a magnetic white dwarf accretes from
a late-type main-sequence secondary star. These stars have most
recently been reviewed in Ref. \cite{Patterson94}.

```

Fig. 1. Article opening with explicit links (input)

# Stroboscopic Doppler tomography of FO Aqr

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Highfield, Southampton SO17 1BJ, UK*

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## Abstract

FO Aqr is a close binary star in which a magnetic white dwarf accretes from a cool companion. Light curves and spectra show variations on the orbital frequency, the white dwarf's spin frequency and combinations of the two.

*Key words:* Accretion, accretion disks, Line: profiles, Binaries: close, Novae, cataclysmic variables

*PACS:* 97.10.Gz, 97.30.Qt, 97.80.Gm

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## Introduction

FO Aqr is a member of the DQ Her class of stars which are close binary stars in which a magnetic white dwarf accretes from a late-type main-sequence secondary star. These stars have most recently been reviewed in Ref. [1].

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*Preprint submitted to New Astronomy*

*21 August 1997*

Fig. 2. Article opening with explicit links (output)

```

\documentclass{elsart}

\begin{document}
\begin{frontmatter}
\title{Integrability in
        random matrix models\thanksref{talk}}
\thanks[talk]{Expanded version of a talk
        presented at the Singapore Meeting on
        Particle Physics (Singapore, August 1990).}

\author{L. Alvarez-Gaum\'{e}\corauthref{cor}}
\address{Theory Division, CERN,
        CH-1211 Geneva 23, Switzerland}
\ead{lag@cern.ch}

\author{C. Gomez\corauthref{cor}\thanksref{SNSF}}
\address{D\'{e}partment de Physique Th\'{e}orique,
        Universit\'{e} de Gen\`{e}ve,
        CH-1211 Geneva 4, Switzerland}
\ead{cg@ug.ch}

\author{J. Lacki}
\address{School of Natural Sciences,
        Institute for Advanced Study,
        Princeton, NJ 08540, USA}
\ead[url]{www.ias.edu/~jl}
\thanks[SNSF]{Supported by the
        Swiss National Science Foundation}

\begin{abstract}
We prove the equivalence between the recent matrix
model formulation of 2D gravity and lattice
integrable models. For even potentials this
system is the Volterra hierarchy.
\end{abstract}
\end{frontmatter}

\section{Introduction}
Some aspects of the recently discovered
non-perturbative solutions to non-critical strings
\cite{Patterson94} can be better understood and
clarified directly in terms of the integrability
properties of the random matrix model.
...

```

Fig. 3. Article opening with implicit links (input)

# Integrability in random matrix models<sup>\*</sup>

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*Département de Physique Théorique, Université de Genève, CH-1211 Geneva 4,  
Switzerland*

J. Lacki

*School of Natural Sciences, Institute for Advanced Study, Princeton, NJ 08540,  
USA*

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## Abstract

We prove the equivalence between the recent matrix model formulation of 2D gravity and lattice integrable models. For even potentials this system is the Volterra hierarchy.

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## 1. Introduction

Some aspects of the recently discovered non-perturbative solutions to non-critical strings [1] can be better understood and clarified directly in terms of the integrability properties of the random matrix model.

...

Fig. 4. Article opening with implicit links (output)

**MSC:** The MSC scheme, developed and maintained by the AMS, covers the whole field of Mathematics. See <http://www.ams.org/msc> or <http://www.elsevier.nl/locate/msc>.

Keywords are entered below the abstract in the following way:

```
\begin{keyword}
Keyword \sep Keyword
\PACS PACS code \sep PACS code
\MSC MSC code \sep MSC code
\end{keyword}
```

## 6 Cross-references

In electronic publications articles may be internally hyperlinked. Hyperlinks are generated from proper cross-references in the article.

For example, the words Fig. 1 will never be more than simple text, whereas the proper cross-reference `\ref{mapfigure}` may be turned into a hyperlink to the figure itself.

In the same way, the words Ref. [1] will fail to turn into a hyperlink; the proper cross-reference is `\cite{Gea97}`.

Cross-referencing is possible in  $\text{\LaTeX}$  for sections, subsections, formulae, figures, tables, and literature references.

## 7 PostScript figures

$\text{\LaTeX}$  and PostScript have had a long and successful relationship. In the current version of  $\text{\LaTeX}$ ,  $\text{\LaTeX} 2_{\epsilon}$ , there are three packages for including PostScript figures:

- **graphics.** This simple package provides the command `\includegraphics* [<llx, lly> [<urx, ury>]{file}`. The `*` is optional; it enables the PostScript feature of clipping. In its simplest form, `\includegraphics{file}`, it includes the figure in the PostScript file `file` without resizing.
- **graphicx.** This package provides the command `\includegraphics* [key--value list]{file}`. The `*` is optional; it enables the PostScript feature of clipping. Often used keys are:

```

\begin{figure}
\begin{center}
\includegraphics*[width=5cm]{name.eps}
\end{center}
\caption{An example of a figure.}
\label{fig:exmp}
\end{figure}

```

Fig. 5. An example of a figure.

- `scale=.40` to scale the size of the figure with 40%,
- `width=25pc`, `height=15pc` to set the width or height of the figure,
- `angle=90` to rotate the figure over 90°.
- `epsfig`. This package is really the `graphicx` package, but it allows one to include PostScript figures using the familiar commands from the earlier packages `epsfig` and `psfig`.

For detailed information, see the documentation of the `graphics` packages, in particular the file `grfguide.tex`.

## 8 Mathematical symbols

Many physics authors require more mathematical symbols than the few that are provided in standard L<sup>A</sup>T<sub>E</sub>X. A useful package for additional symbols is the `amssymb` package, developed by the American Mathematical Society. This package includes such oft used symbols as `\lesssim` for  $\lesssim$ , `\gtrsim` for  $\gtrsim$  or `\hbar` for  $\hbar$ . Note that your T<sub>E</sub>X system should have the `msam` and `msbm` fonts installed. If you need only a few symbols, such as `\Box` for  $\square$ , you might try the package `latexsym`.

In the `elsart` document class vectors are preferably coded as `\vec{a}` instead of `\bf{a}` or `\pol{a}`.

## 9 The Bibliography

In L<sup>A</sup>T<sub>E</sub>X literature references are listed in the `thebibliography` environment. Each reference is a `\bibitem`; each `\bibitem` is identified by a label, by which it can be cited in the text: `\bibitem{ESG96}` is cited as `\cite{ESG96}`.

Version 2.16 of `elsart` introduces the `subbibitems` environment. The references in a `subbibitems` environment have the same major reference number, and are counted by letters a, b, etc. The `subbibitems` environment has a label

of its own: `\begin{subbibitems}{label}`. It can therefore be referred to as `\cite{label}`, which produces a citation like [7a–c]. A short citation like [7] can be produced by adding `:s` to the label: `\cite{label:s}`. Example: See Refs. [6a–b], or in short form, see Refs. [6].

Version 2.16 of `elsart` also introduces the possibility to insert notes into the bibliography, by using the `\note` command. In a `subbibitems` environment it must be the last item. Example: See Refs. [5,7].

## 10 Template article

There is a template article `templat-num.tex`, which you can use as a skeleton for your own article.

## References

- [1] Leslie Lamport: *L<sup>A</sup>T<sub>E</sub>X, A document preparation system*, 2nd edition, Addison-Wesley (Reading, Massachusetts, 1994).
- [2] Wettig, T., & Brown, G.E., The evolution of relativistic binary pulsars, 1996, *NewA*, 1, 17-34.
- [3] Elson, R.A.W., Santiago, B.X., & Gilmore, G.F., Halo stars, starbursts, and distant globular clusters: A survey of unresolved objects in the Hubble Deep Field, 1996, *NewA*, 1, 1-16.
- [4] Governato, F., Moore, B., Cen, R., Stadel, J., Lake, G., & Quinn, T., The Local Group as a test of cosmological models, 1997, *NewA* 2, 91-106.
- [5] We consider an exactly solvable two-band model of electrons moving in one dimension and interacting with a  $\delta$ -function spin-exchange potential.
- [6a] N. Nagaosa and P. A. Lee, *Phys. Rev. Lett.* **79**, 3755 (1997).
- [6b] C. Pépin and P. A. Lee, *Phys. Rev. Lett.* **81**, 2779 (1998).
- [7] K. Gorny, O. M. Vyasilev, J. A. Marindale, V. A. Nandor, C. H. Pennington, P. C. Hammel, W. L. Hulst, J. L. Smith, P. L. Kuhns, A. P. Reyes and W. G. Moulton, *Phys. Rev. Lett.* **82**, 177 (1999).

These references demonstrate that for some high- $T_c$  compounds the gap does not seem to depend on the magnetic field.