Typesetting your book using wow3

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Abstract

Please place your abstract here

1. Introduction

At the heart of LaTeX 2$_\varepsilon$ is the 'document class'. The class you will be using is called wow3.cls. This class file is designed for 100 per cent reproduction, i.e. the size of the pages is the same as the size of the page in the printed work. Fonts and spacing may look either too small or too rough at this stage, but this will be resolved when the high-resolution printout is prepared.

To use the wow3 class, you should put `wow3.cls` in the same directory as `latex.tex`, or the directory where your input files are normally kept.

The `wow3.cls` file has been constructed so that it can relatively easily be substituted for one of the standard LaTeX classes: `article`, `book`, etc. If you have been using the standard classes, the only problems you should encounter using the wow3 class will be those of aberrant page breaks caused by the alterations in the page/type dimensions that swapping class files inevitably produces.

To invoke the wow3 class, put the following line at the top of your source file, before `\begin{document}`

```
\documentclass{wow3}
```

2. Before copy-editing

The copy-editing of your text will undoubtedly affect its final appearance. You should try to avoid, therefore, spending too much time on the appearance of your text until the copy-editor's work is complete. The use of `\pagebreak` and `\newpage` can be particularly problematic when inserting changes.

3. The copy-editing stage

When you have completed your text, your editor will require a printout for copy-editing and a complete set of electronic files of the book. The copy-editor's job is to read through the typescript and (1) check that it is complete and that its general structure is satisfactory; (2) look for any errors in grammar or spelling; (3) make it consistent with IMA house style; and (4) check that it is internally consistent.

4. After copy-editing

When the copy-editor's work is finished, the typescript and electronic files will be sent to a TeX typesetter to insert the corrections. There will inevitably be some queries to

be sorted out, and the answers to these can usually be incorporated on the proof you will receive after the typesetter has made the corrections. If there are many queries or they involve substantial changes, you will be asked to answer them immediately after copy-editing.

It is important to remember that after the typescript goes to the typesetter, you will be able to make only minor alterations to correct errors.

5. Section headings

You will want to divide your document up, whether you are writing a whole book or just a part. The wow3 style provides the following commands which produce headings in the correct typography, and automatically number the various segments of text.

- section
- subsection
- subsubsection

The various headings are used like this:

```
\section[Optional short heading]{Full heading}
\section[Optional short heading]{Full heading}
\subsection[Optional short heading]{Full heading}
\subsubsection[Optional short heading]{Full heading}
```

with the optional short heading appearing in the contents list and in the running headlines. Note that all the numbering is done automatically. You need only to put in the words of the heading.

Unnumbered headings can be produced using the `*` option, but note that they will not appear in the contents list.

To construct an appendix, simply insert the command `\appendix`, then continue using sectioning commands in the normal way. The numbering of headings, figures, tables, etc. will thereafter include a letter in place of the section number.

6. Example of text

The following is a small sample of text showing the use of citations, tables, figures, corollaries and the bibliography.

The use of integral equations to solve 'exterior' problems in linear acoustics, i.e. to solve the Helmholtz equation $(\nabla^2 + k^2)\phi = 0$ outside a surface S given that ϕ satisfies certain boundary conditions on S, is very common. A good description is provided by **?**. Integral equations have also been used to solve the two-dimensional Helmholtz equation that arises in water-wave problems where there is a constant depth variation. The problem of wave oscillations in arbitrarily shaped harbours using such techniques has been examined (see for example Hwang & Tuck 1970; Lee 1971).

Table **??** shows a comparison of results obtained from this method using two different truncation parameters with accurate values obtained using the method of Callan *et al.* (1991).

An example of the results that are obtained from our method is given in figure **??**. Figure **??** (*a*,*b*) shows shaded contour plots of ϕ for these modes, normalized so that the maximum value of ϕ on the body is 1. Symmetric (figure **??***a*) modes are shown, while the antisymmetric ones appear in figure **??**(*b*).

COROLLARY 1. *Any non-zero trial function f which satisfies the boundary condition*

a/d	$M=4$	$M=8$	Callan *et al.*
0.1	1.56905	1.56	1.56904
0.3	1.50484	1.504	1.50484
0.55	1.39128	1.391	1.39131
0.7	1.32281	10.322	1.32288
0.913	1.34479	100.351	1.35185

TABLE 1. Values of kd at which trapped modes occur when $\rho(\theta) = a$

FIGURE 1. Shaded contour plots of the potential ϕ for the two trapped modes that exist for an ellipse with $a/d = 1.5$, $b/d = 0.75$. (a) Symmetric about $x = 0$, $kd = 0.96$; (b) antisymmetric about $x = 0$, $kd = 1.398$.

$f(0) = f(1) = 0$ *always satisfies*

$$\int_0^1 \left(\frac{\mathrm{d}f}{\mathrm{d}z}\right)^2 \mathrm{d}z. \tag{6.1}$$

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