

# Nonlinear solutions of the amplitude equations governing fluid flow in rotating spherical geometries.

Submitted by

**Edward William Blockley**

to the University of Exeter as a thesis for the degree of Doctor of Philosophy in  
Applied Mathematics, August 2008.

This thesis is available for Library use on the understanding that it is copyright material and that no quotation from the thesis may be published without proper acknowledgement.

I certify that all material in this thesis which is not my own work has been identified and that no material is included for which a degree has previously been conferred upon me.

.....  
Edward William Blockley

## **Abstract**

Put your abstract in here.

Remember that this should be about 300 words or so.

Best not to use equations here as it'll be used in lots of unscientific places such as on websites and the university's database.

# Acknowledgements

Acknowledgements belong here.

# Contents

Acknowledgements	3
Contents	4
List of Figures	5
List of Tables	6
<b>I Pulse-trains in narrow-gap spherical Couette flow</b>	<b>7</b>
<b>1 Review of previous work</b>	<b>8</b>
1.1 How to use BibTex . . . . .	8
1.1.1 How to cite papers using BibTex . . . . .	9
<b>II Relaxation oscillations in a model motivated by thermal convection</b>	<b>10</b>
<b>2 This is a two part thesis</b>	<b>11</b>
2.1 Maybe we have a second part? . . . . .	11
2.1.1 How to cite papers using BibTex . . . . .	11
<b>A Your appendix title!</b>	<b>12</b>
<b>B Your second appendix title!</b>	<b>13</b>

# List of Figures

# List of Tables

# Part I

## Pulse-trains in narrow-gap spherical Couette flow

# Chapter 1

## Review of previous work

This can be our first chapter. Reviewing the literature is always a good idea!

This thesis template has 40mm margins to the left and 20mm margins everywhere else. We start counting from the title page (page 1) right up to the end of the bibliography.

The sequence things are included are as per the university's guidelines.

### 1.1 How to use BibTex

Here we can learn about using BibTex. To use BibTex you need to enter your papers into the `thesis.bib` file in the same manner as the template paper already included.

To setup the bibliography you will need to first run latex, then bibtex and then latex again twice (to make sure the table of contents and references are fine).

i.e. type

```
latex thesis
```

```
bibtex thesis
```

```
latex thesis
```

```
latex thesis
```

or use the shell script provided by typing

```
lat_bib thesis
```



### **1.1.1 How to cite papers using BibTex**

Can be found in Part II

## Part II

### **Relaxation oscillations in a model motivated by thermal convection**

# Chapter 2

## This is a two part thesis

### 2.1 Maybe we have a second part?

Here we continue BibTex from Part I

#### 2.1.1 How to cite papers using BibTex

It is very simple to cite references using BibTex.

Typing

```
\cite{Blockley_etal}
```

will give you the reference number in brackets — i.e. [1]. The references will be numbered in the order you \cite them and are automatically listed in the Bibliography.

# Appendix A

## Your appendix title!

Perhaps you wish to include some work in an appendix

# Appendix B

## Your second appendix title!

Perhaps you need another appendix

# Bibliography

- [1] E. W. Blockley, A. P. Bassom, A. D. Gilbert, A. M. Soward, *Pulse-train solutions of a spatially heterogeneous amplitude equation arising in the subcritical instability of narrow gap spherical Couette flow*, Physica D 228 (2007) p. 1–30.