

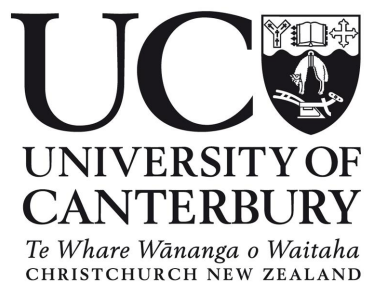
FERNANDO CAGUA

THE RESILIENCE OF ECOLOGICAL NETWORKS



# THE RESILIENCE OF ECOLOGICAL NETWORKS

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Te Whare Wānanga o Waitaha

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## LISTINGS

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## ACRONYMS

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**DRY** Don't Repeat Yourself

**API** Application Programming Interface

**UML** Unified Modeling Language



# KEYSTONENESS, CENTRALITY, AND THE STRUCTURAL CONTROLLABILITY OF ECOLOGICAL NETWORKS

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The R package `bookdownplus` [2] is an extension of `bookdown` [1]. It is a collection of multiple templates on the basis of LaTeX, which are tailored so that I can work happily under the umbrella of `bookdown`. `bookdownplus` helps you write academic journal articles, guitar books, chemical equations, mails, calendars, and diaries.

*You can put some  
additional  
information here*



## FEATURES

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bookdownplus extends the features of bookdown, and simplifies the procedure. Users only have to choose a template, clarify the book title and author name, and then focus on writing the text. No need to struggle in YAML and LaTeX.

With bookdownplus users can

- record guitar chords,
- write a mail in an elegant layout,
- write a laboratory journal, or a personal diary,
- draw a monthly or weekly or conference calendar,
- and, of course, write academic articles in your favourite way,
- with chemical molecular formulae and equations,
- even in Chinese,
- and more wonders will come soon.

Full documentation can be found in the book [R bookdownplus Textbook](#). The webpage looks so-so, while the [pdf file](#) might give you a little surprise.



## QUICK START

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Although this section might not be the latest version, the general idea won't change. Please see [R bookdownplus Textbook](#) to keep up with the update.

### 3.1 PREPARATION

Before starting, you have to install R, RStudio, bookdown package, and other software and packages (i.e. Pandoc, LaTeX, rmarkdown, rticle, knitr, etc.) which bookdown depends on. See the official [manual](#) of bookdown for details. Additionally, if you want to produce a poster, phython must be installed before using, and the path of phython might have to be added to the environmental variables for Windows users.

### 3.2 INSTALLATION

```
install.package("bookdownplus")  
# or  
devtools::install_github("pzhaonet/bookdownplus")
```

### 3.3 GENERATE DEMO FILES

Run the following codes, and you will get some files (e.g. index.Rmd, body.Rmd, bookdownplus.Rproj) and folders in your working directory.

```
getwd() # this is your working directory. run setwd() to change it.  
bookdownplus::bookdownplus()
```

### 3.4 BUILD A DEMO BOOK

Now open bookdownplus.Rproj with RStudio, and press `ctrl+shift+b` to compile it. You will get a book file named \*.pdf in \_book/folder.

### 3.5 WRITE YOUR OWN

Write your own text in index.Rmd and body.Rmd, and build your own lovely book.

### 3.6 MORE OUTPUTS

By default, the book is in a pdf file. From ‘bookdownplus’ 1.0.3, users can get more output formats, including ‘word’, ‘html’ and ‘epub’. Run:

```
bookdownplus::bookdownplus(template = 'article', more_output = c('html'
```

### 3.7 RECOMMENDATIONS

I have been developing some other packages, which bring more features into ‘bookdown’, such as:

- mindr [3], which can extract the outline of your book and turn it into a mind map, and
- pinyin [4], which can automatically generate ‘{#ID}’ of the chapter headers even if there are Chinese characters in them.

Both of them have been released on CRAN and can be installed via:

```
install.packages('mindr')  
install.packages('pinyin')
```

Enjoy your bookdowning!

### 3.8 MODELS

Eq. (1) is an equation.

$$E = mc^2 \tag{1}$$

It can be written as  $E = mc^2$ .



## RESULTS

Fig. 1 psum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua.

Tab. 1 psum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua.

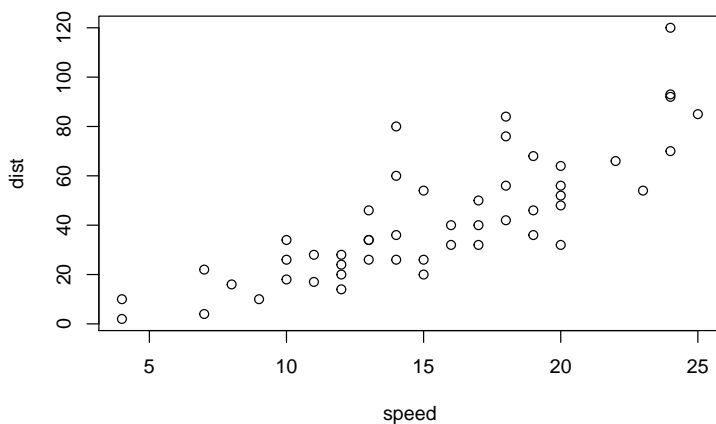


Figure 1: caption

Table 1: Here is a nice table!

Sepal.Length	Sepal.Width	Petal.Length	Petal.Width	Species
5.1	3.5	1.4	0.2	setosa
4.9	3.0	1.4	0.2	setosa
4.7	3.2	1.3	0.2	setosa
4.6	3.1	1.5	0.2	setosa
5.0	3.6	1.4	0.2	setosa
5.4	3.9	1.7	0.4	setosa
4.6	3.4	1.4	0.3	setosa
5.0	3.4	1.5	0.2	setosa
4.4	2.9	1.4	0.2	setosa
4.9	3.1	1.5	0.1	setosa
5.4	3.7	1.5	0.2	setosa
4.8	3.4	1.6	0.2	setosa
4.8	3.0	1.4	0.1	setosa
4.3	3.0	1.1	0.1	setosa
5.8	4.0	1.2	0.2	setosa
5.7	4.4	1.5	0.4	setosa
5.4	3.9	1.3	0.4	setosa
5.1	3.5	1.4	0.3	setosa
5.7	3.8	1.7	0.3	setosa
5.1	3.8	1.5	0.3	setosa

## CONCLUSIONS

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