

PAPER

Stochastic Process I by MIT

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Abstract

Learn how to model stock price by Stochastic Process I.

Motivation: You can also have some paragraphs start with bold face.

Key words:

1. Why are we learning this?

This template is based on the generic OUP authoring template available on CTAN under oup-authoring-template. The CTAN template includes LaTeX documentation and a sample LaTeX document that provide far more details regarding the full functionality of the format. Here, only the basic functioning of the Rmarkdown adaptation of the format is demonstrated.

1.1. A subsection

A numbered list:

- 1) First point
- 2) Second point

- Subpoint

A bullet list:

- First point
- Second point

1.2. Notes

- Extra white space in document will tend to disappear as text is filled in.
- Code blocks tend to generate lots of empty white space when `echo=TRUE` for some reason.

2. A2 Intro

By default, citations are handled by `natbib` using a numeric citation format. To use name-date citations, sets `namedate: TRUE` in the YAML header.

Here are two sample references:

- **author (year) example:** ? showed some really cool things. Only seems to work properly if `namedate: TRUE`.
- **(author year) example:** This is a well known result (?).

The bibliography will appear at the end of the document.

Though not normally available in the OUP LaTeX format, CSL style files can also be used with the Rmarkdown adaptation

by setting in the YAML header `citation_package: "default"` and defining the `cs1` element to be the path towards the style file.

3. A3 Intro

An equation without a label for cross-referencing:

$$E = mc^2$$

An inline equation: $y = ax + b$

An equation with a label for cross-referencing:

$$\int_0^{r_2} F(r, \varphi) dr d\varphi = 1 \quad (1)$$

This equation can be referenced as follows: Eq. ??

4. A4 Intro

The code below creates a figure. The code is included in the output because `echo=TRUE`.

```
plot(1:10, main="Some data", xlab="Distance (cm)",  
     ylab="Time (hours)")
```

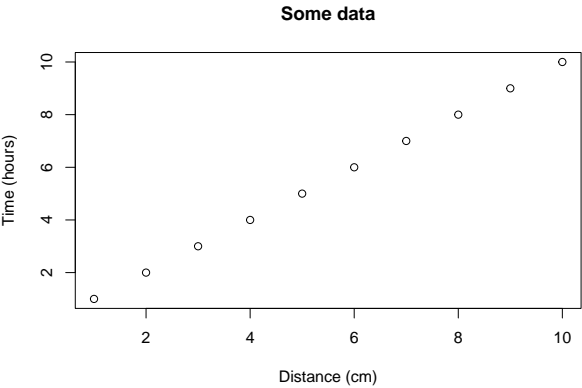


Fig. 1. This is the first figure.

You can reference this figure as follows: Fig. ??.

4.1. Figures spanning two-columns

Figures can span two columns be setting `fig.env="figure*"`.
Reference to second figure: Fig. ??

Table 2. This is a kable table.

ID	code
1	a
2	b
3	c

Table 1. This is a xtable table.

	ID	code
1	1	a
2	2	b
3	3	c

You can reference this table as follows: Table ??.

5. A5 Intro

5.1. Generate a table using xtable

```
df = data.frame(ID=1:3,code=letters[1:3])

# Creates tables that follow OUP guidelines
# using xtable
library(xtable)
print(xtable(df,caption="This is a xtable table.",
              label="tab:tab1"),
      comment=FALSE,caption.placement="top")
```

5.2. Generate a table using kable

```
df = data.frame(ID=1:3,code=letters[1:3])

# kable can also be used for creating tables
knitr::kable(df,caption="This is a kable table.",
              booktabs=TRUE,label="tab2")
```

Some wide data

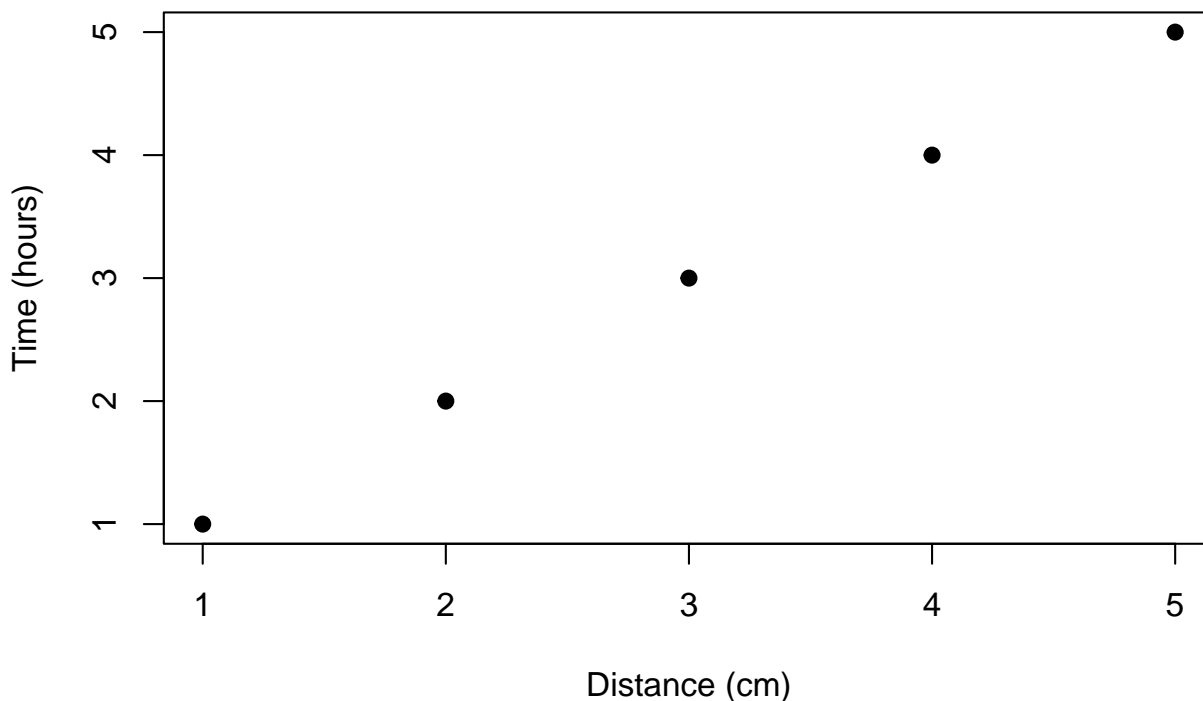


Fig. 2. This is a wide figure.

Table 3. This is a wide kable table.

ID	code1	code2	code3	code4	code5
1	a	d	g	j	m
2	b	e	h	k	n
3	c	f	i	l	o

You can reference this table as follows: Table ??.

5.3. Table spanning two columns

Tables can span two columns by setting `table.envir = "table"` in `knitr::kable`.

```
df = data.frame(ID=1:3,code1=letters[1:3],
               code2=letters[4:6],
               code3=letters[7:9],
               code4=letters[10:12],
               code5=letters[13:15])

# kable can also be used for creating tables
knitr::kable(df,caption="This is a wide kable table.",
             #format="latex",
             table.envir="table*",
             booktabs=TRUE,label="tab3")
```

6. Cross-referencing sections

You can cross-reference sections and subsections as follows: Section ?? and Section ??.

Note: the last section in the document will be used as the section title for the bibliography.

For more portable and flexible referencing of sections, equations, figures and tables, use `bookdown::pdf_document2` with YAML header option `base_format: rticles::oup_article`.

7. A6 Intro

A. Section title of first appendix

blabla

A.1. Subsection title of first appendix

and so on. . .

8. Competing interests

There are no competing interest.

9. Author contributions statement

AA did all the work. The others are just freeloaders.