A Minimal thesis

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Chapter 1

A (numbered) chapter

1.1 Sub-section (numbered)

sub-sub-section (not numbered)

This section will be listed in table of content, but no section number is assigned to it. This is a bold Latex *symbol* $\boldsymbol{\phi}$. See also $\mathbf{Z}$ for *letters*. This is a fraction $\frac{a}{b}$ This is a symbol superscript a letter/word α^{CPM}

This is how to reference an article (bib item) in R Markdown about linear models [1]. Almost always the BibTex style/encoding of a citation can be obtained from Google Scholar. See also *citer* package.

display equations:

$$\text{dispersion} = \phi = \text{median}(\text{APL}_{\text{s}_\text{t}}(\phi_\text{t}))\text{d}'/\chi^2_{\text{d}'},$$

White space is equation, label equations, insert text in equations:

$$\hat{\sigma}^2_{ti} = \frac{\sum_k (y_{tk} - \bar{y}_{ti})^2/K - 1}{\bar{y}_{ti}}, \quad \text{where} \quad \bar{y}_{ti} = \frac{1}{K}\sum_k y_{tik} \tag{1.1}$$

then you can reference the equation using 1.1

Chapter 2

This is a labelled chapter

Conditional equations

$$\psi_{i,j} = \sum_{f \in F_g} \psi_{f_{i,j}} = \begin{cases} p^i_f (1 - p^i_f) & \text{if} \quad i = j \\ -p^i_f p^j_f & \text{if} \quad i \neq j \end{cases}$$

line-up equations

$$\begin{aligned} E[d_t] &= EE[d_t|y_t] \\ &= E[x\hat{\beta}_t|y_t] \\ &= xE[\hat{\beta}_t|y_t] \\ &= xE[(x^T x)^{-1} x^T d_t|y_t] \\ &= x(x^T x)^{-1} x^T E[d_t|y_t] \\ &= x(x^T x)^{-1} x^T E[y_t + \xi_t] \\ &= x(x^T x)^{-1} x^T [x\hat{\beta}_t + 0] \\ &= x\hat{\beta}_t \end{aligned} \tag{2.1}$$

Chapter 3

Line spacing example

3.1 Reset line spacing:

So far the line-space was 1.5 as per the YAML specification. If you'd like to reset use:

then the space between lines is going to be back to 1 line. This is the second line with the reset line-spacing. A very very long line should go here to show that the line spacing is set back to default.

References

[1] G.K. Smyth, Linear models and empirical bayes methods for assessing differential expression in microarray experiments, Statistical Applications in Genetics and Molecular Biology. 3 (2004) 1–25.

Appendix

Tables of simulated library sizes

Table 1: figure caption

	Group 1			Group 2		
0.3930090	-0.1983760	-0.8666828	-2.4420388	-0.8544431	0.2902185	-0.1673473
1.8501732	0.4427126	-0.3561787	1.2350078	-0.7225915	-1.0244655	0.8919221
0.2203496	0.7361957	-0.0897379	-0.4621724	1.0770585	-1.3578648	-1.1155915
-0.2740243	-0.4823641	0.2020167	1.2482104	-0.6224926	1.2504677	0.3727391
-0.6582122	1.6084249	0.0813060	0.3544190	-1.3887668	0.9634568	0.8342793