Errata for

Linear Models: An Integrated Approach

(Last updated: 5 February, 2004)

1. Page 120, line 17. Replace $\boldsymbol{l}'(\boldsymbol{y} - \boldsymbol{Z}\boldsymbol{\theta}_0)$ with $\boldsymbol{l}'(\boldsymbol{y} + \boldsymbol{Z}\boldsymbol{\theta}_0)$.

2. Page 120, line 20. Replace $\widehat{\boldsymbol{Z}\boldsymbol{\theta}} + \boldsymbol{Z}\boldsymbol{\theta}_0$ with $\widehat{\boldsymbol{Z}\boldsymbol{\theta}} - \boldsymbol{Z}\boldsymbol{\theta}_0$.

3. Page 139, Exercise 4.13. Replace $\boldsymbol{X}\boldsymbol{l} = \boldsymbol{p}$ with $\boldsymbol{X}'\boldsymbol{l} = \boldsymbol{p}$.

4. Page 154, line 1. Replace $s^2 \sim \chi_{n-r}$ with $(n-r)s^2 \sim \chi_{n-r}$.

5. Page 157, lines 8 and 9. Replace r with 2 everywhere.

6. Page 163, equation (5.3.3). The inequality '$<$' should be '$>$'.

7. Page 173, line 8. Replace $F_{1,n-r,\frac{\alpha}{2q}}$ with $F_{1,n-r,\frac{\alpha}{q}}$.

8. Page 179, line 17. There should be right parenthesis after 5.27.

9. Page 180, line 10. The right endpoint of the interval should be $\boldsymbol{x}_0'\boldsymbol{\beta} + \sigma z_{\gamma/2}$, instead of $\boldsymbol{x}_0'\boldsymbol{\beta} - \sigma z_{\gamma/2}$.

10. Page 183, Equation (5.5.1). A multiplicative factor, σ^2, is missing from the numerator of the middle expression. Replace $D(\boldsymbol{A}\widehat{\boldsymbol{\beta}} - \boldsymbol{\xi})$in the next sentence with $D(\boldsymbol{A}\widehat{\boldsymbol{\beta}} - \boldsymbol{\xi})/\sigma^2$.

11. Page 185, Exercise 5.3. Replace 'a $100(1-\alpha)\%$ elliptical confidence interval' with 'the usual $100(1-\alpha)\%$ elliptical confidence region'.

12. Page 186, lines 1 and 2. $\boldsymbol{p}_1\widehat{\boldsymbol{\beta}}$ should be $\boldsymbol{p}_1'\widehat{\boldsymbol{\beta}}$.

13. Page 188, line 2. Replace $\boldsymbol{X}' = (\boldsymbol{x}_1 \otimes \boldsymbol{1}_{n_1\times 1} : \cdots : \boldsymbol{x}_m \otimes \boldsymbol{1}_{n_m\times 1})$ with $\boldsymbol{X}' = (\boldsymbol{x}_1\boldsymbol{1}'_{n_1\times 1} : \cdots : \boldsymbol{x}_m\boldsymbol{1}'_{n_m\times 1})$.

14. Page 189, lines 1, 6 and 11. Replace $\boldsymbol{A}$ with $\boldsymbol{A}'$.

15. Page 197, line 9. Replace $\begin{pmatrix} n_1 & 0 & \cdots & 0 \\ 0 & n_2 & \cdots & 0 \\ \vdots & \vdots & \ddots & \vdots \\ 0 & 0 & \cdots & n_t \end{pmatrix}$ with $\begin{pmatrix} n_1 & 0 & \cdots & 0 \\ 0 & n_2 & \cdots & 0 \\ \vdots & \vdots & \ddots & \vdots \\ 0 & 0 & \cdots & n_t \end{pmatrix}^{-1}$.

16. Page 202, lines 4 and 5. Replace 'the scaled group averages $\bar{y}_1/\sqrt{\widehat{\sigma^2}/n_1}, \ldots, \bar{y}_t/\sqrt{\widehat{\sigma^2}/n_t}$ have the multivariate t-distribution' with 'the mean-adjusted and scaled group averages $(\bar{y}_1 - \tau_1)/\sqrt{\widehat{\sigma^2}/n_1}, \ldots, (\bar{y}_t - \tau_1)/\sqrt{\widehat{\sigma^2}/n_t}$ have the multivariate t-distribution'.

17. Page 233, Exercise 6.4, line 7. Replace 'Test' with 'test'.

18. Page 240, line 9. Replace the matrix $\boldsymbol{Z}' = (\boldsymbol{J}_b : \boldsymbol{J}_b^2 : \cdots : \boldsymbol{J}_b^{b-1})'$ with the matrix $\boldsymbol{Z}' = (\boldsymbol{J}_b^0 : \boldsymbol{J}_b^1 : \cdots : \boldsymbol{J}_b^{b-1})'$.

19. Page 248, line 10. Replace $(\boldsymbol{I} - \boldsymbol{P}_V)(\boldsymbol{I} - \boldsymbol{P}_d)\boldsymbol{y}$ with $(\boldsymbol{I} - \boldsymbol{P}_d)(\boldsymbol{I} - \boldsymbol{P}_V)\boldsymbol{y}$. (The given expression is also correct but this is not obvious from the context.)

20. Page 263, line 4. Replace 'Exercise 11' with 'Exercise 8.11'.

21. Page 541, Exercise 3.9. Insert the sentence 'Here, $\boldsymbol{W}$ has to be a constant matrix.'. Also replace $\boldsymbol{W}(\boldsymbol{x})$ by $\boldsymbol{W}$ everywhere, and in the last sentence replace 'an affine function of $\boldsymbol{x}$' with 'a constant vector'.

22. Page 545, Exercise 4.13. The last sentence is wrong. It should read as follows. That the solution is indeed a minimum follows from the following facts: (a) the choice $\boldsymbol{l} = -\frac{1}{2}\boldsymbol{X}\boldsymbol{\lambda}$ minimizes $\boldsymbol{l}'\boldsymbol{l}+\boldsymbol{\lambda}'(\boldsymbol{X}'\boldsymbol{l}-\boldsymbol{p})$ for fixed $\boldsymbol{\lambda}$, and (b) the corresponding minimum value, $-\frac{1}{4}\boldsymbol{\lambda}'\boldsymbol{X}'\boldsymbol{X}\boldsymbol{\lambda} - \boldsymbol{\lambda}'\boldsymbol{p}$ is maximized by the choice $\boldsymbol{\lambda} = -2(\boldsymbol{X}'\boldsymbol{X})^{-}\boldsymbol{p}$.

23. Page 547, Exercise 4.31 (b). Replace $\mathcal{C}(\boldsymbol{X}(\boldsymbol{I} - \boldsymbol{P}_{X(I-P_{A'})}))$ by $\mathcal{C}(\boldsymbol{X}(\boldsymbol{I} - \boldsymbol{P}_{A'}))$ everywhere. In the last sentence replace $D(\widehat{\boldsymbol{X}\boldsymbol{\beta}})$ by $D(\widehat{\boldsymbol{\beta}})$.

24. Page 548, lines –3 and –4. Omit the sentence: These two conditions hold simultaneously only if n is a multiple of 2^p.

25. Page 549, last equation. $\boldsymbol{\beta}$ should be replaced everywhere with $\widehat{\boldsymbol{\beta}}$.

26. Page 551, line 11, 13, 14 and 15. Replace $\boldsymbol{\beta}$ everywhere with $\widehat{\boldsymbol{\beta}}$.

27. Page 554, line –3, –1. Replace $\rho(\boldsymbol{X} : \boldsymbol{A}(\widehat{\boldsymbol{X}\boldsymbol{\beta}}))$ with $\rho(\boldsymbol{X} : \boldsymbol{A}'(\widehat{\boldsymbol{X}\boldsymbol{\beta}}))$.

28. Page 555, last line of Exercise 5.27. Replace 'Exercise 7.5' with 'Exercise 5.5'.

29. Page 556, Exercise 6.19. Replace $\boldsymbol{A}$ by $\boldsymbol{A}'$.

30. Page 573, Exercise 8.19. Replace 'renk-factorization' with 'rank-factorization'.