

Bowman, A.W. & Azzalini, A. (1997)

Applied Smoothing Techniques for Data Analysis: the kernel approach with S-Plus illustrations

Errata

Chapter 1

- Page 6: The second weight function in the expression displayed at the foot of the page should have $y_2 - y_{2i}$ as its first argument.
- Page 7: The title of Illustration 1.4 should be ‘Two-dimensional density estimates from the aircraft data’.
- Page 8: The title of Illustration 1.5 should be ‘An imageplot and sliceplot from the aircraft data’.

Chapter 2

- Page 39, line 13: The phrase in brackets should read ‘(divided by 10,000)’.
- Page 40, line 5: The phrase in brackets should read ‘(multiplied by 10,000 for convenience)’.
- Page 41: Section 2.6 contains the first appearance of a reference band and so the following paper should be cited:

Bowman, A.W. and Young, S.G.(1996). Graphical comparison of nonparametric curves. *Applied Statistics* **45**, 83–98.

Chapter 3

- Page 53: In line 5 of the code displayed in Illustration 3.2, `longitude` should read `Longitude`. (This is typed correctly in the script `trwlplot`.)
- Page 59: In Section 3.5, reference should be made to the following paper as the source of the Stanford heart transplant data:

Miller and Halpern (1980). Regression with censored data. *Biometrika* **69**, 521–531.
- Page 60: Some of the data points are incorrectly plotted in the top two panels of Figure 3.7. The points are correctly plotted in the bottom left panel.
- Page 64: The expression under the integral sign should read $\frac{1}{h}w\left(\frac{x-t}{h}\right) dt$.

- Page 67: In the last line of the code displayed in Exercise 3.3, it would be more appropriate to use the parameter `bandwidth=0.5`.
- Page 68: In Exercise 3.5, the filename should be `stananim.q`, not `stananim.S`.

Chapter 4

- Page 72: In the displayed approximate expression for $\mathbb{E}\{\hat{m}(x_1, x_2)\}$ the initial term $m(x_1, x_2)_+$ has been omitted.
- Page 74: In the last displayed expression, for the Gasser *et al.* (1986) estimator, the lower limit for the summation should be `i=2`.
- Page 84: In Exercise 4.3, the function call for constructing the weight matrix is `sm.weight(x, x, h)`.

Chapter 5

- Page 90: The title of Illustration 5.1 should read ‘A test of significance for the relationship between catch score and depth for the Great Barrier Reef data’.
- Page 92, line 5: The word ‘test’ should be deleted from the phrase ‘The formal hypotheses test’.

Chapter 6

- Page 110: The displayed calculation of the variance should read as follows:

$$\begin{aligned} \text{var} \left\{ \sqrt{\hat{f}} - \sqrt{\hat{g}} \right\} &= \text{var} \left\{ \sqrt{\hat{f}} \right\} + \text{var} \left\{ \sqrt{\hat{g}} \right\} \\ &= \frac{1}{4} \frac{1}{n_1 h} \int w^2(y) dy + \frac{1}{4} \frac{1}{n_2 h} \int w^2(y) dy \\ &= \frac{1}{4} \frac{1}{h} \left(\frac{1}{n_1} + \frac{1}{n_2} \right) \int w^2(y) dy, \end{aligned}$$

where n_1 and n_2 denote the sample sizes of the two groups.

- Page 114: The numerator of the expression displayed at the foot of the page should read $\sqrt{\alpha(w)^2 \left(\frac{1}{n_1} + \frac{1}{n_2} \right) / (4h_1 h_2)}$, where h_1 and h_2 denote the smoothing parameters used in dimensions 1 and 2.
- Page 115: There is an error in the script `lc_rr` used to produce this figure. As a result, the bottom right hand panel of the figure is incorrect. (The script error has been corrected in version 2 of the `sm` library.)

- Page 117, line -2: The reference is King *et al.* (1991).
- Page 123: A reference to Young and Bowman (1995) should be given in Section 6.5.
- Page 125: The displayed vector-matrix expression for the numerator of the test statistic should be $z^\top \{(I - S_s)D, (S_s - S_d)\}^\top \{(I - S_s)D, (S_s - S_d)\}z$, where the comma separates the components of a partitioned matrix.
- Page 126: In Illustrations 6.7 and 6.8 the datafile name is `wonions`, not `white.onions`.
- Page 127: In Exercise 6.8, the filename in `bonions`, not `brown.onions`.

Chapter 8

- Page 159: In the second last line of the code displayed in Illustration 8.4, the smoothing parameter should be set to `h=3`, not `h=30`. (This change has been made in the script `mackplot` in version 2 of the `sm` library.)
- Page 160: In this page it is implied that the semiparametric model is being fitted by the backfitting algorithm. In fact it is the Speckman (1988) approach which is used, as described in the displayed equations.
- Page 166: In line 5 of both Illustration 8.7 and Illustration 8.8, `Depth` should be written as `smack.depth`. (This change has been made in the scripts `smackplt` and `smackgam`, and in the datafile `smacker`, in version 2 of the `sm` library.)

Appendix A

- Page 171: The entry for the significance trace function should be entitled `sig.trace`, not `sigtrace`.
- Page 173: The entry for `sm.sigma` should be entitled `sm.sigma(x,y,...)` and the text should refer to ‘one covariate `x`’.

Index

- The following reference should be inserted:
Bowman, A.W. and Foster,P.J. (1993). Density based exploration of bivariate data. *Statistics & Computing*, **3**, 171–177.
- The following items should be added under the entry ‘dataset’:
mackerel, 154–157, 159
Spanish mackerel, 163–167