Corrections to

Statistical Analysis of Circular Data

by N.I. Fisher Cambridge University Press, 1993.

Known errors as at June 27, 2002. The author thanks all those who have contributed to this list.

Page Correction

 13_{12} "Elsewhere, Salvemini ..."

33¹⁰ Interchange "amplitude" and "angular".

- 35-2 Delete ")".
- 36 Delete two points from Figure 2.17(b) (80° and 107°). The revised figure should be as follows:



 36^4

Equation (2.32) should read

$$d(\theta) = \pi - \frac{1}{n} \sum_{i=1}^{n} |\pi - |\theta_i - \theta||$$

In Figure 3.2, the label $\kappa = 5$ should be attached to the left-most curve in the upper part of the figure, and the label $\kappa = 2$ to the one next to it. The correct figure appears below.



Fig. 3.2 Cumulative distribution functions of von Mises distributions with mean directions 180° and various concentration parameters.

53

In Figure 3.3, the label $\kappa = 5$ should be attached to the right-most curve in the upper part of the figure, and the label $\kappa = 2$ to the one next to it. The correct figure appears below.



Fig. 3.3 Inverses of the von Mises cumulative distribution functions in Figure 3.2, which give the quantiles $\theta = Q(P)$ of the distribution function corresponding to a given cumulative probability P, for distributions with differing concentration parameters.

53₁₂ Re–label as Step 1.

53₁₁ Re–label as Step 2.

 53_{11-7} Replace calculations in this step by

$$g = f - P$$

$$d = \exp[\log |g| + c - \kappa \cos(t)]$$

$$t = t - \operatorname{sign}(g) d$$

$$f = F_{\kappa}(t)$$

 53_6 Replace calculation in this step by

if
$$d > \epsilon$$
 go to Step 2

53₃ "... until successive values of $|f - P| \dots$ "

Figure 4.4 is incorrect: it shows the complete original data set rather than the subset in Appendix B7. The correct version of the figure is shown below.



Directions chosen by 100 ants in response to an evenly illuminated black target placed as shown. See Example 4.4.

- 69_3 "... using the omnibus test in §4.13(*ii*)"
- 73_{13} (4.17), not (4.18).
- 75^{14} "are 280.8° and ..."
- 76⁹ Replace line by "confidence region as $2.3^{\circ} \pm 13.5^{\circ}$, from §8.3.2 Stage 4, Technique 2."
- 82¹³ "... described in §4.13(*iii*)."
- 84^{14} Add full stop at end of sentence.
- 84₁₁ Second term in equation (4.35) should be $-n(\bar{z}-\frac{1}{2})^2$ not $-n(\bar{z}-\frac{1}{2})$.

In Figure 4.15(a), a point should be added at (0.71, 0.95). The correct figure appears below.



Fig 4.15 (a) Complete data set

- 93₈ §4.4.5(a)
- 94₆ (§4.5.6(i))
- 94_{14} (3.36), not (3.26).
- 97 Equation (4.58): in the terms commencing with the multiplier (1-p), each of the functions A_1, A_2 and A_3 should have κ_2 as its argument, not κ_1 .

Similarly, in the displayed line 97_{l-7} , the term following $(1 - \tilde{p})$ should be $A_1(\tilde{\kappa}_2)$.

- 105_{11-10} "(The data are listed in Appendix B6; ...")
- 115₅₋₄ In each line, replace (5.14) by (5.13).
- 125₁₁₋₁₀ "Consider data sets 10 and 1 of the termitaria described in Examples 5.2 and 5.5."

126Second line of caption to Figure 5.11: "...for data sets 10 and 1 in
Figure 5.2."126"Consider data sets 5 and 14 of the termitaria described in Examples
5.2 and 5.5."127Second line of caption to Figure 5.12: "...for data sets 5 and 14 in
Figure 5.2."1315-6"Consider data sets 10 and 5 of the termitaria described in Examples
5.2 and 5.5."14112
$$U_n = 24(T_c^2 + T_s^2)/(n^3 + n^2)$$
 (6.6)142Caption to Figure 6.5: replace C-concordant by C-discordant1421Replace C-concordant by C-discordant

142⁵ Replace *C*-concordant by *C*-discordant

- 142⁷ Replace *C*-discordant by *C*-concordant
- 146 Right-most circular plot in Figure 6.6: the point labelled 2 should be moved to the *bottom* of the circle, and located about the middle of the shorter arc connecting points 1 and 3. The correct figure appears below.



Fig 6.6 (b) C–discordance (negative association)

 174_{12-11} "The local quadratic version of the so-called 'loess' algorithm ...".

$$205^{16}$$
 "... from Algorithm 1 in §8.3.5, ..."

 $206^{8,9,11}$ Replace §8.3.4 by §8.3.5 in each line.

208₁₂ The last part of the line beginning $q_0 = 1, \ldots$, which currently looks like

 $], j = 1, \dots, B$ should be re-set to look like the corresponding part three lines earlier (line commencing $p_0 = 1, \dots$) in terms of its spacings:

], $j = 1, \ldots, B$

211⁶ Change first sign on right hand side of equation (8.37):

$$\binom{c_B}{s_B} = \mathbf{z}_0 + \dots$$

 211^7 Replace equation in (8.38) by

$$\binom{C_B}{S_B} = (c_B^2 + c_B^2)^{-\frac{1}{2}} \binom{c_B}{s_B}$$
(8.38)

212¹⁶ "Refer to the preamble to $\S8.3.3...$ "

 219^{13} Delete third line of Table A.1 (with final entry 1.5985).

- 258^2 Appl. Statist. **28**, ...
- 273¹⁴ insert page entry population circular dispersion 42