Errata for "Nonlinear Time Series: Nonparametric and Parametric Methods" (2003, Springer)

Items marked with '' have been corrected in Second Printing 2005 (paperback)*

Many references have been updated in Second Printing and are not listed below

*Page 13, line 15: There is extra "enddocument".

Page 18, two line below (1.8): '§5.2' should be '§4.1'.

Page 20 (1.11), Page 318 (8.1) and Page 319 (8.4): 'X_1' should be 'X_{t-1}'.

Page 30 (2.2): '$a_j a_k$' should be '$a_j a_l$'.

Page 32, line 20: 'is no longer' should be 'may be no longer'

*Page 34, 2 line above (2.8): $(f(x_1), x_1, \cdots, x_{p-1})^\tau$ should be $(f(\mathbf{x}), x_1, \cdots, x_{p-1})^\tau$.

Page 35, line -8: $\mathbf{X}_t$'s should be $\mathbf{X}_t$.

Page 37, (2.16) may be replaced by $(E\xi_t^2)^{1/2} \sum_{j=1}^\infty b_j < 1$, *(as* $E\xi_t^2 \geq (E\xi_t)^2 = 1$*)*.

Page 43 (2.27): '$\rho(q)$' should be '$\rho(t)$'.

Page 48, last line of both Examples 2.2 and 2.3: '$\pm 1.96/\sqrt{T}$ and ± 0.196' should be '$\pm 1.96/\sqrt{T} = \pm 0.196$'.

*Page 59, in (2.48): $B_q \cos(p\omega)$ should be $B_p \cos(p\omega)$.

*Page 61, in (2.53): the last term should be $(-1)^t \frac{1}{\sqrt{T}} \alpha_{T/2}$ instead of $(-1)^{T/2} \frac{1}{\sqrt{T}} \alpha_{T/2}$.

Page 71, first 3 lines: $c \equiv P(A) = P(X_1 \leq x_0) > 0$ should be $c \equiv P(X_1 \leq x_0) \in (0, 1)$. A_0 and B_0 should be replaced by, respectively, A and B.

*Page 86, lines -3 and -2 should be replaced by $\left| E\exp(itQ_n^L/\sqrt{nh}) - \prod_{j=1}^{k_n} E\exp(it\xi_j^L/\sqrt{nh}) \right|$
$+ \left| \prod_{j=1}^{k_n} E\exp(it\xi_j^L/\sqrt{nh}) - \exp\{-t^2 \nu_L(x)/2\} \right|$.

Page 100, line -8: 'family' should be 'families'.

Page 101, line 10: insert after *He showed that*: 'if $g(\cdot) \equiv f_m(\cdot|\theta_m^0)$ for a particular value θ_m^0,'.

*Page 113, line -2: $j = 1, \cdots, 8$ should be $j = 1, \cdots, 7$.

Page 121, line 2, '(3.38)' should be '(3.39)'.

*Page 131, lines 2 and 3 in section 4.1.2 should read 'Based on these observations, we estimate the parameters b_{ij}, σ_i, and d and determine the orders p_i and the partition $\{A_i\}$'.

*Page 134, line 4: $\widehat{\mathbf{b}}_i - \mathbf{b}$ should be $\widehat{\mathbf{b}}_i - \mathbf{b}_i$.

Page 134, line 10: '$\sum_{j=1}^2$' should be '$\sum_{j=1}^p$'.

*Page 144, (4.16) and page 150, (4.28): $\max\{1, (E\varepsilon_t^4)^{1/2}\}$ may be replaced by $(E\varepsilon_t^4)^{1/2}$.

*Page 146: replace last 5 lines by: where $e_t = (\varepsilon_t^2 - 1)(c_0 + b_1 X_{t-1}^2)$. On the other hand,

$$\begin{aligned} EX_t^4 &= E\sigma_t^4 \, E\varepsilon_t^4 \;=\; 3E\sigma_t^4 \;=\; 3(c_0^2 + 2c_0 b_1 EX_t^2 + b_1^2 EX_t^4) \\ &= 3(1-b_1)^2 (EX_t^2)^2 + 6(1-b_1) b_1 (EX_t^2)^2 + 3b_1^2 EX_t^4 \;=\; 3(1-b_1^2)(EX_t^2)^2 + 3b_1^2 EX_t^4. \end{aligned}$$

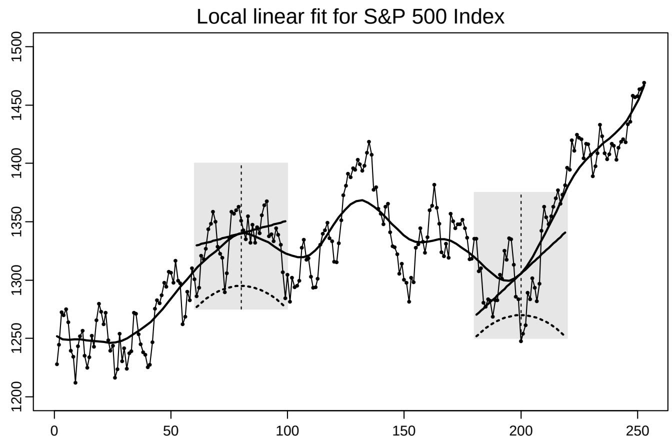
Page 178, caption of Fig.4.19, *page 183, caption of Fig.4.21, and *page 184, line 9: '$q^N - q$ plot' should be replaced by 'QQ-plot'.

Page 180, the last expression should be:

$$\mathrm{Corr}(X_t^2, X_{t-k}^2) = \frac{\exp(\sigma_h^2 a_1^{|k|}) - 1}{3\exp(\sigma_h^2) - 1} \approx \frac{\sigma_h^2}{3\exp(\sigma_h^2) - 1} a_1^{|k|}, \quad |k| \neq 0.$$

Page 206, line 2: '$c > 0$' should be '$C > 0$'.

*Page 223: replace Fig.6.3 by



Page 239, line -5: 'S_c' should be '$\mathbf{S}_c$'.

Page 245, line -2: $c_p^T S^{-1} c_p$ should be $\mathbf{c}_p^T \mathbf{S}^{-1} \mathbf{c}_p$.

Page 260, line 1 in section 6.6.2: 'Figure 5.4' should be '§5.3'.

*Page 261, lines 6 and 7: n should be replaced by T.

Page 274, line 3: 'rho' should be 'ρ'.

*Page 279: caption of Figure 7.2 should be "Bartlett kernel".

Page 279, line -4: 'r' should be 'p'.

Page 280, Example 7.4: '$\frac{1}{2} \leq x \leq 1$' should be '$\frac{1}{2} \leq |x| \leq 1$'.

Page 281, (7.11): '$\tilde{I}_p(\tau)$ should be $\tilde{I}_T(\tau)$'.

Page 291, lines -9 and -4: '$||K||^2$' should be '$||K||_2^2$'.

Page 293, two line above (7.30): '$\widehat{m}_{LK}(\omega_q^*)$' should be '$\widehat{m}_{LK}(\omega_j^*)$'.

Page 297, line 9: Replace "Theorem 2.14" by "Lemma 7.1".
We thank **Thomas Mikosch** for pointing out the discrepancy. He refers to Davis and Mikosch (1999, Annals of Probability, 27, 522-536) for a different proof.
Note: The result of Lemma 7.1 orginates from page 347 of Kooperberg, Stone and Truong (1995b) and was used in Fan and Gijbels (1996), page 256.

Page 299, two line below (7.38), and four line above (7.39): $||K||^2$ should be $||K||_2^2$, and $||K - K * K/2||^2$ should be $||K - K * K/2||_2^2$.

Page 331, (8.18) and Table 8.5: x_t should be X_t.

Page 339, in (8.36): $d - 1$ should be $p - 1$.

Page 347, line 4: '2400' should be '2410'.

Page 369, in (8.69): $\mathbf{B}^T \mathbf{X}_t$ should be $\mathbf{B}^T \mathbf{X}_{t'}$.

Page 371, line -10: Figure 8.10(d) should be Figure 8.14(d).

Page 372 Figure 8.14: the bottom right panel should be labelled as '(d)' instead of '(c)'.

Page 378, line -4: (8.72) should be (8.80).

Page 382, line -1: σ_{t-6} should be σ_6.

Page 384, three line below (8.87): $\varepsilon_t' = \log \varepsilon_t^2 - E(\log \varepsilon_t^2)$.

Pages 410, 411 and 414: $\mathbf{U}$ should be U.

*Page 415, line 8: Unnecessary line break.

Page 423, line -1: $T_{n,5} = \frac{n}{2} \log(RSS_0/RSS_1)$.

Page 463, in condition (C4): '$n \to \infty$' should be '$T \to \infty$'.

Page 463 lines -8 – -9, and page 465 line -5: 'nh' should be 'Th'.

*Page 448, line -1: $\{X_{t-1},\ k \geq 1\}$ should be $\{X_{t-k},\ k \geq 1\}$.

*Page 449: line -8: 'is not the best estimator' should be 'is not the best predictor'.

*Page 453, caption of Fig.10.3 should read: 'Plots of the 200 absolute m-step-ahead predicted errors (diamonds) against their rounded initial values as well as the estimated function $|\widehat{\dot{f}}_m(x)|$ (solid curves) for (a) $m = 1$ ($h = 0.32$) and (b) $m = 2$.'

*Page 457, replace line 6 by $0 = \lambda \sum_{j=1}^{T} \frac{(X_j - x)K_h(X_j - x)}{1 + \lambda(X_j - x)K_h(X_j - x)} = T - \sum_{j=1}^{T} \frac{1}{1 + \lambda(X_j - x)K_h(X_j - x)}$.

Page 488, line -10, '343-77' should be '343-377'.

Page 490, line -9, 'Bickel, P.' should be 'Bickel, P.J.'.

Page 514: add reference

Kazakevčius, V. and Leipus, R. (2002). On stationarity in the ARCH(∞) model. *Econometric Theory*, **18**, 1-16.

Page 518: Replace the reference 'Liu and Brockwell (1982)' by

Liu, J. and Brockwell, P.J. (1988). On the general bilinear time series model. *Journal of Applied Probability*, **25**, 553-564.

Page 532, the missing reference for Vasicek (1977): *Journal of Financial Econometrics*, **5**, 177-188.

Page 534, lines 7 – 8: replace the reference 'Whittle (1962)' by

Whittle, P. (1961). Gaussian estimation in stationary time series. *Bulletin of the International Statistical Institute*, **33**, 1-26.

We sincerely thank **Fukang Zhu** for forwarding us over 40 errors he has spotted!