The Annals of Statistics
2010, Vol. 38, No. 6, 3839
DOI: 10.1214/10-AOS818

CORRECTION

RESIDUAL EMPIRICAL PROCESSES FOR LONG AND SHORT MEMORY TIME SERIES

Ann. Statist. **36** (2008) 2453–2470

BY NGAI HANG CHAN AND SHIQING LING

Chinese University of Hong Kong and Hong Kong University of Science & Technology

It has been brought to our attention that the limit distribution of Corollary 3.1 on page 2460 of [1] was incorrect. Corollary 3.1 and Remark 3.1 of [1] have to be modified as follows. These changes do not affect the other results in [1].

COROLLARY 3.1. *If Assumptions* 2.1 *and* 3.1 *hold and* $H \in (1/2, 1)$, *then*

$$\Big[\sigma_n \sup_x F'(x)\Big]^{-1} \sup_x |\hat{K}_n(x)| = o_p(1).$$

REMARK 3.1. This corollary reflects the effects of the slower convergence rate of the estimated parameter $\hat{\alpha}_{0n}$. This fact serves as a reminiscence of the classical Kolmogorov–Smirnov statistics problem when the underlying parameters are estimated; see Durbin (1976). When α_0 is known, the test statistic (1.5) is still valid, however. As pointed out by the reviewer, when $F = F(x, \theta)$ involves an unknown parameter θ, one should consider $\hat{K}_n$ with $F(x)$ being replaced by $F(x, \hat{\theta}_n)$. When $H \leq 1/2$, it can be shown that the limit distribution of the statistic exists by means of the result of Wu (2003). The closed form of such a limit distribution is rather complicated and does not possess a simple expression, however, and is not presented here.

REFERENCES

[1] CHAN, N. H. and LING, S. (2008). Residual empirical processes for long and short memory time series. *Ann. Statist.* **36** 2453–2470. MR2458194

DEPARTMENT OF STATISTICS
CHINESE UNIVERSITY OF HONG KONG
SHATIN, NT
HONG KONG
P.R. CHINA
E-MAIL: nhchan@sta.cuhk.edu.hk

DEPARTMENT OF MATHEMATICS
HONG KONG UNIVERSITY
OF SCIENCE & TECHNOLOGY
CLEAR WATER BAY, KOWLOON
HONG KONG
P.R. CHINA
E-MAIL: maling@ust.hk

Received February 2010.