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Erratum
Identification of Multifractional Brownian Motion

By Jean-François Coeurjolly. *Bernoulli*: (2005), **11**, 987–1008.

An error has been found in the expression for $\mathbb{E}(Z(j_1*)Z(j_2*))$ given in the proof of Lemma 2 at the top of p. 1001. This should read as follows:

$$\mathbb{E}(Z(j_1*)Z(j_2*)) \overset{N\to+\infty}{\longrightarrow}$$

$$\begin{cases} \dfrac{\pi^a_{H(t_1)}(j_{2*}-j_{1*})}{\pi^a_{H(t_1)}(0)} = \mathcal{O}\big(|j_2*-j_1*|^{2H(t_1)-2p}\big), & \text{if } j_1*, j_2* \leqslant v_N(t_1), \\ \dfrac{\pi^a_{H(t_2)}(j_2*-j_1*)}{\pi^a_{H(t_2)}(0)} = \mathcal{O}\big(|j_2*-j_1*|^{H(t_1)+H(t_2)-2p}\big), & \text{if } j_1*, j_2* > v_N(t_1), \\ 0, & \text{otherwise.} \end{cases}$$

The third limit was given as

$$\frac{\pi^a_{H(t_1)/2+H(t_2)/2}(j_2*-j_1*)}{\big\{\pi^a_{H(t_1)}(0)\pi^a_{H(t_2)}(0)\big\}^{1/2}} = \mathcal{O}\big(|j_2*-j_1*|^{H(t_1)+H(t_2)-2p}\big).$$

But for n sufficiently large, t_1 and t_2 are sufficiently separated in the sense that the neighbourhoods $\mathcal{V}_{N,\varepsilon}(t_1)$ and $\mathcal{V}_{N,\varepsilon}(t_2)$ do not overlap, which then implies that this term tends to zero.

As a consequence, the correct statement of Proposition 1(ii) is as follows: the finite-dimensional law of the process $\big\{\sqrt{2N\varepsilon_N}V_{N,\varepsilon}(t, a),\ t\in]0, 1[\big\}$ converges, when $N\to+\infty$, towards that of a centred Gaussian $\{\mathbb{G}(t),\ t\in]0, 1[\}$ with covariance function defined by

$$\operatorname{cov}(\mathbb{G}(s), \mathbb{G}(t)) = \begin{cases} 2\displaystyle\sum_{k\in\mathbb{Z}} \frac{\pi^a_{H(t)}(k)^2}{\pi^a_{H(t)}(0)^2}, & \text{if } s=t, \\ 0, & \text{if } s\neq t. \end{cases}$$

A similar remark applies to Proposition 2.

I am sincerely grateful to A. Begyn (University of Toulouse III), who drew my attention to this error. He has corrected the error in his paper (Begyn 2005) which generalizes this work.

Reference

Begyn, A. (2005) Functional limit theorems for generalized quadratic variations of Gaussian processes. Preprint, available at http://www.lsp-ups-tlse.fr/Fp/Begyn/.