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Correction to "On the modulus of continuity of sample functions of Gaussian processes"

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1. Lemma 6, (i) (p. 509) is not true without some conditions. This assertion must be changed into the following: Let $f(x)$ be a concave function which is non-decreasing with $f(0)=0$, then we have

$$f(x_1)+f(x_2)-f(x_3)-f(x_4)\leq f(|x_1+x_2-x_3-x_4|)$$

if $x_1\vee x_2\geq x_3\vee x_4$ and $x_3+x_4\geq x_1\wedge x_2$, or

$$f(x_1)+f(x_2)-f(x_3)-f(x_4)\leq f(|x_1\wedge x_2-x_3\wedge x_4|)$$

if $x_1\vee x_2<x_3\wedge x_4$.

According to this correction, Theorem 3 is not valid when $N\geq 2$ without a slight restriction. From the conditions of Theorem 3, it is necessary that the exponent α of *n.r.v.f.* $\sigma(x)$ is less than or equal to 1/2. In case of $0<\alpha<1/2$, (8. 49) is still valid by virtue of the relation $(x_1\wedge x_2)|\sigma^2(x_1)-\sigma^2(x_2)|\leq|x_1-x_2|\sigma^2(x_1\vee x_2)$. But in case of $\alpha=1/2$, I cannot prove that the estimate (8. 49) is true or not. Nevertheless in case of $\sigma(x)=|x|^{\alpha}$, $0<\alpha\leq 1/2$, Theorem 3 is true since metric $\sigma^2(|x-y|)$ has four point property.

Remark. The conditions of Theorem 7 do not need to be changed and other results coming from Lemma 6 are still valid.

2. Since (8. 67) is not true, the last part of Theorem 4 must be changed into the following: $\varphi_\varepsilon(x)$ belongs to $\mathcal{L}^u(X)$ if $1+\varepsilon<\beta$. In case of $1+\varepsilon<\beta$, $\# L_{m,k}^{(1)}$ is less than a constant independent of m, n and k if $k\leq cn^{\varepsilon}$, therefore setting $L_m^{(2)}=\{(p,q)\in L_m;\ (\varphi_\varepsilon(r_{ij})\varphi_\varepsilon(r_{pq}))^{-1} \leq r_{pq}^{(m)}\leq 1-c/n^{1-\varepsilon}\}$, the estimate (8. 70) is still valid.

3. Other errata (erratum → correction)

p. 503 ↓ 11 $x^2/2 \to x^2/(2\log 2)$,

p. 505 ↑ 9 $a(x)\gg\frac{r}{\sqrt{\log 1/x}} \to a(x)\gg\frac{r}{\log 1/x}$,

p. 511 ↑ 9 Add $\|t_0-t\|\leq 2\varepsilon_n$ to (7. 9),

p. 512 ↑ 15 $\sigma^2(4/5\cdot\varepsilon_n) \to \sigma(\varepsilon_n)$,

p. 518 ↓ 6 (8. 25) is still valid by Lemma 6, (i) under the new conditions.

p. 520 ↓ 8 Omit the sentence "if $r_{jq}>2r_{ip}$. If $r_{ip}>r_{jq}$,······(i, p) and (j, q).

p. 525 ↑ 12 $\sqrt{2\{(\log_{(2)}1/x)\vee(F_\sigma(x)/\sigma(x))\}}$
$\to \sqrt{2\{(\log_{(2)}1/x)\vee(F_\sigma(x)/\sigma(x))^2\}}$,

p. 530 ↑ 10 $1-k/n\leq r_j^{(m)}\leq 1-(k-1)/n$
$\to 1-k/\log n\leq r_j^{(m)}\leq 1-(k-1)/\log n$,

p. 531 ↑ 16 $\sqrt{\frac{k}{c_{98}n}} \to \sqrt{\frac{k}{c_{98}\log n}}$,

p. 533 ↑ 6 $\bar{\sigma}(x)\sqrt{\log 1/x}\leq c_{107} \to \bar{\sigma}(x)\leq c_{107}\sqrt{\log 1/x}$.

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