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CORRECTION

PROBABILITY INEQUALITIES FOR EMPIRICAL PROCESSES AND A LAW OF THE ITERATED LOGARITHM

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All numbered statements and theorems mentioned but not included here come from Alexander (1984), unless otherwise stated.

In Corollary 2.2, the exponent on n is incorrect for $r > 2$; (2.7) should read

$$M \geq \begin{cases} K_1 n^{(r-2)/2(r+2)} \vee K_2 \alpha^{(2-r)/4} & \text{if } r < 2, \\ K_3 L n & \text{if } r = 2, \\ K_4 n^{(r-2)/2r} & \text{if } r > 2. \end{cases}$$

In Corollary 2.5, therefore, the exponent on n should be $(r-2)/2r$, not $(r-2)/2(r+2)$, for classes of functions with $r > 2$. Corollary 2.5 is correct as it stands for classes of sets. We wish to thank P. Massart and M. Talagrand, whose comments led to discovery of this error.

In the proof of Theorem 2.3, it is legitimate to assume $\delta_0 > s := (EM/16n^{1/2})^{1/2}$ when bounding $\mathbb{P}_2$, but not when bounding $\mathbb{P}_3$ as is done implicitly by the use of the word "similarly." Therefore, Theorem 2.3 is valid only under the additional assumption that $t_0 > s$. To handle the case $t_0 \leq s$, we need the following.

THEOREM 2.3a. *Let $M > 0$ and let $\mathscr{C}$, ψ, n, ε, α and t_0 be as in Theorem 2.3. Let $s := (\varepsilon M/16n^{1/2})^{1/2}$ and suppose $t_0 \leq s$. If*

(i) $$\psi(M, n, \alpha) \leq 2\psi_1(M, n, \alpha)$$

and

(ii) $$M \leq \varepsilon n^{1/2}\alpha/16$$

then (2.10) *holds.*

PROOF. Set $\delta_0 := t_0$, and $\eta_0 := \varepsilon M/8$. Taking $N = 0$, we have $\mathbb{P}_1$ [of (3.1)] bounded as in (3.2) and $\mathbb{P}_2 = 0$. Since $t_0 \leq s$, $\mathbb{P}_3$ satisfies (3.6), and

$$M/n^{1/2}\delta_0^2 \geq 16/\varepsilon > 4$$

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