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ERRATUM

Translated Poisson Approximation for Markov Chains

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The geometrically small part of the error term in Lemma 4.1 was incorrectly treated in (4.7), and, as a result, the definition of the quantity b_i in the lemma needs to be altered to:

$$\begin{aligned} b_i &:= \tilde{\varphi}(n)\Big\{\tfrac{1}{2}\mathbb{E}\big\{|Y_i(A_i - A_i')|(|A_i| + |A_i'|)\big\} \\ &\quad + \mathbb{E}\big\{|Y_i(A_i - A_i')|(H(T_i^+ - i) + H(i - T_i^-))\big\} \\ &\quad + \mathbb{E}\big\{|Y_i(A_i - A_i')|\big\}\big\{\mathbb{E}|A_i| + \mathbb{E}(H(T_i^+ - i) + H(i - T_i^-))\big\}\Big\} \\ &\quad + \gamma_i, \end{aligned}$$

where, for $1 \le i \le n/2$,

$$\gamma_i = 2\mathbb{E}\big\{|Y_i(A_i - A_i')|(I[T_i^+ - i > n/4] + \mathbb{P}[T_i^+ - i > n/4])\big\}, \quad 1 \le i \le n/2;$$
$$\gamma_i = 2\mathbb{E}\big\{|Y_i(A_i - A_i')|(I[i - T_i^- > n/4] + \mathbb{P}[i - T_i^- > n/4])\big\}, \quad n/2 < i \le n.$$

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The quantity $\tilde{\varphi}(n)$ is smaller than the quantity $\varphi(n)$ appearing in the original statement of the lemma, and hence is still of the desired order $O(n^{-1/2})$ under assumption (3.7). The term γ_i is typically very much smaller.

Changing Lemma 4.1 leads to a minor change in the specification of the bound in Theorem 4.2, again without altering the main contribution. The remainder of the paper is unchanged. A corrected version, giving the proof of the new version of Lemma 4.1, is to be found at

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