Erratum

ERRATUM TO: DIFFERENTIAL CALCULUS FOR LINEAR OPERATORS REPRESENTED BY FINITE SIGNED MEASURES AND APPLICATIONS

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We have been aware of an error in the proof of Lemma 8.1 in [1], once this paper was published online. As a consequence, Lemmas 8.1 and 8.3, and Theorem 8.2 need to be corrected as follows.

LEMMA 8.1. *Let $\alpha > 0$. For any $m \in \mathbb{N} \cup \{0\}$, we have*

$$|E(e^{-X_\alpha} - 2^{-1})^m| \leq 2^{-m}.$$

PROOF. It suffices to observe that the random variable e^{-X_α} takes values in $[0, 1]$. $\square$

LEMMA 8.3. *Let $M \in \mathbb{N}$. For any nonnegative integer $m \leq bM - 1$, with $b = \log 2 / \log \frac{5}{4}$, we have*

$$\frac{1}{2^{m+1}} P(Z_{m+1}(2^{-1}) \geq bM - (m+1)) \leq 2^{-M}.$$

For any $m \in \mathbb{N} \cup \{0\}$, we have

$$P(Z_{m+1}(2) \geq b(M+m+1)) \leq 2^{-M}.$$

PROOF. It follows along the lines of that in Lemma 8.3 in [1]. $\square$

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LEMMA 8.2. *Let $z = \alpha + i\beta$, $\alpha > 0$, $\beta \in \mathbb{R}$. For any positive integer $M \geq \lceil |\beta| \rceil$, we have*

$$|\eta(z) - P_M(z)| \leq (M+1)2^{-(M-1)},$$

where the approximant $P_M(z)$ is defined by

$$\begin{aligned} & P_M(z) \\ &= \sum_{m=0}^{\lceil |\beta| \rceil - 2} E\Delta^m \phi_\beta(Z_{m+1}(2^{-1})) 1_{\{Z_{m+1}(2^{-1}) < b(M+m+1)\}} E(e^{-X_\alpha} - 2^{-1})^m \\ &+ \sum_{m=\lceil |\beta| \rceil - 1}^{M-1} E\Delta^m \phi_\beta(Z_{m+1}(2^{-1})) 1_{\{Z_{m+1}(2^{-1}) < bM-(m+1)\}} E(e^{-X_\alpha} - 2^{-1})^m. \end{aligned}$$

PROOF. Taking into account Lemmas 8.1 and 8.3 above, the proof follows along the lines of that in Theorem 8.2 in [1]. $\square$

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References

- [1] J. A. Adell, Differential calculus for linear operators represented by finite signed measures and applications, *Acta Math. Hungar.* Published online (2012). doi:[10.1007/s10474-012-0230-7](https://doi.org/10.1007/s10474-012-0230-7).