Bernstein Functions: Theory and Applications (2nd edition)

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by

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List of misprints and smaller additions for the 2nd edition. Date: February 16, 2020.

PAGE, LINE	READS	SHOULD READ
p. 36, l. 7/8 above	*delete the words* "if it is hermitian, i.e. $f(s^*) = \overline{f(s)}$, and"	*Comment:* In fact, a function f satisfying the condition (4.2) for all $n \in \mathbb{N}$, $s_1, \dots, s_n \in S$ and $c_1, \dots, c_n \in \mathbb{C}$ is **automatically** hermitian. Therefore, it is not necessary to require this in the statement. The proof that (4.2) implies the hermitian property of f is exactly the argument used in the proof of Lemma 4.2: Observe that (4.2) means that the matrix $F = \big(f(s_j) + \overline{f(s_k)} - f(s_j + s_k^*)\big)_{j,k=1}^n$ is a hermitian matrix, i.e. $\overline{F} = F^\top$. For $n = 2$, $s_1 = 0$ and $s_2 = s$ we get $\begin{pmatrix} f(0) & f(s) + f(0) - f(s) \\ f(0) + \overline{f(s)} - f(s^*) & f(s) + \overline{f(s)} - f(s+s^*) \end{pmatrix}$ $= \begin{pmatrix} f(0) & f(0) + \overline{f(s)} - f(s^*) \\ f(0) & f(s) + \overline{f(s)} - f(s+s^*) \end{pmatrix}^\top$ $= \overline{\begin{pmatrix} f(0) & f(0) + \overline{f(s)} - f(s^*) \\ f(0) & f(s) + \overline{f(s)} - f(s+s^*) \end{pmatrix}}$ $= \begin{pmatrix} \overline{f(0)} & \overline{f(0)} + f(s) - \overline{f(s^*)} \\ \overline{f(0)} & \overline{f(s)} + f(s) - \overline{f(s+s^*)} \end{pmatrix}$ If we compare the top left entries we get $f(0) = \overline{f(0)}$ and for the bottom left entries we then get $\overline{f(s)} = f(s^*)$.
p. 57, l. 5 above	$0 < \alpha \le 1$	$0 < \alpha < 1$

continues on next page

PAGE, LINE	READS	SHOULD READ
		An additional comment: If $\alpha = 1$ the two integrations lead to $f(\lambda) = f''(1)(\lambda \log \lambda - \lambda) + f''(1)C\lambda$. Since this function grows faster than any linear function, this is not a Bernstein function, ruling out the case $\alpha = 1$.
p. 61, l. 13 above, Theorem 5.22 (i)	$f = \mathcal{L}\pi$	$e^{-f} = \mathcal{L}\pi$
p. 73, l. 5 above, (6.2)	$\frac{2}{\pi}\int_{-\infty}^{\infty} \frac{\mathrm{Im} f_n(-s+ih)}{(s+z)^3}\, ds$	$-\frac{2}{\pi}\int_{-\infty}^{\infty} \frac{\mathrm{Im} f_n(-s+ih)}{(s+z)^3}\, ds$
p. 74, l. 11 above	$\frac{2}{\pi}\int_{-\infty}^{\infty} \cdots ds$	$-\frac{2}{\pi}\int_{-\infty}^{\infty} \cdots ds$
p. 74, l. 8 below	$\int_{-\infty}^{\infty} \cdots \Pi(ds)$	$-\int_{-\infty}^{\infty} \cdots \Pi(ds)$
p. 77, l. 9 below	$\mathbb{C} \setminus (-\infty, 0]$	$\mathbb{C} \setminus \mathbb{R}$
p. 106, l. 7 above	$\gamma \in (0, 1-\alpha]$	$\gamma \in [\alpha, 1-\alpha]$
p. 127, l. 2 after Table 9.1	$\log\left(1 + \frac{\lambda}{a_n}\right) - \log\left(1 + \frac{\lambda}{b_n}\right)$	$\log\left(1 + \frac{\lambda}{b_n}\right) - \log\left(1 + \frac{\lambda}{a_n}\right)$ (i.e. sign error)
p. 218, (13.30) below	$A^f I_k$	$A^f I_k u$
p. 218, (13.31) below	$I_k A^f$	$I_k A^f u$
p. 225, l. 10 below	$\mathrm{Im}[(f(z) - f_k(z))/f(z)]$	$\mathrm{Im}[(f(z) - f_k(z))/f_k(z)]$
p. 320, entry 37	$\frac{\log(\sqrt{a\lambda}+\sqrt{b})}{\sqrt{\lambda}}$	$\sqrt{\lambda}\log(\sqrt{a\lambda}+\sqrt{b})$