Bernstein Functions: Theory and Applications (1st edition)

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by

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List of misprints and smaller additions for the 1st edition. Date: December 1, 2022.

PAGE, LINE	READS	SHOULD READ
p. 20, l. 14 below	$(1-e^{-\lambda t})/\lambda = \int_0^1 e^{-\lambda s}\,ds$	$(1-e^{-\lambda t})/\lambda = \int_0^t e^{-\lambda s}\,ds$
p. 32, l. 16 below	Lemma 4.6	Corollary 4.6
p. 40, l. 9 below	$\alpha \in [0,1]$	$\alpha \in (0,1]$
p. 40, l. 2 below	$\alpha \in [0,1]$	$\alpha \in (0,1]$
p. 41, l. 15 above	$\alpha \in [0,1]$	$\alpha \in (0,1]$
p. 42, l. 8 above	$\alpha \in \mathbb{R}$	$\alpha \in \mathbb{R} \setminus \{0\}$
p. 42, l. 15 above	$0 < \alpha \leq 1$	$0 < \alpha < 1$
		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. 42, l. 13 below	$f(\lambda) := \log g(\lambda)$	$f(\lambda) := -\log g(\lambda)$
p. 53, l. 2 above (6.2)	$\frac{2}{\pi}\int_{-\infty}^{\infty} \cdots ds$	$-\frac{2}{\pi}\int_{-\infty}^{\infty} \cdots ds$
p. 54, l. 6 above	$\frac{2}{\pi}\int_{-\infty}^{\infty} \cdots ds$	$-\frac{2}{\pi}\int_{-\infty}^{\infty} \cdots ds$
p. 54, l. 15 above	$\int_{-\infty}^{\infty} \cdots \rho(ds)$	$-\int_{-\infty}^{\infty} \cdots \rho(ds)$

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p. 59, l. 11 below	and ρ' is a measure on $(0,\infty)$ such that $\rho'[1,\infty)<\infty$.	and ρ' is a measure on $[0,\infty)$ such that $\rho'[0,\infty)<\infty$.
p. 60, l. 10 above	$\mathcal{CBF}\cap\{f\ :\ f(0+)>0\}=e^{\mathbb{R}+\mathcal{CBF}}=(0,\infty)\times e^{\mathcal{CBF}}$.	$\mathcal{CBF}\cap\{f\ :\ f(0+)>0\}\subset e^{\mathbb{R}+\mathcal{CBF}}=(0,\infty)\times e^{\mathcal{CBF}}$.
p. 60, l. 15 above	whereas $k\in\mathcal{CM}$ if $f\in\mathcal{CBF}$.	whereas $k\in\mathcal{BF}$ if $f\in\mathcal{CBF}$.
p. 64, l. 18 below	$m(t)=\mathscr{L}(s\sigma(s);dt)$	$m(t)=\mathscr{L}(s\sigma(s);t)$
p. 79, l. 4 above	Bonedesson	Bondesson
p. 89, l. 6 above	$\log\left(1+\frac{\lambda}{a_n}\right)-\log\left(1+\frac{\lambda}{b_n}\right)$	$\log\left(1+\frac{\lambda}{b_n}\right)-\log\left(1+\frac{\lambda}{a_n}\right)$ (i.e. sign error)
p. 116, l. 4 above	$f(-A)$	$f(-A)u$
p. 129, l. 6 above	matrix monotone function f	matrix monotone functions f
p. 140, l. 5 below	$T^B_{t-s}(B-A)T^A_s$	$T^B_{t-s}(A-B)T^A_s$
p. 150, l. 16 below,	$\Im[(f(z)-f_k(z))/f(z)]$	$\Im[(f(z)-f_k(z))/f_k(z)]$
p. 155, l. 7 above	$=f(s)\int_0^{1/s}u(t)\,dt+\int_{1/s}^{\infty}\big(u(t-1/s)-u(t)\big)\,dt$	$=f(s)\left[\int_0^{1/s}u(t)\,dt+\int_{1/s}^{\infty}\big(u(t-1/s)-u(t)\big)\,dt\right]$
p. 157, l. 4 above	$f,g\in\mathcal{BF}$	$f,g\in\mathcal{SBF}$
p. 161, l. 9 below	$\mathcal{E}_\beta(u,v):=\mathcal{E}(u,v)+\langle u,v\rangle_{L^2}$	$\mathcal{E}_\beta(u,v):=\mathcal{E}(u,v)+\beta\langle u,v\rangle_{L^2}$
p. 168, l. 7 above	$h\in L^\infty(D,\mathscr{C},m)$	$h\in L^1(D,\mathscr{C},m)$
p. 168, l. 9–13 below	On the other hand, for every $x\in D$, we have $\left(P^{f,D}_{t/2}g(x)-P^{f,D}_{t/2}g_{n_j,K}(x)\right)^2$ $=\left(\int_D p^{f,D}(t/2,x,y)\big(g(y)-g_{n_j,K}(y)\big)\,m(dy)\right)^2\le 4K^2.$ Thus by the weak convergence of the sequence $(g_{n_j,K})_{j\in\mathbb{N}}$ and the dominated convergence theorem we get that $P^{f,D}_{t/2}g_{n_j,K}(x)\xrightarrow{j\to\infty}P^{f,D}_{t/2}g(x)$ for every $x\in D$.	On the other hand, for every $x\in D$, we have $P^{f,D}_{t/2}g(x)-P^{f,D}_{t/2}g_{n_j,K}(x)$ $=\int_D p^{f,D}(t/2,x,y)\big(g(y)-g_{n_j,K}(y)\big)\,m(dy).$ Thus by the weak convergence of the sequence $(g_{n_j,K})_{j\in\mathbb{N}}$ and the fact that $p^{f,D}(t/2,x,\cdot)$ is integrable, we get that $P^{f,D}_{t/2}g_{n_j,K}(x)\xrightarrow{j\to\infty}P^{f,D}_{t/2}g(x)$ for every $x\in D$.

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PAGE, LINE	READS	SHOULD READ
p. 179, l. 5 above	harmonic function	harmonic functions
pp. 201–2, header of table	$A = \frac{d}{dm}\frac{d}{dx}$	$A = \frac{d}{dm}\frac{d}{ds}$
p. 201, before table	*insert the following text before the table* ⟶	Let $Y = (Y_t)_{t\geq 0}$ be a reflected diffusion on $[0,\infty)$ with the speed measure m and the scale function s normalized such that $s(0) = 0$. The infinitesimal generator of Y is $\frac{d}{dm}\frac{d}{ds}$. The process $s(Y) = (s(Y_t))_{t\geq 0}$ is also a reflected diffusion on $[0,\infty)$ having the same local time at 0 as Y. Therefore, the Laplace exponents of the inverse local times coincide. Let $\widetilde{m} = m \circ s^{-1}$. The generalized diffusion X corresponding to the string $\widetilde{m}$ and the process $s(Y)$ have the same infinitesimal generator $A = \frac{d}{d\widetilde{m}}\frac{d}{dx}$. This shows that functions in the left column of the table below are densities of Lévy measures of the inverse local time at zero of generalized diffusions.
p. 234, entry 37	$\frac{\log(\sqrt{a\lambda}+\sqrt{b})}{\sqrt{\lambda}}$	$\sqrt{\lambda}\log(\sqrt{a\lambda}+\sqrt{b})$
p. 252, entry 78	Theorem 1.3 of [211], 5.15(9) of [91]	Theorem 1.3 of [211], 5.15(8), (9) of [91]
p. 374, formula (A.3)	*add the following condition*	$\sup_{n\in\mathbb{N}} \mu_n(E) < \infty$
p. 302, item [193]	On sojurn times, ...	On sojourn times, ...

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