Brownian Motion — An Introduction to Stochastic Processes

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by

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List of misprints and smaller additions to the present text. Date: October 7, 2021.

PAGE, LINE	READS	SHOULD READ
p. 6, l. 10 above	$X \sim N(0,1)$	$X \sim N(0,\sigma^2), \mathbb{V}X = \sigma^2$
p. 16, l. 10 below	$\Omega^W \cap \mathscr{A}$, a a Brownian motion	$\Omega^W \cap \mathscr{A}$, a Brownian motion
p. 17, l. 5 below	$B(t_j)$	$B(t)$
p. 53, l. 1 below	$b^2\mathbb{P}(B_\tau = -a)$	$b^2\mathbb{P}(B_\tau = b)$
p. 75, l. 10/11 below	$(B_u - B_t)$ (4 times)	$f(B_u - B_t)$ (4 times)
p. 102, l. 3 above	$\alpha U_\alpha \in \mathcal{C}_\infty(\mathbb{R}^d)$	$\alpha U_\alpha u \in \mathcal{C}_\infty(\mathbb{R}^d)$
p. 108, l. 12 below	$\mathbb{E}\tau_{\overline{\mathbb{B}}^c(x,r)}$	$\mathbb{E}^x\tau_{\overline{\mathbb{B}}^c(x,r)}$
p. 111, Prob. 5(d)	$\|P_t u - u\|_{L^p}$	$\|\tilde{P}_t u - u\|_{L^p}$
p. 111, Prob. 8(b)	$\inf u_n(x) = \mathbb{1}_K$	$\inf_n u_n(x) = \mathbb{1}_K(x)$
p. 112, Prob. 11	*add the following:*	such that $\mathfrak{D}(B) \subset \mathfrak{D}(A)$.
p. 112, Prob. 11(a)	*add the following:*	on $\mathfrak{D}(B)$.
p. 120, l. 3/4 below	unique solution	unique solution (in the class of functions which do not grow faster than $e^{\alpha t}$)
p. 121, l. 5 above	that A has a resolvent	that L has a resolvent
p. 123, l. 4 below	$u \in \mathcal{C}_c(\mathbb{R})$	$u \in \mathcal{C}_c^\infty(\mathbb{R})$
p. 124, l. 2 above	$f = f_n$	$f = \chi_n$
p. 133, l. 14 above	$\mathbb{B}(x,\delta) \subset D$	$\overline{\mathbb{B}}(x,\delta) \subset D$
p. 137, l. 13 above	$\dots < t_n \le t$	$\dots < t_n = t$
p. 144, l. 3 below	$\mathbb{E}X_t^4 < \infty$	$X_t - X_s \in L^4$
p. 171, l. 10 above	$B_{\frac{1}{n}}$	$B_{\frac{b-a}{n}}$
p. 249, l. 11 above	$T > 0$	$T \in (0,\infty)$
p. 249, l. 7 below	$\int_s^t \|b_j(s,\omega)\|\,ds$	$\int_s^t \|b_j(r,\omega)\|\,dr$
p. 256, l. 6 blow	$g(\xi_\ell)\tau(t_{l-1})$	$g(\xi_l)\tau^2(t_{l-1})$
p. 256, l. 5 blow	$\mathscr{F}_{\tau_{l-1}}$ measurable	$\mathscr{F}_{t_{l-1}}$ measurable
p. 258, l. 7 above	$f : \mathbb{R}^m \to \mathbb{R}$ be a $\mathcal{C}^2$-function	$f : \mathbb{R}^m \to \mathbb{R}$ one has

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PAGE, LINE	READS	SHOULD READ
p. 259, l. 1 below	$\Sigma - \Sigma$	$\Sigma' - \Sigma'$
p. 272, l. 7 above	$\left(\mathbb{E} e^{\langle X \rangle}\right)^{1-c}$	$\left(\mathbb{E} e^{\frac{1}{2}\langle X \rangle_\infty}\right)^{1-c}$ (which is finite by (18.5))
p. 285, l. 3 below	$p\int_0^t \lvert X_s\rvert^{p-1}\, dX_s$	$p\int_0^t \operatorname{sgn}(X_s)\lvert X_s\rvert^{p-1}\, dX_s$
p. 289, Prob. 11	$\mathscr{G}_{\tau_s}$	$\mathscr{G}_t$
p. 301, l. 2	*add the following:*	and $\sup_{s\leq T}\mathbb{E}[\lvert X_s\rvert^2] < \infty$, $\sup_{s\leq T}\mathbb{E}[\lvert Y_s\rvert^2] < \infty$.
p. 314, line 8 below	$\lvert X_t^x - Y_t^y\rvert$	$\lvert X_t^x - X_t^y\rvert$
p. 321, Prob. 14(d)	$\partial_s u(x, X_s)$	$\partial_t u(x, X_s)$

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