Errata, as of May, 2018[1]

p. 9, 8dn: Change "$F \supseteq$" to "$F_\epsilon \subseteq$"

p. 14, 10dn: Change "isometry" to "bijection"

p. 17, 7up: Change "any $\alpha \in \mathbb{R}$" to "any $\alpha \in [0, \infty)$"

p. 18, 4up: Change "$C_R = 4R^3$" to "$C_R = 8R^3$"

p. 21, 2up: Change "a subset" to "a k-element subset"

p. 23, 12up: Change "$W_{2M}(2M)$" to "$W_{2M}(\omega)$"

p. 25, 10dn: Change "$B_{2(M-r)}^{2(M-r)}$" to "$B_{2n}^{2(M-r)}$"

p. 26, 6up: Change "2^{-n}" to "4^{-n}"

p. 27, 2dn: Change "$= M$" to "$= \frac{1}{M}$"

p. 28, eq. (1.2.29): Change "$P(B)$" to "$\mathbb{P}(B)$"

p. 32, 5dn: Change "$\prod_{n=1}^{N}$" to "$\prod_{n=m}^{N}$"

p. 32, 6dn: Change "(1.1.11)" to "(1.1.12)"

p. 33, 15up: Change "$k \in \mathbb{Z}$" to "$k \in \mathbb{Z}^+$"

p. 34, 2up: Change "$\mathbb{P}_q(A) = \mathbb{P}_q$" to "$\mathbb{P}_q(A) = \mathbb{P}_p$"

p. 35, 12up: Change "Exercise 1.2.38" to "Exercise 1.2.40"

p. 35, 4up: Change "$\alpha^m\big(1 - \frac{\alpha}{n}\big)^{n-m}$" to "$\big(1 - \frac{\alpha}{n}\big)^{n-m}$"

p. 38, 3dn: Change "$\zeta_k^{(1)}$" to "$\zeta_{N-n}^{\{1\}}$"

p. 38, 3 & 2up: Change "$\rho^{(m-1)}$" to "$\rho_N^{(m-1)}$"

p. 39, 2up: Change "$\sum_{r=0}^{\infty}$" to "$\sum_{r=1}^{\infty}$"

p. 40, 2dn & 4dn: Change "$\frac{1-\sqrt{1-4pqx}}{2q}$" to "$\frac{1-\sqrt{1-4pqx^2}}{2qx}$"

p. 45, 11dn: Change "(1.1.6)" to "(1.1.5)"

p. 45, 13dn: Change "(1.1.5)" to "(1.1.6)"

p. 45, 15 & 16dn: Change "$X \geq \alpha - \frac{1}{n}$" to "$X \leq \alpha - \frac{1}{n}$"

[1]Most of these errors were found by Peter Landweber, to whom I am deeply indebted.

p. 46, 5dn: Change "(1.4.3)" to "(1.4.7)"

p. 50, 2up: Change "any h" to "any non-zero h"

p. 52, 12dn: Change "$[m, m+1]$" to "$(m, m+1)$"

pp. 55 & 56, 1up & 3dn: Change "§ 1.1.1" to "§ 1.1.2"

p. 57, 10up: Change "$\mu(B) = \mu(B)$" to "$\mu(B) = \mu(A)$"

p. 57, 8up: Change "$\mu(A \setminus B)$" to "$\mu(B \setminus A)$"

p. 58, 16up: Change "$A \cup B = (A \cap B) \cup \big(B \setminus (A \cap B)\big)$" to "$A \cup B = A \cup \big(B \setminus (A \cap B)\big)$"

p. 61, 3up: Change "$\sum_{A \in \mathcal{C}}$" to "$\sum_{C \in \mathcal{C}}$"

p. 64, 2dn: Change "let $\epsilon > 0$" to "let $F \in \mathfrak{F}(\Omega)$ and $\epsilon > 0$"

p. 64, 10 & 11dn: Change "$\mathbb{P}(B)$" to "$\tilde{\mathbb{P}}(B)$"

p. 65, 10dn: Change "$n \geq 1$" to "$m \geq 1$"

p. 67, 11up: Change "$T_x^{[0,1)}\mathbb{R}$" to "$T_x^{[0,1)} : \mathbb{R}$"

p. 69, 14up: Change "$\Gamma \in \mathcal{B}$" to "$\Gamma \in \mathcal{B}_{\mathbb{R}}$"

p. 69, 3up: Change "Borel measure" to "Borel measure on"

p. 71, 7dn: Change "$\mathcal{B}_R$" to "$\mathcal{B}_{\mathbb{R}}$"

p. 71, 15up: Change "$\lim_{s \nearrow u}$" to "$\lim_{v \nearrow u}$"

p. 72, 5dn: Change "(1.4.3)" to "(1.4.6)"

p. 72, 17up: Change display to

$$\rho(\xi, \eta) = \frac{1}{\pi} \left| \int_{\xi}^{\eta} \frac{1}{1+t^2}\, dt \right| = \frac{|\arctan \eta - \arctan \xi|}{\pi}$$

p. 79, 3dn: Change "every" to "everywhere"

p. 85, 1dn: Change "function f" to "function g"

p. 86, 18 & 14up: Change "non-negative" to "non-positive"

p. 87, 5dn: Change matrix on right to $\begin{pmatrix} \xi_2^2 & -\xi_1\xi_2 \\ -\xi_1\xi_2 & \xi_1^2 \end{pmatrix}$.

p. 88, 15dn: Change "$(E_1 \times E_2)$" to "$(E_1 \times E_2, \mathcal{F}_1 \times \mathcal{F}_2)$"

p. 93, 5dn: Change "$\mathbb{R}$-valued functions" to "$\mathbb{R}$-valued μ-integrable functions"

p. 93, 7–8dn: Change "show ... with respect to μ." to "show that $\{\varphi_n : n \geq 1\}$ is uniformly integrable with respect to μ if and only if φ and all the φ_n's are μ-integrable and $\int |\varphi_n - \varphi| \, d\mu \longrightarrow 0$."

p. 93, 8up: Change "measures" to "measure"

p. 93, 7up: Change "$\int g \, d\nu$" to "$\int f \, d\nu$"

p. 93, 4up: Delete "unless $\mu(E) < \infty$"

p. 97, 6dn: Change "$T_A \circ T_x = T_x \circ T_A$" to "$T_A \circ T_x = T_{Ax} \circ T_A$"

p. 99, 10dn: Change "$\int_{\mathbb{S}^{N-1}} \left(\int_{\mathbb{S}^{N-1}} \cdots \right.$" to "$\int_{\mathbb{S}^{N-1}} \left(\int_{(0,\infty)} \cdots \right.$"

p. 103, 5dn: Change "$(b_i^+ \wedge 1 - a_i^+)$" to "$(b_i^+ \wedge 1 - a_i^+ \wedge 1)$"

p. 103, 10dn: Change "$[0,1]^N$" to "$\mathbb{R}^N$"

p. 103, 7up: Change "the unit ball" to "Lebesgue measure of the unit ball"

p. 104, 2dn: Change "dx" to "ds"

p. 108, 8up–6up: Change "isomorphism" to "bijection." Also, the example of lexicographic ordering should be deleted because it does not give a bijection. However, it is well known that $\mathbb{N} \times \mathbb{N}$ is countable and therefore in one-to-one correspondence with $\mathbb{N}$.

p. 110, 8dn: Change "$\mathbb{E}^{\mathbb{P}}[Y, A_m]\mathbb{P}(A_m) = \mathbb{E}^{\mathbb{P}}[X, A_m]$" to "$Y(\omega)\mathbb{P}(A_m) = \mathbb{E}^{\mathbb{P}}[X, A_m]$ for $\omega \in A_m$"

p. 110, 15up & 14up: Change "$L^1(\mathbb{P}, \mathbb{R})$" to "$L^1(\mathbb{P}; \mathbb{R})$" on 15up and "$\Sigma$ measurable" to "Σ-measurable" on 14up

p. 112, 10dn: Change "$\mathbb{E}^{\mathbb{P}}[X|\Sigma]$" to "$X_\Sigma$"

p. 112, 16dn: Change "bounded" to "bounded by C"

p. 114, 5dn: Change "a.e." to "a.s"

p. 115, 2dn: Change "$\mathbb{E}^{\mathbb{P}}[X^p] \leq \mathbb{E}[X^p]^{1-\frac{1}{p}} \mathbb{E}^{\mathbb{P}}[Y^p]^{\frac{1}{p}}$" to "$\mathbb{E}^{\mathbb{P}}[X^p] \leq \frac{p}{p-1} \mathbb{E}[X^p]^{1-\frac{1}{p}} \mathbb{E}^{\mathbb{P}}[Y^p]^{\frac{1}{p}}$"

p. 115, 13dn: Change "$\mathbb{P}(B_{k_\ell,\ell})$" to "$\mathbb{P}(X \in B_{k_\ell,\ell})$"

p. 119, 1dn & p. 120, 2up: Change "Exercise 1.4.19" to "Exercise 1.4.20"

p. 121, 11 & 12dn: Change "$f(\lambda)$" to "$f_p(\lambda)$" once on each line.

p. 121, 12dn: Change "$e^{\lambda p}$" to "$e^{-\lambda p}$"

p. 121, 13dn: Change "$a, b \geq 0$" to "$a, b > 0$"

p. 122, 10dn: Change "$\sum_{x \in \text{Image}(X)}$" to '$\sum_{y \in \text{Image}(Y)}$"

p. 123, 6dn & 7dn: Change "if $[b+c, a+d]$" to "if $z \in [b+c, a+d]$" on 6dn and "$[b+c, b+d]$" to "$[a+d, b+d]$" on 7dn

p. 124, 1up: Change "$\sup_{n\geq 0}$" to "$\sup_{n\geq 1}$"

p. 125, 1up: Change "$n^{\frac{1}{8}}$" to "$n^{-\frac{1}{8}}$" and "$n^{-\frac{7}{2}}$" to "$n^{\frac{7}{2}}$"

p. 131, 8up: Change "ever point" to "every point"

p. 132, 8dn: Change "$\frac{2\|f\|_{\mathrm{u}}}{n}$" to "$\frac{4\|f\|_{\mathrm{u}}}{n}$"

p. 132, 15dn: This integral can be defined either as a Riemann-Stieltjes integral or as $\int_{[0,\infty)} f\, d\mu_F$ where μ_F is the measure determined by F as in § 2.3.3.

p. 132, 16dn: Change "$F : \mathbb{R} \longrightarrow [0,\infty)$" to "$F : [0,\infty) \longrightarrow [0,\infty)$"

p. 133, 10up: Change "$n^{-\alpha}$" to $n^{-\alpha^2}$"

p. 134, 2dn: Change "$|S_n|$" to "S_n"

p. 134, 7up: Change "§ 3.2" to "§3.3"

p. 136, 6dn: Change "§ 3.2.2" to "§ 3.3.2"

p. 136, 1up: Change "$\sum_{k=1}^{n}$" to "$\sum_{k=1}^{\ell}$" twice

p..137, 5up: Change the right hand side of displayed formula to

$$\left(\sqrt{\frac{2}{9\pi n}} + \frac{\epsilon}{6}\right) \|\varphi'''\|_{\mathrm{u}} + \mathbb{E}^{\mathbb{P}}\left[X_1^2,\, |X_1| \geq \epsilon n^{\frac{1}{2}}\right]$$

p. 138, 2dn: Change "$\mathcal{F} \times \mathcal{F}_{\mathbb{R}^n}$" to "$\mathcal{F} \times \mathcal{B}_{\mathbb{R}^n}$"

p. 138, 4dn: Change "$T_n = \sum_{k=1}^{n} X_k$" to "$T_n = \sum_{k=1}^{n} Y_k$"

p. 140, 5dn: Change "$C_{\mathrm{b}}(R;\mathbb{R})$" to "$C_{\mathrm{b}}(\mathbb{R};\mathbb{R})$"

p. 141, 4dn: Change to

$$\leq \left(\sqrt{\frac{2}{9\pi n}} + \frac{\epsilon}{6}\right) B_k + \mathbb{E}^{\mathbb{P}}\left[X_1^2,\, |X_1| \geq \epsilon n^{\frac{1}{2}}\right] A_k$$

p. 142, 15up: Change "$\sup_{x\in\mathbb{R}}(1+|x|^2)\sup_{\varphi\in S}|\varphi(x)|$" to "$\sup_{x\in\mathbb{R}}(1+|x|^2)^{-1}\sup_{\varphi\in S}|\varphi(x)|$"

p. 142, 2up: Change "$\breve{S}_n$" to "S_n"

p. 145, 9dn: Change "as the" to "as"

p. 145, 2up: Change "ω_{N-1}" to "ω_{N-2}" in the factor before the final integral

p. 146, 14up: Change "the matrix" to "the"

p. 150, 1up: Change "$\int$" to "$\int_\Gamma$" in final expression

p. 152, 9dn: Change "$= \mathbb{R}^N$ to "$= \mathbb{R}^M$"

p. 152, 10dn: Following "$\tilde{X} = (X_1, \ldots, X_M)$", add "where $X_{N+1}, \ldots, X_M$ are mutually independent $N(0,1)$ random variables that are independent of $X = (X_1, \ldots, X_N)$"

p. 152, 13dn: Change "$\mathbf{e}_1, \ldots, \mathbf{e}_M \perp \mathrm{Ker}(\Sigma)$" to "$\mathbf{e}_1, \ldots, \mathbf{e}_M$ whose span contains $\mathrm{Ker}(\Sigma)^\perp$"

p. 155, 16up: Change "$6M^4$" to "$3M^4$"

p. 156, 1up: Change "non-degenerate" to "non-singular"

p. 160, 2dn: Change to

$$\rho^{(1)}(\omega) = \inf\{n \geq 1 : W_n(\omega) = 0\} \text{ and}$$
$$\rho^{(m+1)}(\omega) = \inf\{n > \rho^{(m)}(\omega) : W_n(\omega) = 0\} \text{ for } m \geq 1.$$

p. 160, 12up: Change "Exercise 3.1.19" to "Exercise 3.3.19"

p. 160, 5up: Change "$\zeta^{(k)}$" to "$\zeta^{\{k\}}$"

p. 160, 1up: Change "$(-4)^{n+1}$" to "$-(-4)^{n+1}$"

p. 161, 3dn: Change "$\left[0, \frac{1}{4}\right]$" to "$\left(0, \frac{1}{4}\right]$"

p. 161, 7dn: Change "$0 \leq m \leq n$" to "$0 \leq m \leq n$ and $k \geq 1$"

p. 161, 7up: Change "$p < \frac{1}{2}$" to "$p \leq \frac{1}{2}$"

p. 162, 12 & 10up: Change "$e^{\zeta\{1\}}$" to "$e^{\lambda\zeta\{1\}}$" and "$e^{\zeta\{-1\}}$" to "$e^{\lambda\zeta\{-1\}}$"

p. 162, 10up: Change "$\zeta^{(1)} < \infty$" to "$\zeta^{\{1\}} < \infty$"

p. 163, 5dn: Change "$(p \wedge q)^{m-1}$" to "$(2(p \wedge q))^{m-1}$"

p. 163, 18up: Change "$u_{n-1}(m+1)$" to "$u_{n-1}(m)$"

p. 165, 13up: Change "$2qe^{2\lambda}$" to "$2qe^{\lambda}$" in denominator

p. 168, 5up: Change "measure" to "measures"

p. 169, 7up: Change "$\mathbb{P}(X_1 \in \Gamma_1, \ldots, X_n \in \Gamma_n)$" to "$\mathbb{P}(X_0 \in \Gamma_0, \ldots, X_n \in \Gamma_n)$"

p. 172, 1dn & 8dn: Change "$B(E; \mathcal{B})$" to "$B(E, \mathbb{R})$"

p. 172, 12up: Change "$''V(\nu, \nu)$" to "$V(\mu, \nu)$"

p. 175, 2up: Change "that fact" to "the fact"

p. 177, 3dn: Change "$B(E;\mathcal{B})$" to "$B(E,\mathbb{R})$"

p. 180, 10dn: Change "$\sum_{k\in e}$" to "$\sum_{k\in E}$"

p. 181, 4dn: Change "E^m" to "E^{m+1}"

p. 181, 13up: Change "writen of" to "written as"

p. 182, 6up: Change "$\rho^{(1)} = n$" to "$\rho^{(1)}(\omega) = m$"

p. 183, 4, 6, 7, 12dn & 7, 4up: Change "$\rho_i^{(i)}$" to "$\rho_i^{(1)}$"

p. 183, 6dn & 7, 4up: Change "$\mathbb{E}^{\mathbb{P}_k}$" to "$\mathbb{E}^{\mathbb{P}_i}$" several times

p. 184, 5dn: Change "$\sum_{m=0}^{\infty}$" to "$\sum_{n=0}^{\infty}$"

p. 188, 4up: Change "$\rho^{(i)}$" to "$\rho_i^{(1)}$"

p. 194, 16up: Change "$P : [0,\infty) \times E \longrightarrow [0,1]$" to "$P : [0,\infty) \times E \times \mathcal{B} \longrightarrow [0,1]$"

p. 196, 17up: Change "$\sum_{m=0}^{n}$" to "$\sum_{m=1}^{n}$"

p. 202, 15dn: Change "(a.s.$\mathbb{P}$)" to "(a.s., $\mathbb{P}$)"

p. 205, 17dn & p. 206, 9dn: Change "$\sum_{n=0}^{\infty}$" to "$\sum_{n=1}^{\infty}$"

p. 208, 1dn: Change "$m + \frac{\eta}{2} \geq 0$" to "$\left(m + \frac{\eta}{2}\right) \wedge \left(m' + \frac{\eta'}{2}\right) \geq 0$"

p. 212, 3up: Change "$(t_1^{-1} \wedge t_j^{-1})$" to "$(t_i^{-1} \wedge t_j^{-1})$"

p. 219, 19up: Change "numbers of" to "number of"

p. 222, 8up: Change "$\left(B\left(\frac{m+1}{n}\right) - B\left(\frac{m}{n}\right)\right)$" to $\left(B\left((m+1)2^{-n}\right) - B\left((m)2^{-n}\right)\right)$"

p. 223, 2dn: Change to "$\int_0^t U_\alpha(\tau, x)\, d\tau$"

p. 223, 5dn: Change "$e^{\alpha(t-\tau)}$" to "$e^{\alpha(\tau-t)}$"

p. 223, 8up: Change to "$P(t, x\Gamma) = \gamma_{e^{-\alpha t}x, V_\alpha(t)}(\Gamma)$"

p. 224, 8up: Change "Brownain" to "Brownian"

p. 225, 2dn: Change "[9]" to "[15]"

p. 249, 8up: Change "$n \geq 0$" to "$n \geq 1$"

p. 253, 9up: Part (**ii**) is misstated. It should be the statement that if $p \in \left(\frac{1}{2}, 1\right)$ and $\lambda_p = -\log(4pq)$, then $\lambda_p > 0$ and $\mathbb{E}^{\mathbb{P}_p}\left[e^{\lambda_p \zeta^{\{k\}}}\right] \leq \left(\frac{p}{q}\right)^{\frac{k}{2}}$.

p. 254, 2dn: Change "$\mathbb{E}^{\mathbb{P}_p}\left[e^{-\lambda_p(\alpha)\zeta^{\{k\}}}\right]$" to "$\mathbb{E}^{\mathbb{P}_p}\left[e^{-\ell_p(\alpha)\zeta^{\{k\}}}\right]$"

p. 254, 4dn: Change "$\frac{1-\sqrt{1-2pqe^{2\lambda}}}{2qe^{2\lambda}}$" to "$\frac{1-\sqrt{1-2pqe^{2\lambda}}}{2qe^{\lambda}}$"

p. 255, 14up: Change "a Brownian motion" to "is a Brownian motion"

p. 265, 9dn: Change "martingale" to "martingales"

p. 266, 10–11dn: Change "exists" to "exits"

p. 270, 1up: Change "differential" to "differentiable"

p. 271, 19dn: Change "$\zeta(\omega) \le t \implies \zeta(\omega) = \zeta(\omega^t)$" to "$\zeta(\omega) \le t \iff \zeta(\omega) = \zeta(\omega^t) \le t$"