Errata for the Book

Percy H. Brill, Level Crossing Methods in Stochastic Models, Springer, New York, 2008.

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1. **http://web2.uwindsor.ca/math/hlynka/brillbook.html**
2. **http://www.springer.com/math/book/978-0-387-09420-5**

Technical Typos

1. P6,L2. $f_{n+1}(x) = \lambda(P_{n+1}(0) - \lambda P_n(0)B(x)) \to f_{n+1}(x) = \lambda(P_{n+1}(0) - P_n(0)B(x))$.
2. P11,L11↑. Subsection 1.4 → Subsection 1.5.1.
3. P14,L12. $\lim_{t\to\infty}\frac{\mathcal{I}(\{0\}}{t} \to \lim_{t\to\infty}\frac{\mathcal{I}(\{0\})}{t}$.
4. P14,L3↑. probability $o(h) \to$ probability $\lambda h + o(h)$.
5. P14,L1↑. $\frac{E(\mathcal{D}_t(x+h))\cdot h\cdot(1-\lambda h)+o(h)}{t}$. The limiting proportion ... $\to$ $\frac{E(\mathcal{D}_t(x+h))\cdot h\cdot(1-\lambda h)+o(h)}{t}$. (The numerator $o(h)$ includes the expected time sample path is in $(x, x+h)$ during $(0,t)$ due to sojourns $\neq h$.) The limiting proportion ... .
6. P22,L13↑. ... of dosing. → ... of dosing (Fig. 10.2).
7. P30, Definition 2.4, 3^{rd} line. $X(t_0^-) - \theta d_{t_0}(1-\theta)u_{t_0} \in \boldsymbol{T}\times\boldsymbol{A}^c \to X(t_0^-) - \theta d_{t_0} + (1-\theta)u_{t_0} \in \boldsymbol{T}\times\boldsymbol{A}^c$.
8. P49,L2↑ and P50, L1 below Fig. 3.1. $F_{d_1}(0) \to F_{d_1}^{n-1}(0)$.
9. P51,L1↑. (Theorem 3.1) → (Theorems 3.1, 3.2 below).
10. P53,L4 & L6 below Fig. 3.2, and in the caption of Fig. 3.3. $D_t(x) \to \mathcal{D}_t(x)$.
11. P53,L4↑. Theorems 4.1 and 4.1 → Theorem 4.1, Section 4.2.1 and Theorem 4.4, Section 4.6.16.
12. P70,L4. $e^{(\mu-\lambda)x} \to e^{-(\mu-\lambda)x}$.
13. P82,L5. *(e.g., [50])* → *(e.g., [49]).* [reference should be [49]]
14. P87, formula (3.90) & one line above it. $e^{(\mu-\lambda)x} \to e^{-(\mu-\lambda)x}$.
15. P94, formula (3.110), notation. $\mathcal{D}_{d(y)}(x) \to \mathcal{D}_{d_y}(x)$.
16. P106,L2. $f0) \to f'(0)$.
17. P116, formula (3.151). $x \in (m, (m+1)D) \to x \in (mD, (m+1)D)$.
18. P150,L2 of Remark 3.34. $f_1(x)/ \to f_1(x)$.

19. P156, formula (3.203). $P_0 = \frac{\mu-\lambda}{\mu+e^{-(\mu-\lambda)K}} \rightarrow P_0 = \frac{\mu-\lambda}{\mu-\lambda e^{-(\mu-\lambda)K}}$.

20. P160, formula 3.210. $\sum_{k=1}^{\infty}\rho_1^{k-1} \rightarrow \sum_{k=1}^{\infty}\rho_1^{k-1}$.

21. P164,L2. (Definitions 2.2, 2.3, 2.4, 2.5). $\rightarrow$ (Definitions 2.2, 2.3, 2.4, 2.5 in Subsection 2.4.2).

22. P189,L1 of Proof of Corollary 4.2. In (4.18), (4.19), (4.20) and (4.19),$\rightarrow$ In (4.18), (4.19), (4.20) and (4.21),

23. P220,L6. if it were not blocked. $\rightarrow$ if it were not blocked and cleared.

24. P260,L2. rite $\rightarrow$ right.

25. P270,L5$\uparrow$. $\frac{1}{\lim_{t\to\infty}\mathcal{U}_t(x)} \rightarrow \frac{1}{\lim_{t\to\infty}\frac{\mathcal{U}_t(x)}{t}}$.

26. P286,L8. $f(x) = Ke^{=\gamma x} \rightarrow f(x) = Ke^{-\gamma x}$.

27. P302,L6 (below Fig. 6.1).
    $W(\tau_n) > y > x > W(\tau_n^-) > 0 \rightarrow\ W(\tau_n) > y > x > W(\tau_{n+1}^-) > 0$.

28. P306,L3-L4 in (6.12).
    L3. $\lambda\int_{z=0}^{x}\int_{s=t}^{t+h}\overline{B}(x-z)dsdF_{t+s}(z)\ \rightarrow\ \lambda\int_{s=t}^{t+h}\int_{z=0}^{x}\overline{B}(x-z)dF_s(z)ds$;
    L4. $\lambda h\int_{z=0}^{x}\overline{B}(x-z)dF_{t+s^*}(z) \rightarrow\ \lambda h\int_{z=0}^{x}\overline{B}(x-z)dF_{s^*}(z)$.

29. P311,L2 above formula (6.23). $\{D_t(x), t\geq 0\}\ \rightarrow\ \{\mathcal{D}_t(x), t\geq 0\}$.
    Formula (6.24). $E(d_{x)}\ \rightarrow\ E(d_x)$.

30. P312,L1$\uparrow$. $F(0) = P_o\ \rightarrow\ F(0) = P_0$.

31. P313,L5. as in formula (3.69) $\rightarrow$ as in formula (3.70).

32. P315, (a) L1, Section 6.3.2. $r(0^+)f(0) = P_0 > 0 \rightarrow\ r(0^+)f(0) = \lambda P_0 > 0$;
    (b) RHS of (6.38). $-\frac{r'(x)+\mu-\lambda}{r(x)} \rightarrow -\frac{r'(x)+\mu r(x)-\lambda}{r(x)}$;
    (c) RHS of (6.39). $\frac{\lambda P_0}{r(x)}e^{-(\mu-\lambda)\int_{y=0}^{x}\frac{dy}{r(y)}} \rightarrow\ \frac{\lambda P_0}{r(x)}e^{-\mu x+\lambda\int_{y=0}^{x}\frac{dy}{r(y)}}$; also in (6.40).

33. P336,L6$\uparrow$ and L2$\uparrow$. $\overline{B}(y-x \rightarrow \overline{B}(y-x)$.

34. P337, formula (6.76). Left-most term $r(s)f(x) \rightarrow\ r(x)f(x)$.

35. P380,L8. $\frac{k}{\lambda} \rightarrow\ \frac{\lambda}{k}$.

36. P438,L3$\uparrow$. as in Theorem 6.2.8, $\rightarrow$ as in Theorem 6.3 in Subsection 6.2.8, .

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