CORRECTIONS - FIRST EDITION - MARCH 12 2007

1. Page 4, line -2: Replace "consequences" by "consequence".
2. Page 8, add line 3: "All topological spaces in the sequel are assumed to be Hausdorff".
3. Page 41, line 10: Normal(0,I) and not Normal(0,1).
4. Page 60, line -1: replace Π_λ by $\mathbf{\Pi}_\lambda$.
5. Page 61, line -4: should be "unique non negative left eigenvectors".
6. Page 68, line 5: replace $H(q)\stackrel{\triangle}{=}\ldots$ by $H(q)\stackrel{\triangle}{=}-\ldots$.
7. Page 84 line -2: not *necessarily.*
8. Page 86 line -11: replace $\Sigma = \mathbb{R}$ by $\Sigma = [0,1]$.
9. Page 90, Theorem 3.6.8, part (a): add "for all sufficiently large n"
10. Page 111, line 17: Replace $\mathcal{X}$ by $\mathcal{Y}$.
11. Page 130, line -13: Add "log" after the second equality to read
$$= \log \int_{\mathcal{X}} e^{\lambda(x)} \mu_\epsilon(dx) \ , \quad \lambda \in \mathcal{X}^* \ ,$$
12. Page 134, Figure 4.5.2: the lines are not of $<\lambda_i, x> -g(\lambda_i) = 0$ but rather of $<\lambda_i, x> -g(\lambda_i) = c_i$, where $c_i = f(x_i)$ and x_i is the point of tangency of the line with slope λ_i to the graph of $f(\cdot)$.
13. Page 152, line -10: replace
$$\mathcal{AC}\stackrel{\triangle}{=}\Big\{\phi \in C([0,1]) : \sum_{\ell=1}^{k} |t_\ell - t_{\ell-1}| \to 0 \implies \sum_{\ell=1}^{k} |\phi(t_\ell) - \phi(t_{\ell-1})| \to 0\Big\}.$$
by
$$\mathcal{AC}\stackrel{\triangle}{=}\Big\{\phi \in C([0,1]) :$$
$$\sum_{\ell=1}^{k} |t_\ell - s_\ell| \to 0\,, s_\ell < t_\ell \le s_{\ell+1} < t_{\ell+1} \implies \sum_{\ell=1}^{k} |\phi(t_\ell) - \phi(s_\ell)| \to 0\Big\}.$$
14. Page 156, line -4 until Page 157, line 4: Replace text by

Finally, suppose that $\phi \in \mathcal{X}$ and $\phi \notin \mathcal{AC}$. Then there exist $\delta > 0$ and $\{s_1^n < t_1^n \leq \cdots \leq s_{k_n}^n < t_{k_n}^n\}$ such that $\sum_{\ell=1}^{k_n}(t_\ell^n - s_\ell^n) \to 0$, while $\sum_{\ell=1}^{k_n} |\phi(t_\ell^n) - \phi(s_\ell^n)| \geq \delta$. Note that, since Λ^* is nonnegative,

$$\begin{aligned} I_{\mathcal{X}}(\phi) &= \sup_{\substack{0<t_1<t_2<\ldots<t_k \\ \lambda_1,\ldots,\lambda_k \in \mathbb{R}^d}} \sum_{\ell=1}^{k} [\langle \lambda_\ell, \phi(t_\ell) - \phi(t_{\ell-1})\rangle - (t_\ell - t_{\ell-1})\Lambda(\lambda_\ell)] \\ &\geq \sup_{\substack{0\leq s_1<t_1\leq s_2<t_2\leq\ldots\leq s_k<t_k \\ \lambda_1,\ldots,\lambda_k \in \mathbb{R}^d}} \sum_{\ell=1}^{k} [\langle \lambda_\ell, \phi(t_\ell) - \phi(s_\ell)\rangle - (t_\ell - s_\ell)\Lambda(\lambda_\ell)] \,. \end{aligned}$$

Hence, for $t_\ell = t_\ell^n$, $s_\ell = s_\ell^n$, and λ_ℓ proportional to $\phi(t_\ell) - \phi(s_\ell)$ and with $|\lambda_\ell| = \rho$, the following bound is obtained:

$$I_{\mathcal{X}}(\phi) \geq$$

$$\limsup_{n\to\infty} \Big\{ \rho \sum_{\ell=1}^{k_n} |\phi(t_\ell^n) - \phi(s_\ell^n)| - [\sup_{|\lambda|=\rho} \Lambda(\lambda)] \sum_{\ell=1}^{k_n} (t_\ell^n - s_\ell^n) \Big\} \geq \rho\delta \,.$$

15. Page 157, proof of Lemma 5.1.14: The argument is incomplete, for one could have both sides of the equality before last in the page infinite when $\nu((-\infty, \bar{x})) > 0$. Rather, after (5.1.15), for any $M < \bar{x}$ such that $\nu((-\infty, M]) > 0$ integration by parts yields

$$\int_M^{\bar{x}} \frac{\nu(dx)}{\nu((-\infty, x])^\delta} \leq \frac{1}{1-\delta} \,.$$

Using monotone convergence, one may then set $M = -\infty$.

16. Page 161, line 11: Replace $\dot{g}^2(t)$ by $|\dot{g}(t)|^2$.
17. Page 161, line 14 and Page 163, line 9: Replace $\dot{\phi}^2(t)$ by $|\dot{\phi}(t)|^2$.
18. Page 161, line 10 and Page 163, line 12: add "all absolutely continuous functions *with value 0 at 0* ...."
19. Page 164, (5.2.15): the right hand side should be $2e^{-(\delta-E)^2/2V}$, where

$$V = \sup_{0\leq s,t\leq 1} E|X_{t,s}|^2 \,.$$

20. Page 189, display in remark: add) before the transpose sign in the expression for $I_x(f)$.
21. Page 192, line -6: Replace $|y^2|$ by $|y|^2$.
22. Page 208, line 7: Replace $x \in G$ by $x \in B_\rho$.

23. Page 216, line 6: omit $-$.
24. Page 242, line 14: Add " is weakly" before "closed".
25. Page 250, line 9 and in (6.3.7): replace N by N'.
26. Page 283, line 9: replace $\mathcal{X}$ by $\mathcal{Y}$.
27. Page 298, line -9, remove one) before the period.
28. Page 313, line 11: replace "were" by "where".
29. Page 322, line 11: add $f(t,x) : [0,\infty) \times \mathrm{I\!R}^d \to \mathrm{I\!R}^d$.
30. Page 331, item [KK86]: replace "Kellenberg" by "Kallenberg".