Corrections and Improvements - June 2004

1. Page 35, on line -9, exchange the role of V_t^- and V_t^+.

2. Page 78, on line 4 first note that $G_n = G_n^+ > 1$ η-almost surely. Then, on line 6, replace G_n^+ by $(G_n^+ - 1)$ and note that $\Psi_n(\eta) = \eta S^+_{n,\eta}$ with the transition defined on line 8. Finally, on 3. line 13, add that Ψ_n^+, Ψ_n^- are now the Boltzmann-Gibbs transformations associated with G_n^+, G_n^-.

3. Page 135. The first assertion in Lemma 4.3.1 can be improved as follows: Suppose the potential function G is bounded, otherwise the lemma trivially holds. In this case, there is no loss of generality to assume that $\|G\| \leq 1$, and in this case we have $\Psi(\mu) = \mu S_\mu$ with the Markov transition

$$\begin{aligned} S_\mu(x,.) &= G(x)\ \delta_x + (1 - G(x))\ \Psi(\mu) \\ &\geq (1 - \|G\|)\ \Psi(\mu) \quad (\Rightarrow \beta(S_\mu) \leq \|G\|) \end{aligned}$$

   Also notice that $[S_\mu - S_\eta] = (1 - G)\ [\Psi(\mu) - \Psi(\eta)]$. This readily implies that

$$\begin{aligned} \|\Psi(\mu) - \Psi(\eta)\|_{\mathrm{tv}} &\leq \|\mu S_\mu - \eta S_\mu\|_{\mathrm{tv}} + \|\eta S_\mu - \eta S_\eta\|_{\mathrm{tv}} \\ &\leq \beta(S_\mu)\ \|\mu - \eta\|_{\mathrm{tv}} + (1 - \eta(G))\ \|\Psi(\mu) - \Psi(\eta)\|_{\mathrm{tv}} \end{aligned}$$

   By symmetry arguments, we conclude that

$$\|\Psi(\mu) - \Psi(\eta)\|_{\mathrm{tv}} \leq \frac{\|G\|}{\eta(G) \vee \mu(G)} \|\mu - \eta\|_{\mathrm{tv}}$$

4. Page 141, Corollary 4.3.2, replace $(G)_m$ by (G).

5. Page 163, replace line 4 by $(\pi \times K)_1(d(y,y'))$.

6. Page 193, line 15, replace $\widehat{\Phi}^{(k+1)_\alpha(m+1)}$ by $\widehat{\Phi}_\alpha^{(k+1)(m+1)}$.

7. Page 201, in the l.h.s. of line 5, replace $\Delta(\alpha'(n))$ by $\Delta'(n)$.

8. Page 269, replace line 2 by $C_q^p = \frac{1}{S(p,q)} \sum_{\pi : b(\pi) = p} C^p_{q,\pi}$.

9. Page 295, line 8, replace F^N by $\mathcal{F}^N$, and in the proof of Theorem 9.3.1, replace $\mathcal{F}_k^N$ by $\mathcal{G}_k^N$.

10. Page 272, line -5, replace in the rhs g_j by g_{i_j}.

11. Page 370, replace lines -12 to -10 by the text: On the other hand, since $n!/p! \geq p^{n-p}$, for any $n,p \geq 0$, one checks that for any $\eta \ll \mu$

$$\frac{\mathbb{P}_\mu(m_N(Y) = \mu)}{\mathbb{P}_\mu(m_N(Y) = \eta)} = [\prod_{u \in S} \frac{(N\eta(u))!}{(N\mu(u))!}]\ \mu(u)^{N(\mu(u) - \eta(u))} \geq 1$$

12. Page 435, line -8, replace $1_B(X')$ by $1_B(X'_T)$.