

Erratum:
Positive Transfer Operators
and Decay of Correlations

V. BALADI

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- (1) Page 5, in Remark 1.1 replace “ $\{i \mid x_i = 0\}$ ” by “ $\{i \mid x_i = 0\}$.”
- (2) Page 30 (Definition 1.14), “of finite (algebraic) multiplicity, and such that λ is not in the spectrum of $\mathcal{L} - \mathcal{L}|_{E_\lambda}$, where E_λ is the (finite-dimensional) generalized eigenspace of λ for \mathcal{L} .”
- (3) Page 41: As pointed out by Daofei Zhang, if the potential g is not bounded away from zero, details are missing in the construction of the maximal eigenvector of the dual operator on p. 41. One alternative way to show the existence of a non-negative eigenvector is to use Lemma 6.9 and Remark 6.8 in Keller, G. Markov extensions, zeta functions, and Fredholm theory for piecewise invertible dynamical systems. Trans. Amer. Math. Soc. 314 (1989) 433–497. Another one is to approach g by a sequence of $g_n > 0$ as in Dynamical determinants and spectrum for hyperbolic diffeomorphisms. Geometric and probabilistic structures in dynamics, 29–68, Contemp. Math., 469, Amer. Math. Soc., Providence, RI, 2008.
- (4) Page 78: In the last line of the statement of Lemma 2.2, replace $\|\psi\|_L \leq \|\varphi\|_L$ by $\|\psi\|_L \leq 2\|\varphi\|_L$.
- (5) Page 79: In (2.11), replace \Leftrightarrow by \Rightarrow , and $\|\psi\|^{(i)} \leq \|\varphi\|^{(i)}$ by “ $\|\psi\|^{(1)} \leq \|\varphi\|^{(1)}$ and $\|\psi\|^{(2)} \leq 2\|\varphi\|^{(2)}$.” In (2.12) replace $(e^{\Theta_\Lambda(\varphi, \psi)} - 1)$ by $2(e^{\Theta_\Lambda(\varphi, \psi)} - 1)$.
- (6) Page 80: In the numerators and denominators of lines 6 and 9, replace $d(x, y)$ by $d(x, y)^\theta$ and $d(x, x_0)$ by $d(x, x_0)^\theta$. In line 18, replace $(1 - e^{-(1+\xi)Ld(u, v)^\theta} - 1)$ by $(1 - e^{-(1+\xi)Ld(u, v)^\theta})$.
- (7) Page 83: On line 11, suppress L_0 in the definition of η . On line 15, replace $|\psi|_\eta$ by $|\psi|_\theta$. On line 16 replace $L_0 + 2\xi L_0$ by $1 + \xi L_0 e^{\xi L_0}$. On line 17 replace $> L_0(1 + 2\xi)$ by $> 1 + \xi L_0 e^{\xi L_0}$. On line 18, replace $\rho \leq$ by $\eta \leq$.
- (8) Page 88: In line 4 of Remark 2.5, replace “the topological pressure” by “exponential of the topological pressure”. Insert \log in front of the l.h.s. of (2.25).
- (9) Page 89: Insert \log in front of the l.h.s of (2.29).

Typeset by $\mathcal{A}\mathcal{M}\mathcal{S}$ -TEX

- (10) Page 100 (Definition 2.4), replace line 14 by “ $I_k \subset \overline{f(I_j)}$ (assuming also $f|_{I_j}$ is injective and its inverse restricted to I_k is a homeomorphism onto its image).”
 (Exercise 2.12) replace in lines 20-21 “ $= \emptyset$ for all $n \geq 1$ and $k \neq j$. (In particular the flat traces $\text{tr}^b \mathcal{L}_g^n$ coincide with the Grothendieck traces $\text{tr} \mathcal{L}_g^n \dots$ ”
 by
 “consists in a single fixed point x_0 of f , for all $n \geq 1$ and $k \neq j$. (In particular the flat traces $\text{tr}^b \mathcal{L}_g^n$ coincide with the Grothendieck traces $\text{tr} \mathcal{L}_g^n$ minus the term $(g(x_0))^n / (1 - 1/(f'(x_0))^n) \dots$ ”
 On line 25, replace “arcs I_j ” by “arcs I_j with endpoints-set $\cup_{\ell \geq 0} f^{-\ell}(x_0)$, where x_0 is a fixed point of f .”
 In the last two lines, replace “Also, since the periodic orbits... for all $j \neq k$.” by
 “Modifying the construction, one may replace x_0 and its inverse images by another full periodic orbit.”
- (11) Page 114, lines 7–8. Replace “Consider a Markov partition \mathcal{Z} for the circle map f such that ... (as in Exercise 2.12).”
 by
 “Consider a Markov partition \mathcal{Z} for the circle map f as in Exercise 2.12, neglecting the fact that a fixed point is counted twice (see [297, pp. 817–818] for a way out of this problem)”
- (12) Page 153, line 2: replace $D \sum_{i=0}^N \chi_{f(a_i, a_{i+1})} (D^{-1}\mu) \circ (f|(a_i, a_{i+1}))^{-1}$ by
 $\sum_{i=0}^N \chi_{f(a_i, a_{i+1})} D(D^{-1}\mu) \circ (f|(a_i, a_{i+1}))^{-1}$.
- (13) Page 155 replace $f_*(\epsilon_f \cdot g)\mu$ by $(g \cdot \epsilon_f) f_*(\mu)$.
- (14) Page 156, lines 16–19: replace
 “... (3) of Theorem 1.5. Then, since ν_g is also an eigenfunctional of \mathcal{L}_g^* on the dual of BV/\mathcal{N} , we have $\int \varphi d\nu_g = 0$ whenever $\varphi \in \mathcal{N}$, in particular if φ is the characteristic function of a finite or countable set. Therefore ν_g is atomless.”
 by
 “... (3) of Theorem 1.5 (using the field generated by all intervals instead of cylinders, Lebesgue instead of Bernoulli measure, and noting that ν_g is regular by construction). Then, since ν_g coincides with an eigenfunctional of \mathcal{L}_g^* restricted to functions in BV/\mathcal{N} which are continuous or characteristic functions of unions of intervals, we have $\int \varphi d\nu_g = 0$ whenever φ is the characteristic function of a finite set (such a function is in \mathcal{N}). Therefore ν_g is atomless, which serves to prove that $\int \varphi d\nu_g = \nu_g(\varphi)$ for all $\varphi \in BV/\mathcal{N}$.”
- (15) Page 161, last line: there is a factor R missing.
- (16) Page 172: Replace $\theta_\epsilon(y - x)$ by $\theta_\epsilon(x - y)$. Page 173: Replace each $\theta_\epsilon(x - y)$ by $\theta_\epsilon(y - x)$ and vice-versa.
- (17) Page 172, line 3: replace “in the definition of τ ” by “in the definition of \mathcal{A}_δ .”
- (18) Page 186, line 2: replace “[−11]” by “[−1, 1].”
- (19) Page 227, line 7: replace $(\mathbb{Z}_+)^2$ by \mathbb{Z}_*^2 .
- (20) Page 230, line 16: replace “ $d(y_i, y_{i+1})$ ” by “ $d(f(y_i), y_{i+1})$.”
- (21) Page 240, line -8: replace “ f ” by “ F .”

- (22) Page 274, line -6: “ $\hat{f}_{kj} : \mathcal{D}_k^1 \times \mathcal{D}_k^2 \rightarrow \mathbb{C} \times \mathbb{C}$,” line -3: “ \mathcal{B}_k ,” line -2: “ $(\overline{\mathbb{C}} \setminus \overline{\mathcal{D}_k^1}) \times \mathcal{D}_k^2$.”
- (23) Page 275, line 1: replace “ $\partial \mathcal{D}_i^1$ and $\partial \mathcal{D}_i^2$ ” by “ $\partial \mathcal{D}_k^1$ ” and “ $\partial \mathcal{D}_k^2$,” line 6: “from \mathcal{B}_k to \mathcal{B}_j .”
- (24) Page 275, line 7: replace “ $\mathcal{A}(\mathbb{C} \setminus \overline{\mathcal{D}(1)})$ ” by “ $\mathcal{A}(\overline{\mathbb{C}} \setminus \overline{\mathcal{D}(1)}) \ominus \mathbb{C}$ (i.e., without the constant functions);” line 8: replace “as a subset of the Radon” by “as a superset of the Radon.”
- (25) Page 275, line 13: replace “ $\langle z^{-j-1} | z^k \rangle$ ” by “ $\langle z^j | z^{-k-1} \rangle$.”
- (26) Page 280, line 6: replace “ $= z_1^{-n_1} z_2^{n_2}$ ” by “ $= z_1^{-n_1-1} z_2^{n_2}$.”
- (27) Page 282, replace lines 6–7–8 by

$$“\mathcal{I}_k^1 \times \mathcal{I}_k^2 \subset A_k, \mathcal{D}_k^1 \times \mathcal{D}_k^2 \subset \hat{A}_k, \text{ and } \psi_k(\mathcal{I}_k^1 \times \mathcal{I}_k^2) = \tilde{R}_k^\omega ,”$$

where \hat{A}_k is a complex neighbourhood of A_k , and,

$$\psi_j \circ \hat{f}_{kj} |_{(\mathcal{I}_k^1 \times \mathcal{I}_k^2) \cap \hat{f}_{kj}^{-1}(\mathcal{I}_j^1 \times \mathcal{I}_j^2)} = f \circ \psi_k |_{\psi_k^{-1}(\tilde{R}_k^\omega \cap f^{-1} \tilde{R}_j^\omega)} .”$$

- (28) Page 282, line 17: “arbitrary $z \in \hat{A}_k$,” “ $P_{k,z}^s : \hat{A}_k \rightarrow E_z^s$.”
- (29) Between line 17 of page 282 and line 1 of page 283, all f must be replaced by \hat{f} and all A_k, A_ℓ by \hat{A}_k, \hat{A}_ℓ .
- (30) Page 282, line 24: “ $D \hat{f}_z^{-1} P_{k,z}^u = P_{\ell, \hat{f}^{-1}(z)}^u \circ D \hat{f}_z^{-1}$.”