(Correction)

p.5 $\downarrow$ 2 $G_\beta f \in \mathcal{D}(L^{(\alpha_0)}) \Rightarrow \beta f \in \mathcal{D}(L)$

p.5 $\downarrow$ 5 Yoshida theorem $\Rightarrow$ Yosida theorem

p.11 $\downarrow$ 12 $\sim$ 11 Delete "Note that $G_\alpha(dxdy) \cdots\cdots m \otimes m$ measure.

p.15 $\downarrow$ 1

if there exists a strictly positive function $g \in L^1(X;m)$ such that $\widehat{G}g < \infty$ m-a.e.
$\Rightarrow$ if $\widehat{G}g < \infty$ m-a.e. for any $g \in L^1(X;m)$.

p.15 $\downarrow$ 1 of Lemma 1.3.5

g be a strictly positive function of $L^1(X;m) \cap L^\infty(X;m)$.
$\Rightarrow$ g be a non-negative function of $L^1(X;m) \cap L^\infty(X;m)$ such that $m(\{x : g(x) > 0\}) > 0$.

p.15 $\uparrow$ 4

$G^g g \leq 1$ m-a.e. and $(\mathcal{E}^g, \mathcal{F})$ $(\mathcal{E}^g, \mathcal{F})$ is transient.
$\Rightarrow$ $G^g g \leq 1$ m-a.e. and in particular if $g > 0$ then $(\mathcal{E}^g, \mathcal{F})$ is transient.

p.17 $\uparrow$ 16

This implies the transience of $(\mathcal{E}^g, \mathcal{F})$ $\Rightarrow$ If $g > 0$, this implies the transience of $(\mathcal{E}^g, \mathcal{F})$

p17 $\downarrow$ 4 $\sim$ 5 $\left(\frac{\gamma-\beta}{\beta+g}K_1^\gamma\right) \Rightarrow \left(\frac{\gamma-\beta}{\gamma+g}K_1^\gamma\right)$

p.17 $\uparrow$ 13 Delete "If $(\mathcal{E}, \mathcal{F})$ is recurrent, $\cdots\cdots$ for any $\alpha \geq \|g\|_\infty \Rightarrow$"

p.17 $\uparrow$ 6

Hence the recurrence of $(\mathcal{E}, \mathcal{F})$ yields that $G^g g = 1$ a.e.
$\Rightarrow$ If $g > 0$, then the recurrence of $(\mathcal{E}, \mathcal{F})$ yields that $G^g g = 1$ a.e. If $g \geq 0$ a.e. and $\int_X g dm > 0$, take a function $h \in L^1(X;m)$ such that

$0 < h \leq 1$. Then for any $\epsilon > 0$, $G^{g+\epsilon h}(g+\epsilon h) = 1$. If it holds that $G^g f \geq G^{g+\epsilon h} f$ for any $f \in L^1_+$, then it follows that

$$G^g(g+\epsilon h) \geq G^{g+\epsilon h}(g+\epsilon h) = 1.$$

Since $G^g g \leq 1$, $\mathcal{E}^g$ is not recurrent and hence transient by Theorem 1.3.7, $G^g h < \infty$. Hence by letting $\epsilon \to 0$, it holds that $G^g g \geq 1$ and hence $G^g g = 1$ a.e. To show the inequality $G^g f \geq G^{g+\epsilon h} f$, take any function $u \in L^2_+$. By using the co-resolvent $\widehat{G}^g_\alpha$ of G^g_α,

$$\begin{aligned}
(G^g_\alpha f, u) &= (f, \widehat{G}^g_\alpha u) = \mathcal{E}^{g+\epsilon h}_\alpha (G^{g+\epsilon h}_\alpha f, \widehat{G}^g_\alpha u) \\
&= \mathcal{E}_\alpha (G^{g+\epsilon h}_\alpha f, \widehat{G}^g_\alpha u) + (G^{g+\epsilon h}_\alpha f, \widehat{G}^g_\alpha u)_{(g+\epsilon h)\cdot m} \\
&\geq \mathcal{E}_\alpha (G^{g+\epsilon h}_\alpha f, \widehat{G}^g_\alpha u) = (G^{g+\epsilon h}_\alpha f, u)
\end{aligned}$$

which gives the desired inequality.

p.20.

In the definition of α-coexcessiveness, remove the condition of non-negativity. (Under this condition, the non-negativity of α-coexcessive functio follows: see [Lemma 2.1.6).

p.20 Theorem 1.4.1

(ii) $\cdots\cdots$ (resp. $\widehat{u} \geq 0$ and $\mathcal{E}_\alpha(v, \widehat{u}) \geq 0$)
$\Rightarrow \cdots\cdots$ (resp. $\mathcal{E}_\alpha(v, \widehat{u}) \geq 0$)

p.25 $\downarrow 1$ Lemma 1.4.4

If $\alpha + \delta > \alpha_0 \Rightarrow$ Lemma 1.4.4 If $\widehat{h}_\delta \in L^1(X; m)$ and $\alpha + \delta > \alpha_0$

p.26 $\uparrow 2$

$\lim_{n\to\infty} |\mathcal{A}(u_n - u, u_n - u)| \Rightarrow \lim_{n\to\infty} |\mathcal{A}^{(\delta)}(u_n - u, u_n - u)|$

p.27 $\downarrow 3 \sim 4$ 0-coexcessive functionde $\widehat{h}_0$, define an extended form
$\Rightarrow$ positive 0-coexcessive functionde $\widehat{h}_0$,define $\widehat{m} = \widehat{h}_0 \cdot m$ and

p.27 $\downarrow 7$ Insert the following statement.

In the proof of the following theorem, we use the existence of positive function g satisfying $\|Gg\|_\infty < \infty$. Such fnction exists because, for a bounded positive function $f \in L^1(X; m)$, take an increasing sets $\{B_n\}$ such that $m(B_n) < \infty$, $\cup_n B_n = X$ a.e. and $Gf \leq n$ on F_n. Put $f_n = f \cdot 1_{B_n}$. Then $Gf_n \leq n$ as will be seen in section 2.4. Then it is enough to put $g = \sum_{n=1}^\infty (1/n2^n) f_n$.

p.27 $\downarrow 9$ $(|f|, G|f|) < \infty \Rightarrow (|f|, G|f|)_{\widehat{m}} < \infty$

p.28 $\downarrow$ 13

$K_1(K_2\|v\|_\infty + \mathcal{A}^{(\delta)}_{\alpha_0}(v,v)^{1/2}) \Rightarrow K_1(K_2\|v\|_\infty + \mathcal{A}^{(\delta)}(v,v)^{1/2})$

p.29 $\uparrow$ 5

Hence, $\{\beta G^{(\delta)}u\}$ is uniformly $\ldots$ $\Rightarrow$ Hence, $\{\beta G^{(\delta)}_\beta u\}$ is uniformly $\ldots$

p.31 $\uparrow 7, 6$

$2 \Rightarrow \frac{1}{2}$

$\uparrow$ 4 for $\delta_0 = 1-2\epsilon$ and $\delta_1 = 2k_1/\epsilon \Rightarrow \delta_0 = 1-\epsilon/2$ and $\delta_1 = k_1/2\epsilon$

p.33 $\downarrow$ 5

$(\mathcal{E}.4)$. For any non-negative $\Rightarrow$ $(\mathcal{E}.4)$. Since $\mathcal{Q}^c$ satisfies the sub-Markov property (see [55; Example 1.2.1]), $\mathcal{Q}^c(u\wedge a, u-u\wedge a) \geq 0$. Hence, for any non-negative

p.33 $\downarrow$ 11 $\mathcal{E}(u-u\wedge a, u\wedge a) = \Rightarrow \mathcal{E}(u-u\wedge a, u\wedge a) \geq$

p.37 $\uparrow$ 3

$\frac{\sqrt{2}}{2} \Rightarrow \sqrt{2}$

p.38 $\uparrow$ 1

$\leq \|u\|^2_{lip}\int_{y\neq x}\cdots \leq \|u\|^2_{lip}c_3 \Rightarrow \leq (\|u\|^2_{lip} \vee (4\|u\|^2_\infty)\int_{y\neq x}\cdots \leq (\|u\|^2_{lip} \vee (4\|u\|^2_\infty)c_3$

p.39 $\downarrow$ 3

$\leq 2\|u\|^2_\infty \int\cdots \leq 2c_1\|u\|^2_\infty \Rightarrow \leq 4\|u\|^2_\infty \int\cdots \leq 4c_1\|u\|^2_\infty$

p.39 $\downarrow$ 9

$\sqrt{2C}\|u\|_\infty\|u\|_{lip}\sqrt{c_2c_3} \Rightarrow 2\sqrt{C}\|u\|_\infty\|u\|_{lip}\sqrt{c_2c_3}$

p.42 $\downarrow$ 6

$\int\int_{\{|x-y|\neq 1/n\}} \Rightarrow \int\int_{\{|x-y|>1/n\}}$

p.44. Lemma 2.1.1

In the statement of (i), remove the assertion $0 \leq \widehat{e}^\alpha_A$.

p.44 $\uparrow$ 8

Suppose that $A\subset B$ are open. $\Rightarrow$Suppose that $A\subset B$.

p.45. After (2.1.8), insert the following statement:

For a strictly positive α-coexcessive function $\widehat{h}$, let

$$\mathcal{L}^{\widehat{h}}_A = \{u\in\mathcal{F} : u \geq \widehat{h} \ \text{ a.e. on } A\}$$

and $\widehat{e}_A^{\alpha,\widehat{h}} = \widehat{\pi}^\alpha_{\mathcal{L}_A^{\widehat{h}}}(0)$. In particular, for a fixed open set O and its open subset A, put $\mathcal{L}_A^O = \mathcal{L}_A^{\widehat{h}}$ and $\widehat{e}_A^{\alpha,O} = \widehat{e}_A^{\alpha,\widehat{h}}$ for $\widehat{h} = \widehat{e}_O^\alpha$, that is $\widehat{e}_A^{\alpha,O}$ is the unique function of $\mathcal{L}_A^O$ satisfying

$$\mathcal{E}_\alpha(\widehat{e}_A^{\alpha,O}, \widehat{e}_A^{\alpha,O}) \leq \mathcal{E}_\alpha(u, \widehat{e}_A^{\alpha,O}) \quad \text{for all } u \in \mathcal{L}_A^O.$$

Clearly, $\widehat{e}_O^{\alpha,O} \geq \widehat{e}_O^\alpha$. On the other hand, since $\widehat{e}^{\alpha,O} \wedge \widehat{e}_O^\alpha \in \mathcal{L}_O^O$, $\mathcal{E}(\widehat{e}_O^{\alpha,O} - \widehat{e}_O^{\alpha,O} \wedge \widehat{e}_O^\alpha, \widehat{e}_O^{\alpha,O}) \leq 0$. On the other hand, since $\widehat{e}_O^{\alpha,O} \wedge \widehat{e}_O^\alpha$ is α-coexcessive, $\mathcal{E}(\widehat{e}_O^{\alpha,O} - \widehat{e}_O^{\alpha,O} \wedge \widehat{e}_O^\alpha, \widehat{e}_O^{\alpha,O} \wedge \widehat{e}_O^\alpha) \geq 0$. Hence

$$\mathcal{E}(\widehat{e}_O^{\alpha,O} - \widehat{e}_O^{\alpha,O} \wedge \widehat{e}_O^\alpha, \widehat{e}_O^{\alpha,O} - \widehat{e}_O^{\alpha,O} \wedge \widehat{e}_O^\alpha) \leq 0$$

which implies $\widehat{e}_O^{\alpha,O} = \widehat{e}_O^\alpha$. Assume that $\widehat{\mathcal{L}}_O \neq \emptyset$. For an open subset A of O, define the α-capacity $\mathrm{Cap}^{(\alpha),O}(A)$ relative to O, by

$$\mathrm{Cap}^{(\alpha),O}(A) = \mathcal{E}_\alpha(e_A^\alpha, \widehat{e}_A^{\alpha,O}).$$

Since $\mathcal{L}_A^O \subset \mathcal{L}_A$, $\mathcal{E}_\alpha(\widehat{e}_A^\alpha \wedge \widehat{e}_A^{\alpha,O}, \widehat{e}_A^\alpha) \geq \mathcal{E}_\alpha(\widehat{e}_A^\alpha, \widehat{e}_A^\alpha)$. Furthermore, since $\widehat{e}_A^\alpha \wedge \widehat{e}_A^{\alpha,O}$ is α-coexcessive, $\mathcal{E}_\alpha(\widehat{e}_A^\alpha - \widehat{e}_A^\alpha \wedge \widehat{e}_A^{\alpha,O}, \widehat{e}_A^\alpha \wedge \widehat{e}_A^{\alpha,O}) \geq 0$. Hence

$$\mathcal{E}_\alpha(\widehat{e}_A^\alpha - \widehat{e}_A^\alpha \wedge \widehat{e}_A^{\alpha,O}, \widehat{e}_A^\alpha - \widehat{e}_A^\alpha \wedge \widehat{e}_A^{\alpha,O}) \leq 0$$

which implies that $\widehat{e}_A^\alpha = \widehat{e}_A^\alpha \wedge \widehat{e}_A^{\alpha,O} \leq \widehat{e}_A^{\alpha,O}$. Similarly, by noting that $\widehat{e}_O^\alpha = \widehat{e}_O^{\alpha,O}$, it holds that $\widehat{e}_A^{\alpha,O} = \widehat{e}_A^{\alpha,O} \wedge \widehat{e}_O^\alpha$ and hence $\widehat{e}_A^{\alpha,O} = \widehat{e}_O^\alpha$ a.e. on A. Therefore, by (2.1.7), we obtain that

$$\begin{aligned}
\mathcal{E}_\alpha(e_A^\alpha, e_A^\alpha) &\leq \mathcal{E}_\alpha(e_A^\alpha, \widehat{e}_A^\alpha) \leq \mathcal{E}_\alpha(e_A^\alpha, \widehat{e}_A^{\alpha,O}) \\
&= \mathcal{E}_\alpha(e_A^\alpha, \widehat{e}_O^\alpha) \leq C(O)\mathcal{E}_\alpha(e_A^\alpha, e_A^\alpha)^{1/2}
\end{aligned}$$

for $C(O) = K_\alpha \mathcal{E}_\alpha(\widehat{e}_O^\alpha, \widehat{e}_O^\alpha)^{1/2}$. In particular, by (2.1.8),

$$\mathcal{E}_\alpha(e_A^\alpha, e_A^\alpha) \leq \mathrm{Cap}^{(\alpha)}(A) \leq \mathrm{Cap}^{(\alpha),O}(A) \leq C(O)\, \mathrm{Cap}^{(\alpha)}(A)^{1/2}.$$

p.45. Add the following statement in Lemma 2.1.2:

For any open set O such that $\mathrm{Cap}^{(\alpha)}(O) < \infty$ and its subsets A, B, A_n, the results of (i), (ii), (iii) also hold for $\mathrm{Cap}^{(\alpha),O}$ instead of $\mathrm{Cap}^{(\alpha)}$. Furthermore, $\mathrm{Cap}^{(\alpha),O}$ is strongly subadditive, that is it satisfies
(iv) $\mathrm{Cap}^{(\alpha),O}(A \cup B) + \mathrm{Cap}^{(\alpha),O}(A \cap B) \leq \mathrm{Cap}^{(\alpha),O}(A) + \mathrm{Cap}^{(\alpha),O}(B)$.

(proof of (iv)) Since $\widehat{e}_C^{\alpha,O} = \widehat{e}_O^\alpha$ on C for any open subset C of O,

$$\begin{aligned}
&\mathrm{Cap}^{(\alpha),O}(A) + \mathrm{Cap}^{(\alpha),O}(B) - \mathrm{Cap}^{(\alpha),O}(A \cup B) - \mathrm{Cap}^{(\alpha),O}(A \cap B) \\
&= \mathcal{E}_\alpha(e_A^\alpha + e_B^\alpha - e_{A\cup B}^\alpha - e_{A\cap B}^\alpha, \widehat{e}_{A\cup B}^{\alpha,O}).
\end{aligned}$$

Since $e_A^\alpha + e_B^\alpha - e_{A\cup B}^\alpha - e_{A\cap B}^\alpha \geq 0$ on $A \cup B$, the last term is non-negative.

p.46. After (2.1.9), insert the following sentence:
Define $\mathrm{Cap}^{(\alpha),O}(B)$ for any set B similarly to (2.1.9).

p.46. In Theorem 2.1 (ii), replace

$\mathrm{Cap}^{(\alpha)}(\cup_n A_n) = \sup_n \mathrm{Cap}^{(\alpha)}(A_n) \Rightarrow \mathrm{Cap}^{(\alpha),O}(\cup_n A_n) = \sup_n \mathrm{Cap}^{(\alpha),O}(A_n)$ for any fixed open set O satisfying $\mathrm{Cap}^{(\alpha)}(O) < \infty$ and $\cup_n A_n \subset O$.

(Furthermore, add the following statement (iii))

(iii) $\mathrm{Cap}^{(\alpha),O}$ is a Choquet capacity on the subsets of O. In particular, any Borel subset of O is approximated from above and below by open set and compact set respectively relative to $\mathrm{Cap}^{(\alpha),O}$ and hence relative to $\mathrm{Cap}^{(\alpha)}$.

(proof of (ii))

For any $\epsilon > 0$ and n, take an open set B_n satisfying $A_n \subset B_n \subset O$ and $\mathrm{Cap}^{(\alpha),O}(B_n) \leq \mathrm{Cap}^{(\alpha),O}(A_n) + \epsilon/2^n$. Noting that $\cup_{k=1}^{n-1} B_k \cap B_n \supset A_{n-1}$, we have by Lemma 2.1.2 (iv),

$$
\begin{aligned}
&\mathrm{Cap}^{(\alpha),O}(\cup_{k=1}^{n} B_k) \\
&\quad\leq \mathrm{Cap}^{(\alpha),O}(\cup_{k=1}^{n-1} B_k) + \mathrm{Cap}^{(\alpha),O}(B_n) - \mathrm{Cap}^{(\alpha),O}(\cup_{k=1}^{n-1} B_k \cap B_n) \\
&\quad\leq \mathrm{Cap}^{(\alpha),O}(\cup_{k=1}^{n-1} B_k) + \mathrm{Cap}^{(\alpha),O}(A_n) + \frac{\epsilon}{2^n} - \mathrm{Cap}^{(\alpha),O}(\cup_{k=1}^{n-1} B_k \cap B_n) \\
&\quad\leq \mathrm{Cap}^{(\alpha),O}(\cup_{k=1}^{n-1} B_k) + \mathrm{Cap}^{(\alpha),O}(A_n) + \frac{\epsilon}{2^n} - \mathrm{Cap}^{(\alpha),O}(A_{n-1})
\end{aligned}
$$

By applying this inequality to the first term of the righthand side and repeating the argument, we obtain that

$$
\begin{aligned}
&\mathrm{Cap}^{(\alpha),O}(\cup_{k=1}^{n} B_k) \\
&\quad\leq \mathrm{Cap}^{(\alpha),O}(\cup_{k=1}^{n-2} B_k) + \mathrm{Cap}^{(\alpha),O}(A_{n-1}) + \frac{\epsilon}{2^{n-1}} - \mathrm{Cap}^{(\alpha),O}(A_{n-2}) \\
&\qquad + \mathrm{Cap}^{(\alpha),O}(A_n) + \frac{\epsilon}{2^n} - \mathrm{Cap}^{(\alpha),O}(A_{n-1}) \\
&\quad= \mathrm{Cap}^{(\alpha),O}(\cup_{k=1}^{n-2} B_k) + \frac{\epsilon}{2^{n-1}} + \frac{\epsilon}{2^n} - \mathrm{Cap}^{(\alpha),O}(A_{n-2}) + \mathrm{Cap}^{(\alpha),O}(A_n) \\
&\quad\leq \mathrm{Cap}^{(\alpha),O}(B_1) + \sum_{k=2}^{n} \frac{\epsilon}{2^k} - \mathrm{Cap}^{(\alpha),O}(A_1) + \mathrm{Cap}^{(\alpha),O}(A_n) \\
&\quad\leq \epsilon(1 - \frac{1}{2^n}) + \mathrm{Cap}^{(\alpha),O}(A_n).
\end{aligned}
$$

Therefore,

$$\begin{aligned}\mathrm{Cap}^{(\alpha),O}(\cup_{k=1}^{\infty}A_k) &\le \mathrm{Cap}^{(\alpha),O}(\cup_{k=1}^{\infty}B_k)\\ &= \lim_{n\to\infty}\mathrm{Cap}^{(\alpha),O}(\cup_{k=1}^{n}B_k) \le \lim_{n\to\infty}\mathrm{Cap}^{(\alpha),O}(A_n)+\epsilon.\end{aligned}$$

(Proof of (iii)

(iii) follows from [FOT, Appendix A.1].

p.48 $\downarrow 2 \sim 3$

$\bar{e}_A^{\alpha} \in \mathcal{L}_A$. It holds that $\Rightarrow$ $\bar{e}_A^{\alpha} \in \mathcal{K}$. It holds for $\alpha > \alpha_0$ that

p.48 $\downarrow 9$

Hence $G_{\alpha+\beta}u - pU_{p,g}^{\alpha}G_{\alpha+\beta}u + \beta G_{\alpha}^{pg}G_{\alpha+\beta}u = G_{\alpha}^{pg}u$.
Hence $\Rightarrow$ $G_{\alpha+\beta}u - pU_{p,g}^{\alpha}G_{\alpha+\beta}u + \beta G_{\alpha}^{pg}G_{\alpha+\beta}u = G_{\alpha}^{pg}u$ for $\alpha > \alpha_0$. Since G_α and G_{α}^{pg} on $L^\infty(X;m)$ satisfy the resolvent equation for $\alpha > 0$, they as well as $U_{p,g}^{\alpha}f = G_{\alpha}^{pg}(gf)$ are analytic relative to $\alpha > 0$. Hence the above relation holds for any $\alpha > 0$ and $\beta \ge 0$.

p.50 Lemma 2.1.6:

If $\widehat{h}$ is an integrable α-coexcessive function then, for any $\beta \ge \alpha$, $\widehat{h}_A^{\beta}$ is an integrable β-coexcessive function satisfying
$\Rightarrow$ If $\widehat{h}$ is an integrable β-coexcessive function such that $m(\{\widehat{h} > 0\}) > 0$, then $\widehat{h} \ge 0$ a.e. and, for any $\alpha \ge \beta$, $\widehat{h}_A^{\alpha}$ is an integrable α-coexcessive function satisfying

p.50 $\downarrow 6 \sim 7$

Then, for any $\beta \ge \alpha, \cdots\cdots$ is β-coexcessive. $\Rightarrow$ For the proof of the non-negativity of $\widehat{h}$, we consider that $A \subset \{x : \widehat{h}(x) > 0\}$.

p.50 Insert the following sentence after (2.1.20):

Since $\widehat{h} \ge 0$ a.e. gdm, (2.1.20) implies that $\widehat{h} \ge 0$.

p.50 $\uparrow 9$

β-coexcessive function. Equation $\cdots\cdots$
$\Rightarrow$ β-coexcessive function. If $\beta \le \alpha$, since $\gamma\widehat{G}_{\gamma+\alpha}\widehat{h} \le \gamma\widehat{G}_{\gamma+\beta}\widehat{h} \le \widehat{h}$, $\widehat{h}$ is also α-coexcessive. Hence the result shown above also holds for α

instead of β. Equation $\cdots\cdots$

p.50 Insert the following sentence before Theorem 2.1.7:

In the followings, we consider that any α-coexcessive function is non-negative.

p.51 After the definition of the nest, insert the following sentence:

For a nest $\{F_n\}$, using the set $O = X \setminus F_1$, $\lim_{n\to\infty} \mathrm{Cap}^{(\alpha)}(X \setminus F_n) = 0$ is equivalent to $\mathrm{Cap}^{(\alpha),O}(X \setminus F_n) = 0$. Hence the notion of the quasi-continuity on an open set O with $\mathrm{Cap}^{(\alpha)}(O) < \infty$ relative to the capacity $\mathrm{Cap}^{(\alpha)}$ is equivalent to the quasi-continuity relative to the capacity $\mathrm{Cap}^{(\alpha),O}$.

p.53 $\downarrow$ 1 of Theorem 2.2.6

$f \in L^\infty(X;m)$ (resp. $f \in L^1(X;m)$), $G_\alpha f$ (resp. $\widehat{G}_\alpha f$) has a q.c. modification. In particular, if $(\mathcal{E},\mathcal{F})$ is transient, $\cdots$ has a q.c. modification.

$\Rightarrow$ $f \in L^\infty(X;m)$ such that $\{x : |f(x) \geq \epsilon\} \subset B_\epsilon$ a.e. for some compact set B_ϵ for any ϵ (resp. $f \in L^1(X;m)$), $G_\alpha f$ (resp. $\widehat{G}_\alpha f$) has a q.c. modification. In particular, if $(\mathcal{E},\mathcal{F})$ is transient and $G_\alpha g$ has a q.c. modification for any $g \in L^\infty(X;m)$ for some $\alpha > 0$, then for any $f \in L^\infty(X;m)$ such that $\|Gf\|_\infty < \infty$, Gf has a q.c. modification. Furthermore $\widehat{G}f$ has a q.c. modification for any $f \in L^1(X;m)$

p.54 $\downarrow$ 1

$f \in L^\infty(X;m)$, by approximating f by functions $\{f_n\} \subset L^\infty(X;m) \cap L^2(X;m)$, in $L^\infty(X;m)$, $R_\beta f_n$ $\cdots\cdots$

$\Rightarrow$ $f \in L^\infty(X;m)$ satisfying the stated condition, by approximating f by function $f_n = f \cdot 1_{B_{1/n}}$ in $L^\infty(X;m)$, $R_\beta f_n$ $\cdots\cdots$

p.54 $\downarrow$ 11

and $0 < \alpha \leq \alpha_0$, $\Rightarrow$ and $0 < \alpha$ or $\alpha = 0$ and $(\mathcal{E},\mathcal{F})$ is transient,

p.54 $\downarrow$ 12

and $\beta > \alpha_0$, $u_n \equiv \widehat{G}_\alpha f \wedge (n\widehat{R}_\beta g)$ is β-excessive function $\Rightarrow$ and $\beta > \alpha_0 \wedge \alpha$, $u_n \equiv \widehat{G}_\alpha f \wedge (n\widehat{R}_\beta g)$ is β-coexcessive function

p.54 $\downarrow$ 13

q.c. modification of $\widehat{G}_\beta f$ $\Rightarrow$ q.c. modification of $\widehat{G}_\beta g f$

p.54 $\downarrow$ 17 $\sim$ 18

$e^\alpha_{B_k} \le (1/k)\widehat{u}(x) + e^\alpha_{X\setminus F_k} \Rightarrow \widehat{e}^\alpha_{B_k} \le (1/k)\widehat{u}(x) + \widehat{e}^\alpha_{X\setminus F_k}$

p.54 $\uparrow$ 10

and $f \in L^2(X;m)$ $\Rightarrow$ and f belonging to the domain of the $L^2(X;m)$-generator

p.54 $\uparrow$ 9

q.c. modification. The result $\cdots$ $\Rightarrow$ q.c. modification. Since the domain of the generator is dense in $\mathcal{F}$, the result $\cdots$

p.55 $\downarrow$ 3

$= \mathcal{E}_\alpha(\widehat{e}^\alpha_B, \widehat{e}^\alpha_B) - \epsilon \Rightarrow \ge \mathcal{E}_\alpha(\widehat{e}^\alpha_B, \widehat{e}^\alpha_B) - \epsilon$

p.55 $\downarrow$ 9

(2.1.5) that $\Rightarrow$ (2.1.5) ant Theorem 2.1.7 that

p.61 $\downarrow$ 5

we have $\mathcal{E}_\alpha(u \wedge u^\alpha_A, u^\alpha_A \wedge u - u^\alpha_A) \ge 0.$ $\Rightarrow$ we have $\mathcal{E}_\alpha(u^\alpha_A, u^\alpha_A \wedge u - u^\alpha_A) \ge 0.$

p.68 $\uparrow$ 1

$\beta R_{\beta+\alpha}\mu_B \le u^\alpha_B \Rightarrow \beta U_{\beta+\alpha}\mu_B \le u^\alpha_B$

p.70 $\downarrow$ 8

Theorem 3.5.6 (iii) $\Rightarrow$ Theorem 3.5.7 (iii)

p.75 $\uparrow$ 15 $\sim$ 11

$X \setminus B \Rightarrow X_\Delta \setminus B$

p.76 $\uparrow$ 15

$\bar{Y}_t \le Y_t$ a.s. and $\Rightarrow$ $\bar{Y}_t \le Y_t$ a.s., and

p.76 $\uparrow$ 10

Doob's optimal sampling theorem $\Rightarrow$ Doob's optional sampling theorem

p.77 $\uparrow$ 16

$\lim_{\alpha\to\infty} R_\alpha f_n \Rightarrow \lim_{n\to\infty} R_\alpha f_n$

p.78 $\uparrow$ 8

$\le e^{-\alpha t} \int \mu(dy) \cdots \Rightarrow \le e^{\alpha t} \int \mu(dy) \cdots$

p.83 $\uparrow$

$\bar{\mathbb{P}}_x(\bar{X}_{t_1} \in E_1, \cdots, \bar{X}_{t_n \in E_n}) \Rightarrow \bar{\mathbb{P}}_x(\bar{X}_{t_1} \in E_1, \cdots, \bar{X}_{t_n} \in E_n)$

p.85 $\downarrow$ 8(resp.11)

for $f \in L^2(X;m)$ (resp. for any $f \in L^\infty(X;m)$)
$\Rightarrow$ for Borel measurable function $f \in L^2(X;m)$ (resp. for any Borel measurable function $f \in L^\infty(X;m)$)

p.86 $\downarrow$ 6

$\widehat{\mathbb{P}}_x^{(\delta)}$-supermartingale $\Rightarrow$ is a $\widehat{\bar{\mathbb{P}}}_x^{(\delta)}$-supermartingale

p.87 $\uparrow$ 7 (resp.6)

$\int_0^\infty \cdots\cdots \Rightarrow \int_0^{\widehat{\zeta}} \cdots\cdots$ (resp. $\int_0^{\beta_k\widehat{\zeta}} \cdots\cdots$)

p.87 $\uparrow$ 4

If $y \in F_n$, then $\Rightarrow$ If $\widehat{\mathbb{P}}^{(\delta)}(\widehat{\tau}_{F_n} > 0) = 1$, then

p.87 $\uparrow$ 3

$\lim_{k\to\infty} \widehat{\mathbb{E}}_y^{(\delta)} \left(\int_0^{\widehat{\tau}_{F_n}} \cdots\right) \Rightarrow \lim_{k\to\infty} \widehat{\mathbb{E}}_y^{(\delta)} \left(\int_0^{\beta_k\widehat{\tau}_{F_n}} \cdots\right)$

p.87 $\uparrow$ 1

$$\lim_{n\to\infty}\lim_{k\to\infty} \widehat{\mathbb{E}}_y^{(\delta)} \left(\int_{\widehat{\tau}_{F_n}}^\infty e^{-t} U_\alpha\mu(\widehat{X}_{t/\beta_k})dt\right) \leq \cdots = 0$$

$\Rightarrow$

$$\lim_{k\to\infty} \widehat{\mathbb{E}}_y^{(\delta)} \left(\int_{\beta_k\widehat{\tau}_{F_n}}^{\beta_k\widehat{\zeta}} e^{-t} U_\alpha\mu(\widehat{X}_{t/\beta_k})dt\right) = 0$$

p.88 $\downarrow$ 1 $\sim$ 3

for q.e. y and $\cdots\cdots$ for all n, we obtain that
$\Rightarrow$ for such y. Since $\lim_{n\to\infty} \widehat{\mathbb{P}}_y^{(\delta)}(\widehat{\tau}_{F_n} < \zeta) = 0$ for a.e. y relative to μ, we obtain that

p.88 $\uparrow$ 11

$\widehat{h}_\delta(x)\widehat{\mathbb{E}}_x^{(\delta)}\left(e^{\delta t}\frac{1}{\widehat{h}_\delta(\widehat{X}_t)} : \Gamma \cap \{\widehat{\zeta} < t\}\right)$
$\Rightarrow \widehat{h}_\delta(x)\widehat{\mathbb{E}}_x^{(\delta)}\left(e^{\delta t}\frac{1}{\widehat{h}_\delta(\widehat{X}_t)} : \Gamma \cap \{t < \widehat{\zeta}\}\right)$

p.90 $\uparrow$ 12

$\widehat{\mathbb{P}}_{\widehat{m}}^{(\delta)}(\widehat{\sigma}_B < \infty) \Rightarrow \widehat{\mathbb{P}}_{\widehat{m}}^{(\delta)}(\widehat{\sigma}_{\bar{N}} < \infty)$

p.90 $\uparrow$ 5

for all $k \geq i+1 \Rightarrow$ for all $i+1 \leq k \leq n$

p.90 $\uparrow$ 2

$\sum_{i=1}^n \Rightarrow \sum_{i=1}^{n-1}$

p.91 $\uparrow 8 \sim 7$

$\beta R_{\beta+\alpha} H_B^\alpha 1 = \alpha R_{\beta+\alpha} e_B^\alpha$ q.e. Since $\lim_{\beta\to\infty} \alpha R_{\beta+\alpha} H_B^\alpha 1(x) =$
$\Rightarrow \beta R_{\beta+\alpha} H_B^\alpha 1 = \beta R_{\beta+\alpha} e_B^\alpha$ q.e. Since $\lim_{\beta\to\infty} \beta R_{\beta+\alpha} H_B^\alpha 1(x) =$

p.91 $\uparrow 2$

such thatCap$(N) = 0 \Rightarrow$ such that Cap$(N) = 0$

p.93 $\uparrow 12$

$K_\alpha(K_\alpha + 1) \Rightarrow K_\alpha(K_\alpha + 1)^{1/2}$

p.95 $\downarrow 13$

α-coexcessive function of $\mathcal{F} \cap L^1(X; m) \Rightarrow \alpha$-coexcessive function $\widehat{h}$ of $\mathcal{F} \cap L^1(X; m)$

p.96 $\downarrow 5$

$\widehat{\mathbb{E}}_x \left(e^{-\alpha\widehat{\sigma}_B} f(X_{\widehat{\sigma}_B})\right) \Rightarrow \widehat{\mathbb{E}}_x \left(e^{-\alpha\widehat{\sigma}_B} f(\widehat{X}_{\widehat{\sigma}_B})\right)$

p.99 $\downarrow 2$

(1.4.32) in [55] $\Rightarrow$ (1.4.39) in [55]

p.100 $\downarrow 3$

and R_p^G, $\Rightarrow$ and R_α^G,

p 100 $\uparrow 7$

$\mathcal{E}_\alpha^E(R_\alpha^G f, v) = (f, v) \Rightarrow \mathcal{E}_\alpha^G(R_\alpha^G f, v) = (f, v)$

p.101 $\downarrow 5$

$K_\alpha^2 \Rightarrow K_1^2$

p.101 $\uparrow 8$

$\lim_{n\to\infty} \sigma_{X\setminus F_n} = \zeta$ a.s. $\mathbb{P}_x \Rightarrow \lim_{n\to\infty} \hat{\sigma}_{X\setminus F_n} \geq \hat{\zeta}$ a.s. $\widehat{\mathbb{P}}_x$

p.102 $\downarrow 3, 5$

$\mathcal{L}_{\widehat{u}/\widehat{h}_\delta} \Rightarrow \mathcal{L}_{\widehat{u}/\widehat{h}_\delta, B}$

p.102 $\downarrow 4$

$\mathcal{A}_\delta \Rightarrow \mathcal{A}_\alpha$

p.102 $\downarrow 10$

$\lim_{n\to\infty} \sigma_{X\setminus F_n} = \zeta \Rightarrow \lim_{n\to\infty} \hat{\sigma}_{X\setminus F_n} \geq \hat{\zeta}$

p.103 $\downarrow 7$

$(\widehat{u}_\delta)_B^\alpha \leq \|\widehat{u}\|_B \widehat{h}_{\alpha,n} \Rightarrow (\widehat{u}_\delta)_B^\alpha \leq \|\widehat{u}\|_B \widehat{h}_\delta$

p.103 $\uparrow 3$

version of $\pi^{\delta}_{\mathcal{F}^A}(u) \Rightarrow$ version of $\pi^{\alpha}_{\mathcal{F}^A}(u)$

p.104 $\downarrow 5$

because $\pi^{\delta}_{\mathcal{F}^A}(u) \Rightarrow$ because $\pi^{\alpha}_{\mathcal{F}^A}(u)$

p.104 $\downarrow 9$

continuous for q.e. $\Rightarrow$ continuous on $(0, \zeta)$ for q.e.

p.105 $\uparrow 4$

$(1/\widehat{h}_\delta(x))k^{(\delta)}(dx) + \delta m(dx) \Rightarrow (1/\widehat{h}_\delta(x))k^{(\delta)}(dx) - \delta m(dx)$

p.105 $\uparrow 1$

$\int_X u(x)k^{(\delta)}(dx) + \delta \int_X \cdots \Rightarrow \int_X u(x)k^{(\delta)}(dx) - \delta \int_X \cdots$

p.106 $\downarrow 5$

$c_B(k(B) - \delta m(B)) \Rightarrow c_B(k(B) + \delta m(B))$

p.106 $\uparrow 16$

$lim_{i\to\infty} u_i \Rightarrow \lim_{i\to\infty} u_i$

p.106 $\uparrow 10$

$k^{(\delta)} + \delta\widehat{m} \Rightarrow k^{(\delta)} - \delta\widehat{m}$

p.106 $\uparrow 8$

$\int_X \cdots k(dx) - \int_X \cdots \Rightarrow \int_X \cdots k(dx) + \int_X \cdots$

p.108 $\downarrow 4$

$\int\int_{X\times X\setminus d} \cdots \Rightarrow \int\int_{X\times X\setminus \mathbf{d}} \cdots$

p.108 $\downarrow 10$

$\lim_{\beta\to\infty} \beta^2 G_\beta(dxdy) = J(dxdy)$ and $\lim_{\beta\to\infty} \beta^2 \widehat{G}_\beta(dxdy) = \widehat{J}(dxdy) \Rightarrow$
$\lim_{\beta\to\infty} \beta^2 G_\beta(dxdy) = 2J(dxdy)$ and $\lim_{\beta\to\infty} \beta^2 \widehat{G}_\beta(dxdy) = 2\widehat{J}(dxdy)$

p.108 $\downarrow 13, 16$

$J(dxdy)$, $\widehat{J}(dxdy) \Rightarrow 2J(dxdy)$, $2\widehat{J}(dxdy)$

p.108 $\uparrow 4 \sim$ p.111

J, $\widehat{J}$, $\widehat{J}^{(\beta)} \Rightarrow 2J$, $2\widehat{J}$, $2\widehat{J}^{(\beta)}$

p.109 $\downarrow 3$

$\leq K_\alpha^2 \mathcal{E}_\alpha \cdots \Rightarrow \leq K\mathcal{E}_\alpha \cdots$

p.109 $\downarrow 4$

for all $v \in \mathcal{F} \cap \mathcal{C}_0(G)$. $\Rightarrow$ for all $v \in \mathcal{F} \cap \mathcal{C}_0(G)$ and $\alpha \geq \alpha_0$

p.109 $\downarrow$ 11

and $g \in C_0(X \setminus G) \Rightarrow$. and $g \in \mathcal{C}_0(X \setminus G)$

p.110 $\uparrow$ 1

$\beta^2(\widehat{R}_\beta(g\widehat{h}_\delta), f\widehat{h}_\delta R^G_\alpha \varphi) \Rightarrow \beta^2(\widehat{R}_\beta(g\widehat{h}_\delta), fR^G_\alpha \varphi)$

p.111 $\uparrow$ 10

that $\int\int_{X\times X\setminus \mathbf{d}} \Phi(x,y)\widehat{J}(dxdy) \Rightarrow$ that $\int\int_{X\times X\setminus \mathbf{d}} \Phi(x,y)J(dxdy)$

p.113 $\uparrow$ 11

$\cdots + (\beta - \delta)V^{\alpha,\beta}_{B,A}V^{\gamma,\delta}_{A,B}f(x)$

$\Rightarrow \cdots + (\beta - \delta)V^{\alpha,\beta}_{A,B}V^{\gamma,\delta}_{A,B}f(x)$

p.119 $\downarrow$ 9

there exists a nest $\{F_n\} \Rightarrow$ there exists an increasing sequence of closed sets $\{F_n\}$

p.119 $\downarrow$ 10

$\lim_{n\to\infty} \mu(K \setminus F_n) = 0 \Rightarrow \lim_{n\to\infty} \mathrm{Cap}^{(\alpha)}(K \setminus F_n) = 0$

p.119 $\uparrow$ 9 $\sim$ 7

since $\mathrm{Cap}^{(\alpha)}(K \setminus \cup_n F_n) = 0$, Lemma 3.4.3 implies ......implies that $0 = \mu_A(F) = \lim_{n\to\infty} \mu(K \setminus F_n)$.

$\Rightarrow$ since $\{F_n\}$ is a nest, (4.1.12) is clear.

p.122 $\uparrow$ 10

(2.4.4) we have $\Rightarrow$ (2.4.5) we have

p.125 $\downarrow$ 1, (res.4)

a (resp. the) nest $\Rightarrow$ an (resp. the) increasing sequence of closed sets

p.128 $\uparrow$ 9 $\sim$ 8

$\widehat{m}$t $\Rightarrow m$

p.129 $\downarrow$ 8

a nest $\Rightarrow$ an increasing sequence of closed sets

p.129 $\downarrow$ 10

$\widehat{R}_\alpha g_n \Rightarrow \widehat{R}_\alpha \hat{g}_n$

p.129 $\downarrow$ 10 $\sim$ 11

$= n(u(x) - n\widehat{R}_{n+\alpha}u(x)) \Rightarrow = n(\widehat{u}(x) - n\widehat{R}_{n+\alpha}\widehat{u}(x))$

p.129 $\downarrow$ 15

$C = 2K_\alpha \mathcal{E}_\alpha(U_\alpha \nu, U_\alpha \nu)^{1/2} \Rightarrow C = 2K_\alpha \mathcal{E}_\alpha(\widehat{U}_\alpha \nu, \widehat{U}_\alpha \nu)^{1/2} \|\widehat{U}_{2\alpha}\nu\|_\infty$

p.131 $\uparrow$ 1

$+(\beta-\alpha)\widehat{R}_\beta\widehat{U}^\alpha_{\widehat{A}}g=0 \Rightarrow +(\alpha-\beta)\widehat{R}_\beta\widehat{U}^\alpha_{\widehat{A}}g=0$

p.132 $\uparrow$ 15 $\sim$ 14

$|p-q|<1/\|U_A^{(\alpha)}1\|_\infty \Rightarrow |p-q|<1/\|U^\alpha_{q,A}1\|_\infty$

p.132 $\uparrow$ 7

$\|\widehat{U}_\alpha(1_{F_n}\cdot\mu\|_\infty \Rightarrow \|\widehat{U}_\alpha(1_{F_n}\cdot\mu)\|_\infty$

p.132 $\uparrow$ 1

$\tau(t,\omega)=\{s>0: A_s(\omega)>t\} \Rightarrow \tau(t,\omega)=\inf\{s>0: A_s(\omega)>t\}$

p.133 $\downarrow$ 1

$\mathbb{E}_x(e^{-\alpha\gamma})=0 \Rightarrow \mathbb{E}_x(e^{-\alpha\gamma})=1$

p.133 $\downarrow$ 13

Theorems 3.2.6 and 3.4.4 $\Rightarrow$ Theorems 3.2.6 and 3.4.5

p.134 $\uparrow$ 1

$\widehat{\mathbb{E}}^{(\delta)}_x(e^{-\alpha\widehat{\sigma}_B}u(\widehat{X}_{\widehat{\sigma}_B}) \Rightarrow \widehat{\mathbb{E}}^{(\delta)}_x(e^{-(\alpha-\delta)\widehat{\sigma}_B}u(\widehat{X}_{\widehat{\sigma}_B}))$

p.137 $\uparrow$ 9 $\sim$ 8

$=(w-\alpha R^G_\alpha v,w)=\cdots\cdots$ for all $v\in\mathcal{F}^G \Rightarrow =(v-\alpha R^G_\alpha v,w)=\cdots\cdots$ for all $w\in\mathcal{F}^G$

p.138 $\downarrow$ 7

$K\frac{\alpha\sqrt{\alpha_0}}{\alpha-\alpha_0}\mathcal{E}_{\alpha_0}(u,u)^{1/2} \Rightarrow K\|u\|\frac{\alpha\sqrt{\alpha_0}}{\alpha-\alpha_0}\mathcal{E}_{\alpha_0}(u,u)^{1/2}$

p.138 $\downarrow$ 10

$K\frac{\alpha\sqrt{\alpha_0}}{\alpha-\alpha_0}\mathcal{E}_{\alpha_0}(\beta G^G_\beta u,\beta R^G_\beta u)^{1/2} \Rightarrow K\frac{\beta\|u\|}{\beta-\alpha_0}\frac{\alpha\sqrt{\alpha_0}}{\alpha-\alpha_0}\mathcal{E}_{\alpha_0}(\beta G^G_\beta u,\beta R^G_\beta u)^{1/2}$

p.139 $\downarrow$ 6

Theorem 4.3.1. $\mathcal{F}^\mu=\widetilde{\mathcal{F}}\cap L^2(X;m)$ and
$\Rightarrow$ Theorem 4.3.1. Assume that μ is a positive Radon measure charging no set of zero capacity. Then $\mathcal{F}^\mu=\widetilde{\mathcal{F}}\cap L^2(X;m)$ and

p.140 $\downarrow$ 1

nest $\Rightarrow$ increasing sequence of closed sets

p.141 $\uparrow$ 10

$(\Omega,\check{\mathcal{F}}_t,Y_t,\mathbb{P}_x,\zeta) \Rightarrow (\Omega,\check{\mathcal{F}}_t,Y_t,\mathbb{P}_x,\check{\zeta})$

p.141 $\uparrow$ 3

$(\Omega,\check{\mathcal{F}}_t,\widehat{Y}_t,\widehat{\mathbb{P}}^{(\delta)}_x,\zeta) \Rightarrow (\Omega,\check{\mathcal{F}}_t,\widehat{Y}_t,\widehat{\mathbb{P}}^{(\delta)}_x,\check{\widehat{\zeta}})$

p.142 $\downarrow 1$

Let $(V_\alpha^{(\delta)})_{\alpha>0} \Rightarrow$ Let $(V_p^{(\delta)})_{p>0}$

p.144 $\uparrow 10, 7$

$\alpha R^{qA} U_B^\alpha g \Rightarrow V_{A,B}^{q,0} U_B^\alpha g$

p.144 $\uparrow 6$

$(g, \widehat{R}_\alpha \widehat{U}^q_{\widehat{A}} \widehat{h})_{\widehat{h}\cdot\eta} \Rightarrow (g, \widehat{R}_\alpha \widehat{U}^q_{\widehat{A}} \widehat{h})_\eta$

p.145 $\downarrow 3$

$\int_T^{T+s} p_s u ds \Rightarrow \int_T^{T+t} p_s u ds$

p.145 $\downarrow 13$

By irreducibility, this yields $\Rightarrow$ Since $p_t u = u$ q.e., by the irreducibility, this yields

p.146 $\downarrow 6$

$\geq 1_{\{\tau_a=\infty\}} Z + 1\{\tau_a < \infty\}. \Rightarrow \geq 1_{\{\tau_a=\infty\}} Z + 1_{\{\tau_a<\infty\}}.$

p.148 $\downarrow 6$

$+(H_{\bar{Y}}\tilde{u}, \widehat{H}^g_{\bar{Y}}\tilde{u})_{g\cdot m} \Rightarrow +(H_{\bar{Y}}\tilde{u}, H^g_{\bar{Y}}\tilde{u})_{g\cdot m}$

p.152 $\downarrow 5$ (5.1.8)

$\mathcal{E}_{\alpha_0} \Rightarrow \mathcal{E}_\alpha$

p.152 $\downarrow 6$

depending on $\|u\|_\infty + \cdots \Rightarrow$ depending on $\alpha > \alpha_0$ and $\|u\|_\infty + \cdots$

p.152 $\uparrow 14, 12$

$\mathcal{E}_{\alpha_0} \Rightarrow \mathcal{E}_\alpha$

p.155 $\downarrow 1$

nest $\{F_n\}$ of closed sets $\Rightarrow$ a sequence $\{F_n\}$ of closed sets

p.155 $\uparrow 2, 1$

$\int_0^t \langle \mu, \widehat{p}_s \widehat{h}_\delta\rangle dt = \int_0^t e^{\delta t} \langle \mu, e^{-\delta s}\widehat{p}_s \widehat{h}_\delta\rangle ds \Rightarrow \int_0^t \langle \mu, \widehat{p}_s \widehat{h}_\delta\rangle ds = \int_0^t e^{\delta s} \langle \mu, e^{-\delta s}\widehat{p}_s \widehat{h}_\delta\rangle ds$

p.164 $\downarrow 7$

for $\eta_n = \Rightarrow$ for $d\eta_n =$

p.164 $\uparrow 7$

$K_7 \geq \alpha K_\beta \|v\|/(\alpha - \alpha_0) \Rightarrow K_7 \geq \alpha K_\beta \sup_n \|u_n^{(2)}\|_\infty \|v\|/(\alpha - \alpha_0)$

p.165 $\uparrow 12$

$\beta \mathbb{E}_{v\cdot m}\left(\int_0^\infty \cdots\right) \Rightarrow \beta^2 \mathbb{E}_{v\cdot m}\left(\int_0^\infty \cdots\right)$

p.170 $\uparrow$ 4

$\left(\sum_{0<s\le t} 1_{\{\Delta\}}(X_s)u^2(X_s-)1_{\{X_s\neq X_{s-}\}}\right)^p \Rightarrow \left(\sum_{0<s\le t} 1_{\{\Delta\}}(X_s)u^2(X_{s-})1_{\{X_s\neq X_{s-}\}}\right)^p$

p.171 $\downarrow$ 11

$= 2\int_0^t \widehat{p}_s^G w(x)u(x)v(y)J(dxdy)ds \Rightarrow = 2\int_0^t \int_X \int_X \widehat{p}_s^G w(x)u(x)v(y)J(dxdy)ds$

p.173 $\uparrow$ 1

$\mathcal{C}_0(X)\cap\mathcal{F}_b \Rightarrow \mathcal{C}_0(X)\cap\mathcal{F}$

p.175 $\uparrow$ 5

As we noted after equation (5.2.5) $\Rightarrow$ By equation (3.5.21)

p.176 $\downarrow$ 6

$\mathcal{E}^b(u,v) = \cdots\cdots(R_\beta(dxdy)-\widehat{R}_\beta(dxdy)) \Rightarrow$ By equation (3.5.21) $\mathcal{E}^b(u,v) = \cdots\cdots(R_{\beta_n}(dxdy)-\widehat{R}_{\beta_n}(dxdy))$

p.178 $\downarrow$ 7

$K_\epsilon = d\times\sup\{\cdots\cdots\} \Rightarrow K_\epsilon = \sup\{\cdots\cdots\}$

p.179 $\downarrow$ 8

$j^{(a)}(x,y)m(dx)m(dy) \Rightarrow j^{(a)}(x,y)m(dx)m(dy)$

p.179 $\downarrow$ 9 $\sim$ 10

$= |j^{(a)}(x,y)|m(dx)m(dy) \le C|j^{(s)}(x,y)|^{1/2}\cdots$

$\Rightarrow = 2|j^{(a)}(x,y)|m(dx)m(dy) \le 2\sqrt{C}|j^{(s)}(x,y)|^{1/2}\cdots$

p.179 $\downarrow$ 11

Hence, equation (1.5.9) and (1.5.10) $\Rightarrow$ Hence, equation (1.5.8), (1.5.9) and (1.5.10)

p.179 $\downarrow$ 14

$\le C\lim_{\epsilon\to 0}\int\int\cdots \Rightarrow \le \sqrt{C}\lim_{\epsilon\to 0}\int\int\cdots$

p.182 $\uparrow$ 14 $\sim$ 12

$\mathcal{S}_0$ for any $k, i=1,2$ and $\mathcal{E}_\alpha(u,v) = (\nu^{(1)}-\nu^{(2)},\tilde{v})$, for all $v\in\mathcal{F}^{B_\ell}$ and $\alpha>\alpha_0$.

$\Rightarrow$ $\mathcal{S}_0$ for any $i=1,2$ and $\mathcal{E}(u,v) = (\nu^{(1)}-\nu^{(2)}+\alpha\cdot m,\tilde{v})$, for all $v\in\mathcal{F}^{B_\ell}$ and $\alpha>\alpha_0$.

p.183 $\downarrow$ 2

$\mu_\ell = 1_{B_\ell}\cdot(\nu^{(1)}-\nu^{(2)})$, then $\Rightarrow$ $\mu_\ell = 1_{B_\ell}\cdot(\nu^{(1)}-\nu^{(2)}+\alpha u\cdot m)$, then

p.183 $\uparrow$ 9

$\mathbb{E}_x(e^{-\alpha\zeta}u(X_\zeta) = 0 \Rightarrow \mathbb{E}_x(e^{-\alpha\tau}u(X_\Delta) = 0$, $\tau = \lim_{\ell\to\infty}\tau_{B_\ell}$

p.183 $\uparrow$ 4
$N_t^{[u]} = \cdots - A_t^{[1]} + A_t^{[u]} \Rightarrow N_t^{[u]} = \cdots - A_t^{[1]} + A_t^{[2]}$

p.185 $\downarrow$ 7
$\cup_n\{x : u_n^\alpha(x) = 1\}$ q.e. on $G \Rightarrow \cup_n\{x : u_n^\alpha(x) = 1\} = G$ q.e.

p.185 $\uparrow$ 13
$\tau_{F_n} \uparrow \infty \Rightarrow \tau_{F_n} \uparrow \zeta$

p.185 $\uparrow$ 9
$u_n^\alpha = (kR_\alpha^n f) \wedge 1 \Rightarrow u_n^\alpha = (nR_\alpha^n f) \wedge 1$

p.186 $\uparrow$ 12
$\mathcal{E}^\eta(u,v) = \mathcal{E}(u,v) + (u,v)_{\eta}.. \Rightarrow \mathcal{E}^\eta(u,v) = \mathcal{E}(u,v) + (u,v)_\eta.$

p.188 $\uparrow$ 15
$e_v(M^{[u_n]}) = 2\mathcal{E}(u_n, u_n v) - \mathcal{E}(u_n^2, v) \Rightarrow 2e_v(M^{[u_n]}) = 2\mathcal{E}(u_n, u_n v) - \mathcal{E}(u_n^2, v)$

p.189 $\uparrow$ 4 $\quad -\dfrac{1}{2}\lim\limits_{\varepsilon\to 0}\cdots \Rightarrow = -\dfrac{1}{2}\lim\limits_{\varepsilon\to 0}\cdots$

p.190 $\uparrow$ 5 $\quad \displaystyle\int_X \widetilde{w}(x)\widetilde{h}_\delta(x)\mu_{\langle u,v\rangle}(dx) \Rightarrow \int_X \widetilde{w}(x)\mu_{\langle u,v\rangle}(dx)$

p.193 $\downarrow$ 6 $\quad = 2\ell\|f\|_\infty \cdots \Rightarrow \leq 2\ell\|f\|_\infty\cdots$

p.199 $\uparrow$ 10 $\quad \lim_{\ell\to\infty}\tau_{B_\ell} = \infty \Rightarrow \lim_{\ell\to\infty}\tau_{B_\ell} = \zeta$

p.207 $\downarrow$ 11 $\sim$ 14 $\quad \sum_{i=1}^{n_k-1} \Rightarrow \sum_{j=1}^{n_k-1}$

p.207 $\uparrow$ 3 $\quad = \rho(x)\eta_i^{(1)}(dx) - \rho(x)\mu^{(1)}_{\langle M, M^{[x_i]}\rangle}(dx) - \cdots \Rightarrow = \rho(x)\eta_i^{(1)}(dx) + \rho(x)\mu^{(1)}_{\langle M, M^{[x_i]}\rangle}(dx) - \cdots$

p.208 $\downarrow$ 2 $\quad \mathcal{E}^{(2)}(u,v) \Rightarrow -\mathcal{E}^{(2)}(u,v)$

p.208 $\downarrow$ 5, 6 $\quad \cdots + \mathcal{E}^{(1)}(u, v\rho) \Rightarrow \cdots - \mathcal{E}^{(1)}(u, v\rho)$

p.208 $\downarrow$ 11
$= \int_D v\rho(x)\mu^{(1)}_{\langle M, M^{[x_i]}\rangle}(dx) + \cdots \Rightarrow = -\int_D v\rho(x)\mu^{(1)}_{\langle M, M^{[x_i]}\rangle}(dx) + \cdots$

p.212 $\uparrow$ 4 $\sim$ p.213 $\uparrow$ 11 $\quad \psi \Rightarrow \psi_\alpha$

p.213 $\uparrow$ 11
$$\int_{r_0}^\infty \frac{1}{r^{d-1}\widetilde{a}(r)}\exp\left(\int_{r_0}^r \psi(t)dt\right) \Rightarrow \int_{r_0}^r \frac{1}{s^{d-1}\widetilde{a}(s)}\exp\left(\int_{r_0}^s \psi(t)dt\right)ds$$

p.218 $\uparrow$ 6 $\quad \mathcal{E}_\alpha^{(\tau)}(u_k(\tau,\cdot),u_k(\tau,\cdot)) \Rightarrow E_\alpha^{(\tau)}(u_k(\tau,\cdot),u_k(\tau,\cdot))$

p.225 (Lemma 6.2.3), p.227 (Theorem 6.2.4), p.229 (Lemma 6.2.5), p.270 (Theorem 6.2.6)
$\Rightarrow$ Add the assumption: There exists $T>0$ such that $h(\tau,x)=0$ for all $\tau \notin [0,T)$.

p.226 $\uparrow$ 3 $\|(u^{(n)}-u^{(n-1)})(\tau,\cdot)\|_H^2-\|(u^{(n)}-u^{(n-1)})(T,\cdot)\|_H^2 \Rightarrow \|(u^{(n)}-u^{(n-1)})(\tau,\cdot)\|_H^2$

p.227 $\downarrow 1 \sim 2$ $\quad$ For any $\delta>0, \cdots < \delta$, this implies
$\Rightarrow$ This implies

p.227 $\downarrow 5 \sim 6$ $\quad \|u^{(n)}-u^{(n-1}\|_{\mathcal{F}}^2 \le \cdots \le \frac{1}{\varepsilon^2}\|u^{(n)}-u^{(n-1)}\|_{\mathcal{H}}\cdots$
$\Rightarrow \|u^{(n)}-u^{(n-1)}\|_{\mathcal{F}}^2 \le \cdots \le \frac{1}{\varepsilon^2}(1\vee(1/\alpha))\|u^{(n)}-u^{(n-1)}\|_{\mathcal{H}}\cdots$

p.227 $\downarrow$ 10
$$\frac{1}{\varepsilon}\int_{\mathbb{R}^1}\big((u^{(n-1)}-h)^-(\tau,\cdot),\varphi\big)\,d\tau \Rightarrow \frac{1}{\varepsilon}\int_{\mathbb{R}^1}\big((u^{(n-1)}-h)^-(\tau,\cdot),\varphi\big)\,\xi(\tau)d\tau$$