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Correction to "Branching Markov processes II"

By

Nobuyuki IKEDA, Masao NAGASAWA
and Shinzo WATANABE

Page 373.

Add to Lemma 2.4 the following statement:

(iv) *For a* $\tilde{\mathfrak{B}}_T$*-measurable function* f, *there is a* $\tilde{\mathfrak{B}}_{\tau_k}\otimes\mathfrak{B}$*-measurable function* $f'(\tilde{\omega}, \tilde{\omega}')$ *on* $\Omega_0\times\Omega_0$ *such that* $f(\tilde{\omega})=f'(\tilde{\omega}, \theta_{\tau_k}\tilde{\omega})$ *and* $f'(\tilde{\omega}, \tilde{\omega}')=0$ *if* $X_{\tau_k}(\tilde{\omega})\neq X_0(\tilde{\omega}')$. *Moreover* $I\{0\leq T_k(u,.)<\tau\}f'(u,.)$ *is* $\tilde{\mathfrak{B}}_{T_k}$*-measurable.*

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Add to Lemma 2.6 the following statement:

"*Moreover for a* $\tilde{\mathfrak{B}}_{T+0}$*-measurable function* f, *there is a* $\tilde{\mathfrak{N}}_{T'+0}$*-measurable function* f' *on* W *such that* $f'(w)=f(\tilde{\omega})$ *for* $\tilde{\omega}\in\{T(\tilde{\omega})<\tau(\tilde{\omega}),\ w_1=w\}$."

In Lemma 2.7,

"*Let* f *be a bounded measurable function on* E,"

should be read as

"*Let* f *be a bounded* $\tilde{\mathfrak{B}}_{T+0}$*-measurable function*,".

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In the lines 1, 2, 5, 6, and 14,

"$f(X_T)$" should be read as "$f(\tilde{\omega})$".

In the lines 7, 9, 12, and 13,

"$f(x_{T'})$" should be read as "$f'(w)$".

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The first line

"$\tilde{E}_x[I_{\{\tau_k\leq T\}}\tilde{E}_{X_{\tau_k}}[I_{\{0\leq T_k(u,.)<\tau\}}\tilde{E}_{X_{T_k(u,.)}}[g(X_\tau, \tau)]]|_{u=\tilde{\omega}}; A]$,"

should be read as

"$\tilde{E}_x[I_{\{\tau_k\leq T\}}\tilde{E}_{X_{\tau_k}}[I_{\{0\leq T_k(u,.)<\tau\}}h(u,.)\tilde{E}_{X_{T_k(u,.)}}[g(X_\tau, \tau)]]|_{u=\tilde{\omega}}]$, *where* $h(\tilde{\omega}, \tilde{\omega}')$ *is a* $\mathfrak{B}_{\tau_k}\otimes\mathfrak{B}$*-measurable function such that* $I_A(\tilde{\omega})=h(\tilde{\omega}, \theta_{\tau_k}\tilde{\omega})$ *and* $h(\tilde{\omega}, \tilde{\omega}')=0$ *if* $X_{\tau_k}(\tilde{\omega})\neq X_0(\tilde{\omega}')$."

In the fourth line,

Insert "$h(u,.)$" in the second expectation and drop " ; A".

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In the second line,

Drop "$\cap A$" from the first expectation and insert "$h(u,.)$" in the second.

In the lines 7 and 8,

Drop "$\cap A$" from the first expectations and insert "$h'(u,.)$" and "$h(u,.)$" in the second expectations, respectively.