

ERRATA FOR  
STOCHASTIC CALCULUS FOR SYMMETRIC  
MARKOV PROCESSES

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**1. Errata.** For a correct statement of Lemma 3.1(i) in [1], eliminate part (d) and replace part (c) by

(c)  $\mathbf{P}_x(\lim_{n \rightarrow \infty} \sigma_{E \setminus G_n} < \zeta) = 0$  for  $m$ -a.e.  $x \in E$ .

To see that the original statements of parts (c) and (d) of Lemma 3.1(i) are not correct, consider the killed Brownian motion in the open unit ball in  $\mathbb{R}^d$ , with  $G_n$  the concentric open ball with radius  $1 - 1/n$ . In Remark 4.5(iii) as well as in Lemma 4.6, for  $f \in \mathcal{F}_{\text{loc}}$ , the stochastic integral  $\int_0^t f(X_{s-}) d\Lambda(M)_s$  is in general well defined only for  $t \in [0, \zeta[$ . The generalized Itô formula in [1], Theorem 4.7, holds in general only for  $t \in [0, \zeta[$ . These corrections have no effect on the papers [2, 3], as the results from [1] are used in those papers only for  $t \in [0, \zeta[$ .

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REFERENCES

- [1] CHEN, Z. Q., FITZSIMMONS, P. J., KUWAE, K. and ZHANG, T. S. (2008). Stochastic calculus for symmetric Markov processes. *Ann. Probab.* **36** 931–970. [MR2408579](#)
- [2] CHEN, Z. Q., FITZSIMMONS, P. J., KUWAE, K. and ZHANG, T. S. (2008). Perturbation of symmetric Markov processes. *Probab. Theory Related Fields* **140** 239–275. [MR2357677](#)
- [3] CHEN, Z. Q., FITZSIMMONS, P. J., KUWAE, K. and ZHANG, T. S. (2009). On general perturbations of symmetric Markov processes. *J. Math. Pures Appl.* (9) **92** 363–374. [MR2569183](#)

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