SÉMINAIRE DE PROBABILITÉS (STRASBOURG)

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Erratum : “A semi-markovian model for the brownian motion”

Séminaire de probabilités (Strasbourg), tome 7 (1973), p. 1-2
<http://www.numdam.org/item?id=SPS_1973__7__0_2>

Erratum for Vol. 321: Séminaire de Probabilités VII

The last two pages of M. Mürmann's article:
"A Semi-Markovian Model for the Brownian Motion"
(p. 248-272) were omitted by error:

(proof of proposition 5)

Proof: We have to show that the convergence can be interchanged with the application of the kernel S resp. R. In ii) we made a supposition, which just makes it possible. It can be replaced by corresponding suppositions.

In i) we can show it without further suppositions. We shall show the weak convergence by the following characterization of it:

If $A \subset E$ is a Borel set with $\nu(\partial A) = 0$, then $\nu_n(A) \to \nu(A)$. Since μ is a Q-invariant measure, we have $\nu = \mu S = \pi_o(\mu)$.

So $0 = \nu(\partial A) = \pi_o(\mu)(\partial A) =$

$$\mu(\pi_o^{-1}(\partial A)) \geq \mu(\partial\, \pi_o^{-1}(A)).$$

Let $B = \pi_o^{-1}(A)$. Then $\mu(\partial B) = 0$ and hence $\mu_n(B) \to \mu(B)$.

$$\mu_{n+1}(B) = (\mu_n Q)(\pi_o^{-1}(A)) = (\mu_n SR)(\pi_o^{-1}(A)) =$$

$$(\mu_n S)(A) = \nu_{n+1}(A).$$

Because of $\mu(B) = \nu(A)$ this completes the proof.

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