

Chung, K. L.

Conditional gauges. (English) [Zbl 0552.60073](#)

Stochastic processes, Semin. Gainesville/Fla. 1983, Prog. Probab. Stat. 7, 17-22 (1984).

[For the entire collection see [Zbl 0546.00025](#).]

The conditional gauge u_h of a bounded open set $D \subset \mathbb{R}^d$, $d \geq 1$ is defined by $u_h(x) = E_h^x[\exp[\int_0^{\tau_D} q(B_s^h) ds]]$, where q is a bounded Borel function and E_h^x denotes the expectation wrt the probability law P_h^x of h -conditional Brownian motion B_t^h starting at x , τ_D is the first exit time from D of B_t^h and $h > 0$ is harmonic in D . *N. Falkner* [*Z. Wahrscheinlichkeitstheor. Verw. Geb.* 65, 19-33 (1983; [Zbl 0496.60078](#))] has proved the following: Suppose D is Green- smooth and that for some $x \in D$ and some h we have $u_h(x) < \infty$. Then $\sup_{h; h(x_0)=1} \sup_{x \in D} u_h(x) < \infty$.

In the present article a simpler proof of this result is given.

Reviewer: [B.Øksendal](#)

MSC:

60J45 Probabilistic potential theory

60J65 Brownian motion

Cited in 1 Document

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