Zbl 101.11204
Erdős, Pál; Taylor, S.J.
On the Hausdorff measure of Brownian paths in the plane (In English)
Proc. Camb. Philos. Soc. 57, 209-222 (1961).

Let us denote by Ω the set of all brownian plane paths $z(t,\omega) = (z(t,\omega), y(t,\omega))$ where ω is a random point and $0 < t < \infty$. One of the two authors (*S.J.Taylor*, Zbl 050.05803) constructed a probabilistical device $\{\Omega F, \mu\}$ for the space of Brownian motion.
Paul Lévy has proved (Zbl 024.13906) that the Lebesgue plane measure of the set $L(0,\infty;\omega)$ [where $L(a,b;\omega) = \{z(t,\omega) \mid 0 \leq a < t < l \leq \infty\}$] is – with probability one – equal to null. In the present paper the authors prove Lévy's conjecture i. e. that, in contrast to the occurrences in the multidimensional case, the measure of the set $L(0,1;\omega)$ in the twodimensional space is finite, with respect to function $-x^2 \log x$. The method employed in the demonstration uses the connexion between the Hausdorff-measure and the generalized capacity, that was pointed out by *S.Kametani* [Jap. J. Math. 19, 217-257 (1946; Zbl 061.22704)].

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Classification:
60J65 Brownian motion
28A78 Hausdorff measures