

[Malric, Marc](#)

Density of paths of iterated Lévy transforms of Brownian motion. (English) Zbl 1274.60171
[ESAIM, Probab. Stat. 16, 399-424 \(2012\)](#).

The Lévy transform is the transformation T of the Wiener space given by $T(B)(t) = \int_0^t \operatorname{sgn}(B(s)) dB(s)$, $t \geq 0$. The Wiener measure is invariant under T . In the present contribution it is proved that T is topologically recurrent, i.e. for almost every element w of the Wiener space the orbit $\{T^n w : n \geq 0\}$ is dense in the Wiener space (with respect to the topology of uniform convergence on compact intervals). While this is necessary for ergodicity of T with respect to the Wiener measure, ergodicity remains an open question.

Reviewer: [Hans Crauel \(Frankfurt am Main\)](#)

MSC:

- [60G99](#) Stochastic processes
- [37A05](#) Dynamical aspects of measure-preserving transformations
- [37A25](#) Ergodicity, mixing, rates of mixing
- [37A50](#) Dynamical systems and their relations with probability theory and stochastic processes
- [60J65](#) Brownian motion

Cited in 1 Document

Keywords:

[Lévy transform](#); [topological recurrence](#); [ergodicity](#)

Full Text: [DOI](#) [arXiv](#)