Taylor, J. C.

Brownian motion on a symmetric space of non-compact type: Asymptotic behaviour in polar coordinates. (English) Zbl 0758.58037

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This expository paper is a sequel to the author's paper in [Contemp. Math. 73, 303-332 (1988; Zbl 0658.58041)]. Results of Orihara and Malliavin from the early 1970's concerning the asymptotic behaviour of Brownian motion on a symmetric space of noncompact type are obtained by a simpler and more direct method. The Brownian motion lives on the set of regular points of the symmetric space, where a skew product representation analogous to polar coordinates is available; asymptotically the 'radial' variable tends to infinity almost surely in a precise direction, and the 'angle' also converges a.s..

Reviewer: R.Darling

MSC:

58J65	Diffusion processes and stochastic analysis on manifolds
60J65	Brownian motion
43A85	Harmonic analysis on homogeneous spaces
22E30	Analysis on real and complex Lie groups
60B15	Probability measures on groups or semigroups, Fourier transforms, factorization

Keywords:

Brownian motion; symmetric space; skew product representation

Full Text: DOI