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La régularité des fonctions aléatoires d'Ornstein-Uhlenbeck à valeurs dans ℓ^2 ; le cas diagonal. (Continuity of ℓ^2 -valued Ornstein-Uhlenbeck random functions; the diagonal case). (French)

Zbl 0674.60040

C. R. Acad. Sci., Paris, Sér. I 309, No. 1, 59-62 (1989).

Summary: We characterize the regularity of paths of ℓ^2 -valued solutions of the diagonal Langevin equation $dV = -\Lambda V dt + \Sigma dW$, $t \in \mathbb{R}^+$, where Λ is diagonal positive, Σ is diagonal non-negative and W is a Wiener process with independent normalized components: their paths are continuous in ℓ^2 if and only if they are in this space and the integral

$$\int \log^+(\sup\{\lambda_k : \sigma_k^2 > \lambda_k x\}) dx$$

is finite.

MSC:

60G17 Sample path properties

60H10 Stochastic ordinary differential equations (aspects of stochastic analysis)

60J65 Brownian motion

Cited in 7 Documents

Keywords:

Ornstein-Uhlenbeck random functions; regularity of paths; diagonal Langevin equation; Wiener process