CARPATHIAN J. MATH. **24** (2008), No. 1, 72 - 75

Nonsmooth perturbations in stochastic differential equations for the brownian motion process

CRISTINEL MORTICI and DOINA MIHAI

ABSTRACT. The brownian motion is one of the most important stochastic process with a large class of applications in physics and other social areas. We give here an estimation for the solution of Langevin's equation which moderates the brownian motion process. Using an idea from the theory of the semilinear abstract equations in Hilbert spaces, we replace the free term of the Langevin's equation by a more general, nonsmooth term. If this term is bounded in some sense, then the solution remains in a bounded interval.

VALAHIA UNIVERSITY OF TÂRGOVIȘTE DEPARTMENT OF MATHEMATICS UNIRII 18, TÂRGOVIȘTE, ROMANIA *E-mail address*: cmortici@valahia.ro *E-mail address*: dmihai@valahia.ro