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Mean Square Solutions of Second-Order Random Differential Equations by Using Variational Iteration Method

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Abstract

In this paper, the variational iteration method (VIM) is successfully applied for analytic (approximate) mean square solutions of the second-order random differential equations, homogeneous or inhomogeneous. Expectation and variance of the approximate solutions are computed. Several numerical examples are presented to show the ability and efficiency of this method .

Keywords: Random differential equations, Stochastic differential equation and Variational iteration method

1. Introduction

A random ordinary differential equations are an ordinary differential equations which contains random constants or random variables. Most scientific problems,