

On the Reconstruction of the First Term in the Variational Iteration Method for Solving Differential Equations

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The well-known He's variational iteration method is an efficient and easy technique for finding the solution of various kinds of problems. In this method the solution of a nonlinear problem is found without any need to solve a linear or nonlinear system of equations. In the current work we present an idea for accelerating the convergence of the resulted sequence to the solution of the problem by choosing a suitable initial term. The efficiency of the method will be shown by testing the new algorithm on several examples.

Key words: Variational Iteration Method; Initial Term; Differential Equations; Partial Differential Equations; Integral Equations.