APPLICATION OF NEW VARIATIONAL HOMOTOPY PERTURBATION METHOD (NVHPM) FOR SOLVING FREDHOLM INTEGRAL EQUATIONS OF THE SECOND KIND

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Abstract

This paper concerns the application of the new Variational Homotopy Perturbation Method for solving linear and non-linear Fredholm integral equations of the second kind.

The advantage of the new scheme is that it does not require discritization, linearization or any restrictive assumption of any form before it is applied.

Three test problems are considered and the results obtained are compared in terms of errors obtained with the two convectional variational iteration and homotopy perturbation methods. Also the results obtained are plotted and compared favorably with the exact solution. In all the examples considered, the results reveal that the proposed method is very efficient, simple and is more user friendly.