

A New Computational Method for the Solution of Nonlinear Burgers' Equation Arising in Longitudinal Dispersion Phenomena in Fluid Flow through Porous Media

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Abstract : This paper discusses the Modified Variational Iteration Method (MVIM) for the solution of nonlinear Burgers' equation arising in longitudinal dispersion phenomena in fluid flow through porous media. The method is an elegant combination of Taylor's series and the variational iteration method (VIM). Using Maple 18 for implementation, it is observed that the procedure provides rapidly convergent approximation with less computational efforts. The result shows that the concentration $C(x,t)$ of the contaminated water decreases as distance x increases for the given time t .

Keywords : modified variational iteration method, Burger's equation, porous media, partial differential equation

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