A Hybrid Adomian Decomposition Method in the Solution of Logistic Abelian Ordinary Differential and Its Comparism with Some Standard Numerical Scheme

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Abstract : In this paper we present a Hybrid of Adomian decomposition method (ADM). This is the substitution of a One-step method of Taylor's series approximation of orders I and II, into the nonlinear part of Adomian decomposition method resulting in a convergent series scheme. This scheme is applied to solve some Logistic problems represented as Abelian differential equation and the results are compared with the actual solution and Runge-kutta of order IV in order to ascertain the accuracy and efficiency of the scheme. The findings shows that the scheme is efficient enough to solve logistic problems considered in this paper.
Keywords : Adomian decomposition method, nonlinear part, one-step method, Taylor series approximation, hybrid of Adomian polynomial, logistic problem, Malthusian parameter, Verhulst Model
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