Adomian, G.

An investigation of the asymptotic decomposition method for nonlinear equations in physics.

(English) Zbl 0637.65086
Appl. Math. Comput. 24, 1-17 (1987).

The paper presents some useful illustrations on the author's decomposition method, and contains 14 examples of nonlinear equations - six of them are of first order and one of second order ordinary equations, and seven partial differential equations of first and second order. It is shown that the decomposition method makes possible the study of the behaviour of the differential equation solution when an independent variable (or variables) tends to infinity.

Reviewer: Ju.V.Kostarčuk

MSC:

65L99 Numerical methods for ordinary differential equations
65Z05 Applications to the sciences
34E99 Asymptotic theory for ordinary differential equations
35B40 Asymptotic behavior of solutions to PDEs

Keywords:

asymptotic behaviour of the solution; decomposition method

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References:

[1] Adomian, G., Stochastic systems, (1983), Academic · Zbl 0504.60066

[2] Adomian, G., Nonlinear stochastic operator equations, (1986), Academic · Zbl 0614.35013

[3] Adomian, G., Applications of nonlinear stochastic systems theory to physics, (June 1987), Reidel Dordrecht