عنوان مقاله:

Chebyshev Spectral Collocation Method for Computing Numerical Solution of Telegraph Equation

محل انتشار:

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خلاصه مقاله:

In this paper, the Chebyshev spectral collocation method(CSCM) for one-dimensional linear hyperbolic telegraph equation is presented. Chebyshev spectral collocation method have become very useful in providing highly accurate solutions to partial differential equations. A straightforward implementation of these methods involves the use of spectral differentiation matrices. Firstly, we transform telegraph equation to system of partial differential equations with initial condition. Using Chebyshev differentiation matrices yields a system of ordinary differential equations. Secondly, we apply fourth order Runge-Kutta formula for the numerical integration of the system of ODEs. Numerical results verified the high accuracy of the new method, and its competitive ability compared with other newly appeared .methods

کلمات کلیدی:

Chebyshev spectral collocation method, telegraph equation, numerical results, Runge-Kutta formula