

عنوان مقاله:

An efficient numerical approach for solving the variable-order time fractional diffusion equation using chebyshev spectral collocation method

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خلاصه مقاله:

In this paper we consider the one-dimensional variable-order time fractional diffusion equation where the order is $q(x,t)$ in $(0,1)$. One type of Caputo fractional derivative is introduced and to get a numerical technique, the time variable is discretized using a finite difference plan then we use a spectral collocation method to discretize the spatial derivative. In order to show the effectiveness and accuracy of this method, some test problems are considered, and it is shown that the obtained results are in very good agreement with exact solutions.

کلمات کلیدی:

Partial differential equation, parabolic equation, variable-order derivative chebyshev spectral collocation method

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