

عنوان مقاله:

Non-uniform L1/DG method for one-dimensional time-fractional convection equation

محل انتشار:

مجله روشهای محاسباتی برای معادلات دیفرانسیل، دوره 9، شماره 4 (سال: 1400)

تعداد صفحات اصل مقاله: 14

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خلاصه مقاله:

In this paper, we present an efficient numerical method to solve a one-dimensional time-fractional convection equation whose solution has a certain weak regularity at the starting time, where the time fractional derivative in the Caputo sense with the order in $(\alpha, 1)$ is discretized by the L_1 finite difference method on non-uniform meshes and the spatial derivative by the discontinuous Galerkin (DG) finite element method. The stability and convergence of the method are analyzed. Numerical experiments are provided to confirm the theoretical results.

کلمات کلیدی:

time-fractional convection equation, L_1 scheme, discontinuous Galerkin method, stability and convergence

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