عنوان مقاله:

Legendre-collocation spectral solver for variable-order fractional functional differential equations

محل انتشار:

مجله روشهای محاسباتی برای معادلات دیفرانسیل, دوره 8, شماره 1 (سال: 1399)

تعداد صفحات اصل مقاله: 12

نویسندگان:

Department of Mathematics, Faculty of Education, Matrouh University, Egypt - - -

Department of Mathematics, Faculty of Science, Cairo University, Giza-Egypt - - -

خلاصه مقاله:

A numerical method for the variable-order fractional functional differential equations (VO-FFDEs) has been developed. This method is based on approximation with shifted Legendre polynomials. The properties of the latter were stated, first. These properties, together with the shifted Gauss-Legendre nodes were then utilized to reduce the VO-FFDEs into a solution of matrix equation. Sequentially, the error estimation of the proposed method was investigated. The validity and efficiency of our method were examined and verified via numerical examples.

کلمات کلیدی:

Variable-order fractional functional differential equations, Shifted Legendre polynomials, Gauss-Legendre nodes, Matrix equation

لینک ثابت مقاله در پایگاه سیویلیکا:

https://civilica.com/doc/1598030