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Abstract

In this paper, shifted Legendre polynomials will be used for constructing the numerical solution for a class of multiterm variable-order fractional differential equations. In the proposed method, the shifted Legendre operational matrix of the fractional variable-order derivatives will be investigated. The fundamental problem is reduced to an algebraic system of equations using the constructed matrix and the collocation technique, which can be solved numerically. The error estimate of the proposed method is investigated. Some numerical examples are presented to prove the applicability, generality, and accuracy of the suggested method.