

1106-65-704

Somayeh Mashayekhi* (sm2395@msstate.edu), 21 Ace Ave, Apt # 8305, Starkville, MS 39759.

Solving of fractional order differential equations by using hybrid function.

In this work, a new numerical method for solving the fractional differential equations is presented. The method is based upon hybrid functions approximation. The properties of hybrid functions consisting of block-pulse functions and polynomials are presented. The Riemann-Liouville fractional integral operator for hybrid functions is introduced. This operator is then utilized to reduce the solution of the initial and boundary value problems for fractional differential equations to a system of algebraic equations. Illustrative examples are included to demonstrate the validity and applicability of the technique. (Received September 04, 2014)