

Block backward differentiation formulas for solving fuzzy differential equations under generalized differentiability

ABSTRACT

In this paper, the fully implicit 2-point block backward differentiation formula and diagonally implicit 2-point block backward differentiation formula were developed under the interpretation of generalized differentiability concept for solving first order fuzzy differential equations. Some fuzzy initial value problems were tested in order to demonstrate the performance of the developed methods. The approximated solutions for both methods were in good agreement with the exact solutions. The numerical results showed that the diagonally implicit method outperforms the fully implicit method in term of accuracy.

Keyword: Block; Diagonally; Fuzzy; Implicit