Block backward differentiation formulas for solving second order fuzzy differential equations

ABSTRACT

In this paper, we study the numerical method for solving second order Fuzzy Differential Equations (FDEs) using Block Backward Differential Formulas (BBDF) under generalized concept of higher-order fuzzy differentiability. Implementation of the method using Newton iteration is discussed. Numerical results obtained by BBDF are presented and compared with Backward Differential Formulas (BDF) and exact solutions. Several numerical examples are provided to illustrate our methods.

Keyword: Fuzzy differential equations; Block backward differentiation formula; Block differential formula; Generalized differentiability