Performance of quarter-sweep successive over relaxation iterative method for two-point fuzzy boundary value problems

Abstract

This study deals with the application of numerical methods in solving the Fuzzy Boundary Value Problems (FBVPs) which is discretized to derive second order fuzzy finite difference approximation equation. Then this fuzzy approximation equation is used to generate the fuzzy linear system. In addition to that, the fuzzy linear system will be solved iteratively by using Gauss-Seidel (GS), Full-Sweep Successive Over-Relaxation (FSSOR), Half-Sweep Successive Over Relaxation (HSSOR) and Quarter-Sweep Successive Over Relaxation (QSSOR) iterative methods. Then several numerical experiments are conducted to illustrate the effectiveness of QSSOR iterative method compared with the GS, FSSOR and QSSOR methods