

Numerical solutions of first kind linear Fredholm integral equations by using quarter-sweep SOR with piecewise linear collocation method QSSOR with piecewise linear collocation method for Fredholm equations

Abstract

Presently, there are many sciences and numerous applications especially in engineering can be transformed into integral equations problems. In this paper, the effectiveness of the Quarter-Sweep Successive Over-Relaxation (QSSOR) method by using the quarter-sweep linear collocation approximation equation to solve first kind linear integral equations of Fredholm type is investigated. Furthermore, the formulation and implementation of the proposed method are also presented. Through the numerical experiments, two examples are provided to illustrate the performance of the proposed method.