Numerical performance of Half-Sweep SOR Method for solving second order composite closed Newton-Cotes System

Abstract

In this paper, application of the Half-Sweep Successive Over-Relaxation (HSSOR) iterative method is extended by solving second order composite closed Newton-Cotes quadrature (2-CCNC) system. The performance of HSSOR method in solving 2-CCNC system is comparatively studied by their application on linear Fredholm integral equations of the second kind. The derivation and implementation of the method are discussed. In addition, numerical results by solving two test problems are included and compared with the standard Gauss-Seidel (GS) and Successive Over-Relaxation (SOR) methods. Numerical results demonstrate that HSSOR method is an efficient method among the tested methods.