

Application of the Half-Sweep Gauss-Seidel Method For Solving First Order Linear Fredholm Integro-Differential Equations

Abstract

The objective of this paper is to analyse the application of the Half-Sweep Gauss-Seidel (HSGS) method by using the Half-sweep approximation equation based on backward difference (BD) and repeated trapezoidal (RT) formulas to solve linear fredholm integro-differential equations of first order. The formulation and implementation of the Full-Sweep Gauss-Seidel (FSGS) and Half-Sweep Gauss-Seidel (HSGS) methods are also presented. The HSGS method has been shown to very fast as compared to the FSGS methods. Some numerical tests were illustrated to show that the HSGS method is superior to the FSGS method.