Numerical solutions for linear Fredholm integral equations of the second kind using 2-point half-sweep explicit group method

Abstract

In this paper, performance of the 2-Point Half-Sweep Explicit Group (2-HSEG) iterative method with first order composite closed Newton-Cotes quadrature scheme for solving second kind linear Fredholm integral equations is investigated. The formulation and implementation of the method are described. Furthermore, numerical results of test problems are also presented to verify the performance of the method compared to 2-Point Full-Sweep Explicit Group (2-FSEG) method. From the numerical results obtained, it is noticeable that the 2-HSEG method is superior to 2-FSEG method, especially in terms of computational time. © 2014 AIP Publishing LLC.