Four point explicit decoupled group iterative method applied to two-dimensional helmholtz equation

Abstract

In this we consider the numerical solution of two-dimensional Helmholtz equation. The four point Explicit Decoupled Group (EDG) iterative method together with Gauss-Seidel (GS) is applied to solve a linear system generated from discretization of the finite difference scheme using the second order central difference. In addition, the formulation and implementation of the proposed method to solve the problem also presented. Numerical result and comparisons with other existing method are given to illustrate the efficiency of the proposed method.