

The arithmetic mean iterative method for solving 2D Helmholtz equation

ABSTRACT

In this paper, application of the Arithmetic Mean (AM) iterative method is extended by solving second order finite difference algebraic equations. The performance of AM method in solving second order finite difference algebraic equations is comparatively studied by their application on two-dimensional Helmholtz equation. Numerical results of AM method in solving two test problems are included and compared with the standard Gauss-Seidel (GS) method. Based on the numerical results obtained, the results show that AM method is better than GS method in the sense of number of iterations and CPU time.

Keyword: 2D Helmholtz equation; Arithmetic mean iterative method