

An experimental study of the modified accelerated overrelaxation (MAOR) scheme on stationary helmholtz equation

ABSTRACT

This research aims to experiment the Modified Accelerated Overrelaxation (MAOR) scheme on second order iterative method for solving two dimensional (2D) Helmholtz Equation. The equation is discretized using the standard second order (Full Sweep) finite difference method. Previous well known relaxation schemes includes the Gauss-Seidel (GS), Successive Overrelaxation (SOR), Modified SOR (MSOR) and Accelerated Overrelaxation (AOR) schemes. These schemes has at most two relaxation parameter while the MAOR scheme have more than two. Several numerical experiments were conducted on two different equations to test the feasibility and the superiority of the MAOR scheme compared to the previous schemes on different mesh size.