

MEGSOR iterative scheme applied to 2D steady convection-diffusion equations

Abstract

Recently, the findings on the MEG iterative scheme has demonstrated to accelerate the convergence rate in solving any system of linear equations generated by using approximation equations of boundary value problems. Based on the same scheme, the aim of this paper is to study the effectiveness of the Four Point MEGSOR iterative scheme in solving the two-dimensional steady convection-diffusion equation by using the second-order finite difference approximation. For comparative performance analysis, we also elaborate on how to construct and implement other four point block schemes such as EG and EDG. Finally, the experimental results show that the Four Point MEGSOR iterative scheme is superior as compared with the existing four point block schemes.