Implementation of Quarter-Sweep Approach in Poisson Image Blending Problem

ABSTRACT

The quarter-sweep scheme has been used in solving boundary value problems efficiently. In this paper, we aim to determine the capability of the family of Gauss-Seidel iterative methods to solve the Poisson image blending problem, which are the Full-Sweep Gauss-Seidel (FSGS), Half-Sweep Gauss-Seidel (HSGS) and Quarter-Sweep Gauss-Seidel (QSGS). Second order finite difference approximation is used for the discretization of Poisson equation. Finally, the numerical results show that QSGS iterative scheme is more competent as compared with the full- and half-sweep approaches while obtaining the same quality of output images.