

# **Quarter-sweep nonlocal discretization scheme with QSSOR iteration for nonlinear two-point boundary value problems**

## **Abstract**

The aim of this paper is to consider the Quarter-sweep Successive Over Relaxation (QSSOR) iteration for solving nonlinear two-point boundary value problems. The second order finite difference (FD) method is applied to derive the quarter-sweep nonlocal discretization scheme for the sake of transforming the system of nonlinear approximation equations into the corresponding system of linear equations. The formulation and the implementation of the methods are discussed. In addition, the numerical results by solving the proposed problems using QSSOR method are included and compared with the Full-sweep Successive Over Relaxation (FSSOR) and Half-sweep Successive Over Relaxation (HSSOR) methods.