Application of the full-sweep AOR iteration concept for space-fractional diffusion equation

Abstract

The aim of this paper is to investigate the effectiveness of the Full-Sweep AOR Iterative method by using Full-Sweep Caputo's approximation equation to solve space-fractional diffusion equations. The governing space-fractional diffusion equations were discretized by using Full-Sweep Caputo's implicit finite difference scheme to generate a system of linear equations. Then, the Full-Sweep AOR iterative method is applied to solve the generated linear system To examine the application of FSAOR method two numerical tests are conducted to show that the FSAOR method is superior to the FSSOR and FSGS methods..