

## **Grünwald Implicit Solution of One-Dimensional Time-Fractional Parabolic Equations Using HSKSOR Iteration(Conference Paper)**

### **ABSTRACT**

This paper presents the application of a half-sweep iteration concept to the Grünwald implicit difference schemes with the Kaudu Successive Over-Relaxation (KSOR) iterative method in solving one-dimensional linear time-fractional parabolic equations. The formulation and implementation of the proposed methods are discussed. In order to validate the performance of HSKSOR, comparisons are made with another two iterative methods, full-sweep KSOR (FSKSOR) and Gauss-Seidel (FSGS) iterative methods. Based on the numerical results of three tested examples, it shows that the HSKSOR is superior compared to FSKSOR and FSGS iterative methods.

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