

## An Error Bound for the SAOR Method

<sup>1</sup>Liu Futi, <sup>1</sup>Huang Tingzhu, <sup>2</sup>He huiming

<sup>1</sup>School of Applied Mathematics, University of Electronic Science and Technology of China,  
Chengdu, Sichuan, 610054, P. R. China,

E-mail: tzhuang@uestc.edu.cn Tel: 028-83202637

<sup>2</sup>Yongtai Education Committee, Zhongjiang, Sichuan, 618116, P.R. China

### ABSTRACT

Suppose  $Ax = b$  is a system of linear equations where the matrix  $A$  is symmetric positive definite and consistently ordered. A bound for the norm of the errors  $\mathbf{e}_k = x - x^k$  of the SAOR method in terms of the norms of  $\mathbf{d}_k = x^k - x^{k-1}$  and  $\mathbf{d}_{k+1} = x^{k+1} - x^k$  and their inner product is derived.

**Keywords:** linear systems; SAOR method; error bound.