Experiments on gram - schmidt process and gram - schmidt process with reorthogonalisation

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Abstrak

This paper discusses the orthogonalisation process in Gram - Schimdt algorithms. Four variants of gram-schmidt process are presented, and the relation between matrix size and running time for computation is also discussed. Loss of orthogonality of the computed vectors in gram - schmidt process can be reducted to be close to the machine precision level by reorthogonalisation. Theorithically, the loss of orthogonality is bounded, and it is true that reorthogonalisation in gram - schmidt process works well when the computation is not overflow. However, when reorthogonalisation is applied, the backward error is becoming larger.