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 gramschmidt 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.
