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A STUDY ON CLOUD COMPUTING FOR GENERALIZED EIGENVALUE PROBLEM

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Abstract

In this paper, the feasibility of calculating generalized eigenvalue problem (GEP) $Ax = \lambda Bx$ based on the cloud computing approach is studied. Detailed analysis of subspace iteration method for GEP is provided and the numerical experiments are performed in the private cloud system based on MPI. The results show that the algorithm has high speedup ratio. The results also show that the efficiency of the cloud computing system is mainly determined by the communication data amount between the cloud brains.

Keywords and phrases: cloud computing, parallel computing, generalized eigenvalue problems, subspace iteration method.

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