PARALLEL COMPUTATION OF THE SINGULAR VALUE DECOMPOSITION ON TREE ARCHITECTURES

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Abstract

We describe three new Jacobi orderings for parallel computation of SVD problems on tree architectures. The first ordering uses the high bandwidth of a perfect binary fat-tree to minimise global interprocessor communication costs. The second is a new ring ordering which may be implemented efficiently on an ordinary binary tree. By combining these two orderings, an efficient new ordering, well suited for implementation on the Connection Machine CM5, is obtained.

Comments

Only the Abstract of [2] is given here. The full report appeared as [2], and a shorter version appeared as [3]. The idea of using an ordering adapted to the tree architecture was introduced by Lee, Luk and Boley in [1].

References

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