Efficiency Test of Iterative-Multifrontal Hybrid Solver

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Summary

A new concept of hybrid iterative-multifrontal linear solution method is presented for large scale structural analysis problems. Multifrontal solution method is the best direct solution method ever known, so it is adequate for Domain decompostion types of iterative solvers. Multifrontal solver is served as an internal subdomain solver for domain decomposition iterative solver for achieving high performance of domain decomposition iterative solver. Lagrange multiplier is introduced to enforce the continuity of interface between subdomains. And corner DOF is introduced to avoid singularities of subdomains. Hybrid solution method is expected to show good parallel performance for extremely large size structural analysis.

keywords: Hybrid solver, Domain decomposition, Multifrontal Solver, Parallel Computing

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