

Parallel Block-Preconditioners for Fluid-Structure-Interaction Problems

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ABSTRACT

The efficient solution of nonlinear monolithic fluid-structure interaction problems is still a challenging problem. In this work, we present a preconditioner based on an approximate block LU-factorization for the solution of the arising linear systems. As shown in our previous work [1], this preconditioner shows robust behavior with respect to the mesh- and timestep-size and various material parameters. Additionally, we investigate the parallel performance of our solver and observe similar scalability results as Crosetto et al [2], being the only reference of monolithic scalability tests to our knowledge.

REFERENCES

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