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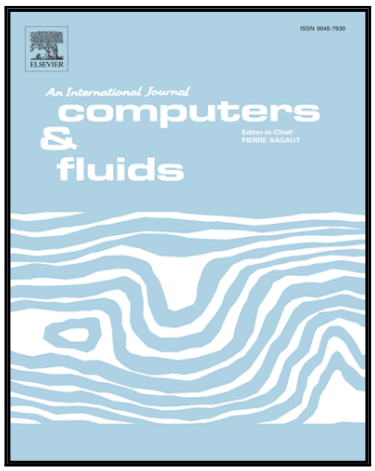

Block-selective algebraic multigrid for implicitly coupled pressure-velocity system

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Highlights

- Selective Algebraic Multigrid (SAMG) was implemented in OpenFOAM for implicitly coupled block-matrices.
- Block-SAMG was compared to Aggregative algorithm (AAMG) for the implicitly-coupled incompressible Navier-Stokes equations.
- The pressure equation was chosen as a primary matrix for coarsening and interpolation.
- Block-SAMG converges faster than AAMG and Krylov subspace solvers and to the prescribed convergence tolerance.
- Overall convergence of the implicitly coupled pressure-velocity solver is improved.

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