Multilevel Overlapping Schwarz Preconditioners for Fluid Problems

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Additive overlapping Schwarz Methods are domain decomposition methods for the solution of partial differential equations. A second level, the coarse problem, ensures scalability of these methods. One famous coarse space is the generalized Dryja–Smith–Widlund (GDSW) approach. In [2], monolithic overlapping Schwarz preconditioners for saddle point problems were introduced. We present parallel results for the solution of incompressible fluid problems by the combination of the additive overlapping Schwarz solvers implemented in the fast and robust overlapping Schwarz (FROSch) library, which is part of the Trilinos package ShyLU [4,3], and the FEATFLOW library [1].

References:

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