

Theoretical and numerical results for the optimized Schwarz domain decomposition methods with two levels

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We formulate and analyse a two level preconditioner for an optimised Schwarz method. The preconditioner is equipped with an automatic coarse space using two different generalized eigenvalue problems. The convergence rate of the two-level method is guaranteed regardless of the regularity of the coefficients. Some numerical examples are given on two and three dimensional heterogenous PDEs with hundreds of processes, clearly showing the effectiveness and the robustness of the proposed approach.

Références

- [1] R.HAFERSSAS, P.JOLIVET AND F.NATAF, *A Robust Coarse Space for Optimized Schwarz methods SORAS-GenEO-2*, submitted, 2015.