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**Outflow boundary conditions and domain decomposition method.** (English) [Zbl 0817.65077](#)

Keyes, David E. (ed.) et al., Domain decomposition methods in scientific and engineering computing. Proceedings of the 7th international conference on domain decomposition, October 27-30, 1993, Pennsylvania State University, PA, USA. Providence, RI: American Mathematical Society. Contemp. Math. 180, 289-293 (1994).

Summary: We consider an advection-diffusion problem. We write a Schur type formulation by using outflow boundary conditions on the interfaces. The condensed problem is solved by either a Jacobi algorithm (equivalent to an additive Schwarz method), GMRES, or BiCGstab. The use of outflow boundary conditions and of general iterative methods gives much better results than the original Schwarz method. For the entire collection see [\[Zbl 0809.00026\]](#).

**MSC:**

- [65M55](#) Multigrid methods; domain decomposition for initial value and initial-boundary value problems involving PDEs
- [65F10](#) Iterative numerical methods for linear systems
- [65M06](#) Finite difference methods for initial value and initial-boundary value problems involving PDEs
- [35K15](#) Initial value problems for second-order parabolic equations

Cited in **1** Document

**Keywords:**

[finite difference method](#); [domain decomposition](#); [convection-diffusion problem](#); [advection-diffusion problem](#); [outflow boundary conditions](#); [Jacobi algorithm](#); [additive Schwarz method](#); [GMRES](#); [BiCGstab](#)