The Third International Symposium on Domain Decomposition Methods for Partial Differential Equations which took place in Houston from March 20 to 22, 1989, was organized by SIAM with the assistance of the University of Houston. The conference was supported by the National Science Foundation, and GAMNI/SMAI. In addition, the symposium received the support of France’s diplomatic and cultural agencies. One of the few scientific events associated with the Celebration of the Bicentennial of the French Revolution, this meeting was attended by a large number of French participants. Included in this volume is an article written for SIAM News,* which places the conference in its historical context.

The scientific program of the symposium reflected the growing importance of domain decomposition methods for partial differential equations and the various aspects of their computer implementation, particularly those associated with parallelism. Included in this volume are most of the invited lectures and selected contributed talks. In a rather artificial way we have organized these proceedings in four parts: theory, algorithms, parallel implementation, and applications; many papers are relevant to more than one of these categories.

As far as we can tell, most of the 121 participants were quite happy to attend this symposium and, to the great pleasure of the organizers, this scientific event was considered by many to be one of the best symposia they have attended, particularly the talks on parallel computing. Future symposia on domain decomposition have already been planned; the next one will take place in Moscow in May 1990.

We would like to acknowledge the help of various people at SIAM and elsewhere who made the symposium and these proceedings possible.

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