

Groups and Computation II

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The workshop "Groups and Computation" took place at the Center for Discrete Mathematics and Theoretical Computer Science (DIMACS) at Rutgers University in June 1995. This and an earlier workshop (Groups and Computation, Finkelshtein and Kantor © 1993, American Mathematical Society) held in October 1991 was aimed at improving the theory and practice with in the broad area of computation with groups. The primary goal of the previous workshop was to foster a dialogue between theoreticians studying the computational complexity of group algorithms and those engaged in the development of practical software. It was expected that this would lead to a deeper understanding of the mathematical issues underlying group computation and that this understanding would lead in turn to faster algorithms. Comments and subsequent work indicated that this goal had been achieved beyond expectations. The second workshop was designed to continue the progress in these directions.

The scientific program consisted of invited lectures and research announcements, as well as informal discussions and software demonstrations. The talks included topics such as randomization, permutation groups, matrix groups, software systems, fast Fourier transforms and their applications to signal processing and data analysis, computations with finitely presented groups, and implementation and complexity questions. As in the previous workshop, speakers ranged from established researchers to graduate students.

DIMACS Series in Discrete Mathematics and Theoretical Computer Science, Volume 28; 1997, 382 pages; Hardcopy; ISBN 0-8218-0516-7; List \$99; Individual member \$30; order code: DIMACS/28/7A.

Spectral Graph Theory

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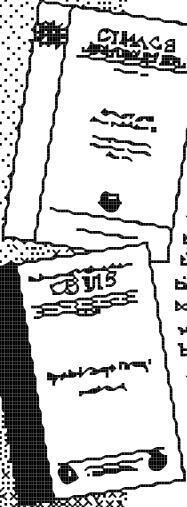
This monograph is an invited tutorial of a research area, with an emphasis on introducing a broad range of results about graphs. The author will be brief—how the spectral theory fundamental properties of a graph; how spectral graph theory links the discrete and continuous worlds; the connections through geometric, analytic and algebraic techniques, and to what eigenvalues, theory and application in communication and computer science come together in spectral harmony.

—from the Preface

Beautifully written and elegantly presented, this book is based on 10 lectures given at the CBMS workshop on spectral graph theory in June 1994 at Florida State University. Chung's well-written exposition can be followed by a combination with a good textbook—ones who not only give you the facts, but tell you what is really going on, why it is worth doing, and how it relates to similar ideas in other areas. The monograph is accessible to the nonexpert who is interested in reading about this involving area of mathematics.

CBMS Regional Conference Series in Mathematics, Number 92; 1997, 200 pages; Softcover; ISBN 0-8218-0315-8; List \$35; All individuals \$20; order code: CBMS/92/7A.

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Funding for the Fulbright Program is provided by the United States Information Agency, on behalf of the U.S. government, and by cooperating governments and host institutions abroad.

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—from CIES Announcement