REVIEWS AND DESCRIPTIONS OF TABLES AND BOOKS

The numbers in brackets are assigned according to the American Mathematical Society classification scheme. The 1980 Mathematics Subject Classification can be found in the December index volumes of Mathematical Reviews.

13[34E15, 35B25].—O. AXELSSON, L. S. FRANK & A. VAN DER SLUIS (Editors), *Analytical and Numerical Approaches to Asymptotic Problems in Analysis*, North-Holland, Amsterdam, 1981, xvi + 381 pp., 24 cm. Price $53.75/Dfl. 110.00.

This volume is the proceedings of a conference held in Nijmegen, The Netherlands, in mid-June of 1980. It contains 17 invited lectures and 11 contributed papers. Many articles are concerned with singular perturbations in differential equations.

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14[65F00].—MICHAEL T. HEATH (Editor), *Software Catalog*, Sparse Matrix Symposium in Fairfield Glade, Tennessee, October 24–27, 1982, Sponsors, U.S. Army Research Office, U.S. Office of Naval Research and Oak Ridge National Laboratory, 28cm.

From the preface:

This software catalog was prepared in conjunction with the Sparse Matrix Symposium in Fairfield Glade, Tennessee, October, 1982. It is intended to provide information on computer software for sparse matrix problems which should be useful to software developers and consumers alike. The information provided includes the problem domain to which the software is applicable, the method of solution, language and portability details, references to documentation, and a contact for further information or acquiring the software. This information is reported by means of a form which was filled out by each contributor for each item of software.

Contributions to the software catalog were solicited as part of the general announcement and call for papers for the Symposium which appeared in the official newsletters and other publications of several professional societies in mathematics, computer science, and operations research. There was also a mass mailing of general Symposium announcements to about 375 persons (mostly numerical analysts, applied mathematicians and computer scientists, plus a few engineers), and an additional mailing to about 80 persons which specifically solicited software catalog contributions. These efforts resulted in the submission of about 120 software forms. All submissions were accepted for inclusion in the catalog.

Thus, the catalog is about as complete as voluntary contributions can make it. In addition to containing virtually all of the software already well known to the sparse matrix community, many lesser-known packages are brought to light in these pages. The main area of sparse matrix software which is seriously underrepresented in the catalog is software for specific applications, such as structural analysis, in which modules which might have much wider applicability are buried within a much larger, special purpose package.

Most of the software forms have been photographically reproduced, exactly as received from the contributor. A few have been retyped for improved legibility (generally, those forms which were filled out by hand in pencil or colored ink). The accuracy of the information provided is therefore totally dependent on the individual contributors. The organizers and sponsors of the Symposium make no guarantee as to the accuracy of the information contained herein or the usefulness or validity of the software reported. The inclusion of information on a given item of software is not to be construed as an endorsement of it. It should be emphasized that this catalog is in no sense a software distribution service; in order to obtain any of the software discussed, the individual distributors listed on the forms must be contacted.

It is hoped that this catalog will provide a valuable service to the research and development community in the sparse matrix field and will also prove helpful to potential users in locating appropriate sparse matrix software. Perhaps it will become the basis for future efforts at even more comprehensive cataloging of software in sparse matrices as well as other areas.