

Strengths of the book include the demystification of some components of REDUCE as well as its implementation in LISP, and pointers to research papers and books with further details.

This text is recommended for serious REDUCE users as well as for the casual REDUCE user interested in learning more about the system.

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31[65–06, 68–06].—ROBERT E. O'MALLEY, JR. (Editor), *ICIAM 91: Proceedings of the Second International Conference on Industrial and Applied Mathematics*, SIAM, Philadelphia, PA, 1992, xviii+391 pp., 26 cm. Price \$61.50.

The conference in the title, sponsored internationally by 12 societies of Applied, Industrial and Computational Mathematics, was held July 8–12, 1991, in Washington, D.C. Part I of the proceedings contains the text of 17 invited presentations, Part II an account of over 160 minisymposia organized in 29 chapters according to subject areas.

The authors and titles of the invited papers in Part I are: J. M. Ball, Dynamic energy minimization and phase transformations in solids; G. I. Barenblatt, Intermediate asymptotics in micromechanics; M. Brady, Computer vision: mathematics and computing; R. Coifman, Y. Meyer & V. Wickerhauser, Adapted wave form analysis, wavelet-packets and applications; A. R. Conn, N. Gould & Ph. L. Toint, Large-scale nonlinear constrained optimization; C. N. Dawson & M. F. Wheeler, Time-splitting methods for advection-diffusion-reaction equations arising in contaminant transport; W. Eckhaus, On modulation equations of the Ginzburg-Landau type; A. Fasano, Modelling the solidification of polymers: an example of an ECMI cooperation; M. Grötschel, Discrete mathematics in manufacturing; F. L. Chalot & T. J. R. Hughes, Analysis of hypersonic flows in thermochemical equilibrium by application of the Galerkin/least-squares formulation; N. Karmarkar, Interior-point methods in optimization; P. L. Lions, Viscosity solutions and optimal control; M. Mimura, Dynamics of patterns, waves, and interfaces from the reaction-diffusion aspect; J. D. Murray, Complex pattern formation in embryology: models, mathematics, and biological implications; G. Ruget, Trends in radar architectures; D. J. Wallace, Massively parallel computing: status and prospects; H. Yserentant, Hierarchical bases.

A useful feature in Part II is a list of suggested reading appended to each chapter.

The volume, which is attractively sprinkled with photographs of speakers and participants, ends with an author index and a list of attendees.

W. G.

32[65C10, 68Q15, 94A60].—NOAM NISAN, *Using Hard Problems to Create Pseudorandom Generators*, An ACM Distinguished Dissertation 1990, The MIT Press, Cambridge, MA, 1992, x+43 pp., 23½ cm. Price \$20.00.

This book is a slightly revised version of the author's doctoral dissertation written under the supervision of R. Karp at Berkeley. It deals with pseudoran-