

is shown how one can use these to represent the image corresponding to a conjecture of David Marr. Finally, one paper uses wavelets for ridge and skeleton extraction.

The *numerical analysis* section contains discussions on the representation and compression of operators using wavelets which leads to fast algorithms for linear algebra and on wavelets for the solution of nonlinear, time-dependent PDE's. In the *other applications* section topics such as the optical wavelet transform, along with connections between wavelets and turbulent flows, and wavelets and quantum mechanics are addressed.

Finally, the *theoretical developments* section has papers on spline wavelets, Gabor expansions, and the ϕ -transform, an independent development based on the same principles as the wavelet transform.

This book has some of the founders and top wavelet researchers among its editors and contributors. The quality of the papers is very high and they were chosen to cover the different developments in the field. It should be clear that this volume cannot be seen as an introduction to wavelets. It is ideal for people who are familiar with the basics of wavelets and want to find out more about the state of the art and the directions in which the field is moving. Be aware however of the fact that, as this is a rapidly evolving area, some very recent developments are unavoidably not covered.

WIM SWELDENS

Proceedings

A. A. GONCHAR AND E. B. SAFF, Eds., *Progress in Approximation Theory*, Springer-Verlag, New York/Berlin, 1992, xviii + 455 pp.

These are the proceedings of an international conference on approximation theory that was held March 19–22, 1990, at the University of South Florida, Tampa. The conference was the first U.S.A.–U.S.S.R. meeting with various approximators from the U.S.A. and the (former) U.S.S.R., together with a delegation of scientists from Europe, North America, and Asia. The 19 contributions in this volume are by invitation of the editors. All these contributions give a clear overview of current research and the authors have been given enough room to present not only new results but also detailed perspectives and open problems. Subjects covered are q -hypergeometric functions, orthogonal polynomials and expansions, Padé and Hermite–Padé approximation, wavelets and fractals, approximation by entire functions, inequalities for univalent functions, rearrangements of functions, harmonic analysis, estimates of the de Bruijn–Newman constant, and approximation by weighted polynomials.

A. A. GONCHAR AND E. B. SAFF, Eds., *Methods of Approximation Theory in Complex Analysis and Mathematical Physics*, Nauka, Moscow, 1992, 222 pp.; will also appear in *Lecture Notes of Mathematics*, Vol. 1550, Springer-Verlag.

The international conference in Tampa (see the previous review) was followed by a second conference in Leningrad (St. Petersburg, Russia), May 13–26, 1991. This volume contains 19 selected papers on orthogonal polynomials, wavelets, rational approximation, harmonic functions, and constructive approximation theory.

S. BARON AND D. LEVIATAN, Eds., *Approximation, Interpolation and Summability*, Israel Mathematical Conference Proceedings, Bar-Ilan University, 1991, xvi + 284 pp.; available from American Mathematical Society.

These are the proceedings of an international conference held at Tel-Aviv University and Bar-Ilan University, Israel, on June 4–8, 1990, in honor of Amnon Jakimovski on his 65th