

**9[41-06, 41A63].**—C. K. CHUI, W. SCHEMPP & K. ZELLER (Editors), *Multivariate Approximation Theory*, International Series of Numerical Mathematics, Vol. 90, Birkhäuser, Basel, 1989, ix + 342 pp., 24 cm. Price \$63.00.

Interest in Multivariate Approximation Theory has increased considerably in the past few years because of its important applications in diverse areas of science and engineering. Multivariate approximation methods have always been important for data interpolation and approximation, cubature, and for the numerical solution of boundary value problems (the finite element method). More recently, multivariate approximation methods have assumed an important role in CAD/CAM (computer-aided design and manufacture), robotics, image processing, pattern recognition, signal processing, and elsewhere.

The keen interest in the field has resulted in a considerable increase in both the number of publications in the area (several new journals have been started in the past few years), and in the number of conferences being held on the subject. The book under review is the proceedings of one such recent conference held at Oberwolfach, Germany from February 12 to 18, 1989.

The book contains 37 complete research papers. Eight of the papers deal with multivariate splines of one sort or another (for example, the dimension and construction of local bases, box splines, blending, vector spherical splines, polyharmonic splines, and exponential eigensplines). Another group of seven papers deals with periodic interpolation and approximation (including sampling theorems, cardinal interpolation, Fourier integrals and transforms, trigonometric operators, convolution methods, Hermite-Birkhoff interpolation, and Bochner-Riesz means). Several papers deal with polynomials and rational functions ( $L_p$  approximation, Bernstein methods, quasi-interpolation). Two papers deal with radial basis functions, and two with band-limited functions. There are also papers on cubature, wavelets, and on holograms and neural networks. The book will be of interest to approximation theorists and to all parties who make use of approximation methods.

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**10[41-01, 41A15, 68U05].**—SU BU-QING & LIU DING-YUAN, *Computational Geometry: Curve and Surface Modeling*, Academic Press, Boston, 1989, x + 295 pp., 23½ cm. Price \$39.95.

Mathematical methods for dealing with curves and surfaces are important tools in a number of traditional areas (such as data interpolation and fitting, quadrature and cubature, and numerical solution of operator equations such as ordinary and partial differential equations, integral equations, etc.). More recently, they have become increasingly important in several newer, rapidly developing areas such as CAD/CAM (computer-aided design and manufacture), robotics, and image processing. This increased interest has spawned numerous publications, several new journals, a plethora of conferences, and several books.