The present book explores mainly levels 2 and 3 (for level 1, there is only a short mention on Remez algorithm) from an elementary point of view (the advanced theory is the subject of Vol. 304 of the series, i.e., the book *Constructive Approximation: Advanced Problems*, by von Golitschek *et al.*). By elementary, it is meant that this book succeeds in giving an encyclopedic account of whatever has been achieved in real polynomial, trigonometric, and spline approximation from the nineteenth century to the present day. Much more, this impressive material is organized in 13 chapters (theorems of Weierstrass; spaces of functions; best approximation; properties of polynomials, splines, K-functionals and interpolation spaces; central theorems of approximation [which is indeed Chapter 7 in a set of 13]; influence of endpoints in polynomial approximation; approximation by operators; Bernstein polynomials; approximation of classes of functions and Müntz theorems; spline approximation; spline interpolation; and projections onto spline spaces) where key ideas are given with the appropriate degree of abstraction (Banach spaces, for instance), followed by concrete realizations on usual function spaces (on an interval of $\mathbb{R}$ or on the circle $\mathbb{T}$ in most cases). Proofs are given if they are not too technical or beyond the scope of the book; motivations and comments are always present. Each chapter ends with more bibliographic and historical remarks. The balance between exposition of general principles and small detail is always carefully established; for instance, the authors emphasize the importance of rearranging invariant function spaces to avoid some pathological phenomena (Chapters 2 and 9).

Obviously a reference book, it is ideal as a textbook for a solid introduction to the subject, *vaut le voyage* (*three stars*, * * *, *highest mark in the Michelin Hotels & Restaurants Guide*).

ALPHONSE MAGNUS

V. N. TEMLYAKOV, *Approximation of Periodic Functions*, Nova Science, 1993, ix + 419 pp.

The main focus of this book is the study of approximation of periodic functions of several variables. The book opens with a lengthy introduction (pp. 1–23) which contains classical results from analysis that are used in the text. Standard results on L_p spaces and Fourier series and some well-known inequalities are summarized.

Chapter 1 (pp. 25–129) reviews fundamental results in the approximation of periodic functions of a single variable. Topics dealt with in this chapter include: (1) classical approximation theorem for periodic functions of a single variable, (2) Bernstein–Nikol'skii inequalities, (3) approximation of functions in certain classes, (4) width of certain classes of periodic functions, and (5) quadrature formulas and optimal recovery results. Chapter 2 (pp. 131–189) has the same structure as Chapter 1 except that it deals with functions of several variables. One of the nice features of the book is that this structure assists the reader to see more clearly how results dealing with the univariate case may be generalized to the multivariate case. One can compare Chapters 1 and 2, section by section. Chapter 3 (pp. 191–317) also employs the basic structure as set down in Chapter 1 except that it deals with functions of several variables with bounded mixed derivatives. Again, the constant structure assists the reader to make comparisons. In this chapter, the author draws heavily on his own contributions to the field. The final chapter (Chapter 4, pp. 319–390) deals with cubature formulas and optimal recovery of functions of several variables.

Overall, the book deals with an important topic which is not treated well in other books. The results presented draw heavily from journals published in the former Soviet Union. This may assist researchers from other parts of the world in developing their bibliographies. However, the typesetting and general editing of the book are disappointing. The publishers may wish to encourage the author to write a revised or second edition which is more reader-friendly.

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