F. SCHIPP, W. R. WADE, AND P. SIMON WITH ASSISTANCE FROM J. PÁL, *Walsh Series, An Introduction to Dyadic Harmonic Analysis*, Akadémiai Kiadó, 1990, 560 pp.

Simple examples of the Walsh functions are the 1-periodic function r and its dyadic dilations $r(2^n \cdot)$, where $r(x) = 1$ for $x \in [0, \frac{1}{2})$ and $r(x) = -1$ for $x \in [\frac{1}{2}, 1)$. These functions are very useful in many applications, typically in data signal processing. This book gives a thorough introduction to the theory of Walsh–Fourier analysis. It starts with two chapters of basics, including the Walsh functions, the dyadic group, the dyadic derivative, the Walsh–Fourier coefficients and series, and convergence and summability. Chapter 3 is about dyadic martingales, Hardy spaces, and various dyadic maximal functions. It ends with the proof of the almost everywhere convergence of Walsh–Fourier series of L^p $(p > 1)$ functions. Chapter 6 provides other sufficient conditions for almost everywhere convergence and summability. Norm convergence and the set of divergence of Walsh–Fourier series are examined in Chapter 4, where one can also find a proof of the existence of an L^1 function with almost everywhere divergent Walsh–Fourier series. Walsh polynomial approximation and the study of bases make up Chapter 5. Results about uniqueness and representation may be found in Chapters 7 and 8. The book ends with a chapter on the Walsh–Fourier transform. Each chapter contains exercises and historical comments.

JOHN ZHANG

J. SZABADOS AND P. VÉRTESI, *Interpolation of Functions*, World Scientific, 1990, 305 pp.

As can be expected, given the authors and the title of the book, this is a very careful and exhaustive treatment of interpolation by univariate polynomials, mostly algebraic, with the usual connections to the trigonometric case. It is the proverbial book nobody in the area can do without. The chapter headings tell the story:

I. Lagrange Interpolation;

II. Some Convergent Interpolatory Processes;

III. The Lebesgue Function and Lebesgue Functions-Type Sums;

IV. Divergence of Lagrange Interpolation;

V. Hermite-Féjer and Hermite-Féjer Type Interpolations;

VI. Comparison of Lagrange and Hermite-Féjer Interpolations;

VII. Some Problems in the Theory of Lacunary Interpolation;

VIII. Miscellaneous Problems;

IX. Appendix: Some Frequently Used Relations and Theorems.

Each chapter ends with a section on "Problems and results" or "Problems and remarks." The discussion is almost entirely in the uniform metric. Survey books such as this could be even more useful if each item in the bibliography were to include the page number(s) at which the item is cited.

CARL DE BOOR

B. GOLUBOV, A. EFIMOV, AND V. SKVORTSOV, *Walsh Series and Transforms*, Kluwer Academic, 1991, 368 pp.

Orthogonal systems (such as orthogonal polynomials, trigonometric series, and wavelets), their theories, and applications have been intensively studied. The Walsh functions, discovered in 1923, are suitable for signal processing, image processing, and many related areas because