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is presented with detailed analysis and illustrations combined with historical information. The author covers the appearance of the Gibbs phenomenon in Fourier analysis, orthogonal expansions, integral transforms, splines and wavelet approximations. Methods of reducing, or filtering out, such phenomena that cover all the above function representations are also addressed. The book includes a thorough bibliography of some 350 references.

### *Transformations intégrales, calcul opérationnel*

M.W. WONG. — **Weyl transforms.** — Universitext. — Un vol. relié,  $16 \times 24$ , de VIII, 158 p. — ISBN 0-387-98414-3. — Prix: DM 89.00. — Springer, New York, 1998.

The functional analytic properties of Weyl transforms as bounded linear operators on  $L^2(\mathbf{R}^n)$  are studied in terms of the symbols of the transforms. The boundedness, the compactness, the spectrum, and the functional calculus of the Weyl transform are proved in detail. New results and techniques on the boundedness and compactness of the Weyl transforms in terms of the symbols in  $L^r(\mathbf{R}^{2n})$  and in terms of the Wigner transforms of Hermite functions are given. Background materials are given in adequate detail to enable a graduate student to proceed rapidly from the very basics to the frontier of research in an area of operator theory.

### *Equations intégrales*

Donal O'REGAN and Maria MEEHAN. — **Existence theory for nonlinear integral and integrodifferential equations.** — Mathematics and its applications, vol. 445. — Un vol. relié,  $16,5 \times 24,5$ , de 218 p. — ISBN 0-7923-5089-8. — Prix: Dfl. 190.00. — Kluwer Academic Publishers, Dordrecht, 1998.

This book presents an up-to-date account of many topics of current interest in the theory of nonlinear ordinary differential equations. They include fixed point theory, periodic problems, lower and upper surfaces, positive and semi-positive problems, singular equations, limit circle problems, finite and infinite interval problems, and impulsive differential equations. In addition many important applications are presented to complement the theory.

### *Analyse fonctionnelle et théorie des opérateurs*

Ernst ALBRECHT, Martin MATHIEU, (Editors). — **Banach algebras '97.** — Proceedings of the 13<sup>th</sup> International Conference on Banach Algebras, held at the Heinrich Fabri Institute of the University of Tübingen in Blaubeuren, July 20 — August 3, 1997. — Un vol. relié,  $18 \times 24,5$ , de IX, 566 p. — ISBN 3-11-015466-8. — Prix: DM 328.00. — Walter de Gruyter, 1998.

This volume contains refereed research articles on Banach algebras and related areas by speakers at the 13<sup>th</sup> International Conference on Banach algebras 1997. Particular topics include algebraic structure of Banach algebras, dual Banach algebras and invariant subspaces, automatic continuity, local spectral theory, algebras of analytic functions, amenability and Banach homology as well as applications in harmonic analysis. Some papers discuss the interplay with Fredholm theory, differential and pseudo-differential operators, several variable spectral theory or nonassociative normed algebras. This book is of interest to researchers and graduate students in functional analysis, algebra, and topology.

Sergey BAGDASAROV. — **Chebyshev splines and Kolmogorov inequalities.** — Operator theory: advances and applications, vol. 105. — Un vol. relié,  $17,5 \times 24$ , de XIII, 205 p. — ISBN 3-7643-5984-6. — Prix: SFr. 148.00. — Birkhäuser Verlag, Basel, 1998.

This monograph describes advances in the theory of extremal problems in classes of functions defined by a majorizing modulus of continuity  $\omega$ . In particular, an extensive account