Contents

Preface xi

Limit theorems for some hypergroup structures on $\mathbb{R}^n \times [0, \infty[$
N. Ben Salem and M. N. Lazhari 1

Nuclear spaces of test functions connected with hypercomplex systems and representations of such systems
Yu. M. Berezansky 15

Hypercomplex systems and hypergroups: Connections and distinctions
Yu. M. Berezansky and A. A. Kalyuzhnyi 21

The Hardy-Littlewood maximal function for Chébli-Trimèche hypergroups
Walter R. Bloom and Zengfu Xu 45

Sturm-Liouville hypergroups
H. Chébli 71

Continuous 2-variable polynomial hypergroups
William C. Connett and Alan L. Schwartz 89

A survey of Fourier algebras
Pierre Eymard 111

Expansion in series of Laguerre functions for solution of perturbed Laguerre equations
A. Fitouhi and M. M. Hamza 129

Asymptotic behaviour of the paths of random walks on some commutative hypergroups
Léonard Gallardo 135

Bounded measures algebras: A fixed point approach
Marc-Olivier Gebuhrer 171

Progress in the theory of probability on hypergroups
Herbert Heyer 191

Discrete hypergroups associated with compact quantum Gelfand pairs
TOM H. KOORNWINDER 213

Transmutation operators and the inverse spectral problem
B. M. LEVITAN 237

Limit theorems for the spin process
MOHAMMED MABROUKI 245

Differential operators with matrix coefficients and transmutations
N. H. MAHMOUD 261

Generalized product formula for orthogonal polynomials
B. P. OSILENKER 269

An infinitesimal algebra of the hypergroup generated by double cosets and nonlinear differential equations
G. B. PODKOLZIN 287

Convolution algebras which are not necessarily positivity-preserving
MARGIT RÖSLER 299

Signed hypergroups—a survey
KENNETH A. ROSS 319

On the relation between subfactors and hypergroups
V. S. SUNDER 331

Connection coefficients of orthogonal polynomials with applications to classical orthogonal polynomials
RYSZARD SZWARC 341

Generalized transmutation and translation operators associated with partial differential operators
K. TRIMECHE 347

Gel'fand pairs of quantum groups, hypergroups and q-special functions
LEONID VAINERMAN 373

Central limit theorems for Jacobi hypergroups
MICHAEL VOIT 395

Finite commutative hypergroups and applications from group theory to conformal field theory
N. J. WILDBERGER 413

Kolmogorov's three series theorem on one-dimensional hypergroups
HANSMARTIN ZEUNER 435