



**PREFACE: ANALYSIS AND RELATED TOPICS DEDICATED TO
PROFESSOR PALLE JORGENSEN ON THE OCCASION OF
HIS 75TH BIRTHDAY**

SIMEON REICH AND A. J. ZASLAVSKI

Special Issue on Analysis and Related Topics dedicated to Professor Palle Jorgensen on the occasion of his 75th birthday

Preface by Simeon Reich and Alexander Zaslavski

This special issue on Analysis and Related Topics is dedicated to Professor Palle Jorgensen on the occasion of his 75th birthday

Professor Palle Jorgensen is an outstanding Danish-American mathematician who is a Professor of Mathematics at the University of Iowa. Professor Jorgensen has made fundamental contributions to pure and applied mathematics – operator algebras, harmonic analysis, probability, stochastic analysis, dynamics, machine learning, and mathematical physics (quantum information). His recent research involves wavelet theory, multi-resolution, subdivision algorithms, image processing, spectral-tile duality, scaling and fractals. He has authored 11 books and around 380 publications and supervised 34 PhD students. Palle Jorgensen is a Fellow of the American Mathematical Society. Before joining the University of Iowa, he taught at Stanford University and at the University of Pennsylvania. His research has been funded by the National Science Foundation.

In this special issue we present papers authored by a select group of experts in the areas of Mathematical Analysis and its applications. The special issue contains sixteen papers contributed by researchers in Mathematical Analysis from Canada, China, Denmark, Germany, Japan, Norway, Romania, the UK, and the USA.

These papers cover a wide spectrum of important problems and topics of current research interest, including scaled hyperbolic numbers induced by scaled hyper-complex rings, rational discrete analytic functions on a rhombic lattice, isometries, reproducing formulas, stability and functional calculus, holomorphic extension of one-parameter operator groups, frame-like Fourier expansions for finite Borel measures, free random variables followed by the semicircular law, non-Archimedean mathematical physics, non-unital generalized tracially approximated C^* -algebras, simplicity of $*$ -algebras of non-Hausdorff Z_2 -multispinal groupoids, obstructions to frame vectors and group representations, R -coactions on C^* -algebras, the Banach $*$ -algebra associated with a dynamical system based on Z , outer actions of finite groups on prime C^* -algebras and duality, palindromic polynomials over finite fields, weights, traces and K -theory, and duality principles for a class of positive definite kernels on LCA groups.

We hope that this special issue is of importance for many mathematicians interested in recent developments in Mathematical Analysis as well as in its diverse applications.

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