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PREFACE: APPROXIMATION THEORY AND RELATED TOPICS

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Dedicated to Professor Dany Leviatan on the occasion of his 80th birthday

This special issue on Approximation Theory and Related Topics is dedicated to Professor Dany Leviatan on the occasion of his 80th birthday.

Dany Leviatan (born on 21 February 1942) is an outstanding Israeli mathematician who made significant contributions to approximation theory, including shape preserving approximation by polynomials and splines, degree of approximation, positive approximation operators, and wavelets.

Dany Leviatan completed his B. Sc. and M. Sc. at the Hebrew University of Jerusalem. A participant in the Academic Reserve (Atuda) program, Leviatan served as a mathematician in the Israel Air Force while working on his doctorate at the Hebrew University, which he completed in 1966.

He was a visiting professor at the University of Illinois Urbana-Champaign from 1967 to 1970 through the Fulbright Scholarship Program, became associate professor at Tel Aviv University in 1972 and full professor in 1976. Professor Leviatan served as head of the university's Department of Mathematics from 1972 to 1974 and as dean of the Faculty of Exact Sciences from 1976 to 1980. He served as head of the then recently established School of Mathematics from 1982 to 1986.

Professor Leviatan was appointed rector of Tel Aviv University on 16 August 2005, a position he held until 2010.

He briefly served as acting president of the university following the resignation of Professor Zvi Galil in July 2009.

He has authored around 180 publications and has edited two books.

In this special issue we present papers authored by a select group of experts in the areas of Approximation Theory and its applications. The special issue contains twelve papers contributed by researchers from Canada, Germany, Israel, Poland, Ukraine and the USA. These papers cover a wide spectrum of important problems and topics of current research interest, including characterizing higher order convexity of functions by inequalities of Bernstein polynomials, sparse Besov space analysis of deep learning representation layers in high dimensions, spectral gaps for Jacobi matrices on graphs, metrically differentiable set-valued functions and their local linear approximants, minimal polynomial extensions and projections onto the lines in $L^p[-1,1]$, the Fourier transform of a subharmonic function, the distribution of eigenvalues of smooth toeplitz matrices, wavelets and autoregressive image generation, polynomial interpolation on arbitrary varieties, Whitney-type estimates for convex functions, Leviatan estimates application to the constructive spa of periodic functions, and the Krasnoselskii-Mann algorithm od for common coincidence problems.

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

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