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Nota di contenuto	Mapping Properties of Maximal Functions on Graded Lie Groups -- An Invitation to Quantum Field Theory and to its Interplay with Microlocal Analysis and PDEs -- Fourier Analysis via Mild Distributions: Group Theoretical Aspects -- On the Theory of Functions of Omega-Bounded Type -- Subsequences of Sequences of Multiple Partial Trigonometric Fourier Sums -- A Vectorial Free Boundary Transmission Problem (A Short Exposition) -- On the 2-Analogue of the Inverse Source Heat Equation -- On Typical and Atypical Asymptotic Behavior of Singular Solutions to Emden–Fowler Type Equations -- Some Harmonic Bergman-Type Projections on Besov and Bloch Spaces -- On a Dirichlet Problem for a Properly Elliptic Equation in the Space of Continuous Functions, in the Case of Multiple Roots -- On the Behavior of Fourier Coefficients in the Trigonometric System -- Discrete-Time Replicator

Equations, Gradient Vector Fields of Nonlinear Mappings, and Optimal Transport Networks -- Deviation Identity for Linear Differential Operators and Its Application to Obstacle Problems -- Nonlinear Approximation with Respect to the Walsh Generalized System -- On the Convergence of Negative-Order Cesaro Means of Fourier and Fourier-Walsh Series -- Irreversibility of a Classical Three-Body Problem: Complexity of a Low-Dimensional System -- On Polynomial Solutions of a PDE with Constant Coefficients -- On Weighted Integral Operators for Solution of Equation in the Siegel Domain of n -- On Directionally-Differentiable Selections of Set-Valued Mappings -- On the Convergence of Hard Sampling Operators -- Orientation-Dependent Section Distributions for Convex Bodies -- On the Issues of Modeling the Elimination of Deadlock Situations and Synchronization Problems Using Petri Nets -- Generalized Abel-Plana Formula as a Renormalization Tool in Quantum Field Theory -- On the Universal Functions for Weighted Spaces -- On the Convergence Fourier-Vilenkin Series -- On the Universal Functions for Weighted Spaces -- Construction of a Mathematical Model and Optimization of the Bending of a Beam -- Delaunay Triangulation in Numerical Solution of Two-Dimensional Boundary Value Problems -- Normal Solvability and Fredholm Properties for Regular Hypoelliptic Operators.

Sommario/riassunto

The present volume collects extended abstracts of lectures and talks presented at the Summer School and Conference "Analysis, PDEs and Applications" held 24 June - 6 July 2024 at Yerevan State University, Armenia. The thematic scope of contributions includes linear and non-linear partial differential equations, spectral theory and microlocal analysis, harmonic and functional analysis, theory of functions and approximation theory, and applications in mathematical physics. Each talk or lecture begins with a survey of a body of mathematical work, either classic or modern, leading up to recent advances. This is followed by an exposition of either a specific research problem or a broader area of modern mathematical research, presented by an expert in the field. The volume will be of interest to not only students and young researchers, but also experts looking for a crash course in the main concepts and ideas in one of the many advanced mathematical topics discussed.
