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Localization for Spherical Partial Sums of Multiple Fourier Series -- Regularization Methods for Solving Inverse Problems: A Comprehensive Review -- The Application of Spectral Resolution of a Self-Adjoint Operator to Approximate Elliptic Source Identification Problem with Neumann-Type Integral Condition -- A Note on Numerical Solution of a Parabolic Source Identification Problem with Involution and Robin Condition -- Part III Differential Equations and Their Applications -- On Sixth Order of Accuracy Four-Step Difference Schemes for the Fourth-Order Differential Equations -- Study of the Problem of One-Dimensional Flow of Homogenous Fluids in Fractal Porous Media -- Nonlocal Initial-Boundary Value Problems for a Degenerate Hyperbolic Equation -- On Well-Posedness of the Nonlocal Boundary Value Problem with Samarskii-Ionkin Conditions for the 2m-th Order Multidimensional Elliptic Equations -- Smoothness for Degenerate Elliptic Equations with Matrix Weights -- Stability Analysis of Differential Equations Using Mohand Integral Transform -- Part IV Modeling and Applications -- Mathematical Issues of Difference Schemes for Atmospheric Boundary Layer Equations -- Application of Adjoint Equations for Numerical Solution of Problems Using the Fictitious Domain Method -- Numerical Modeling of Diffusion Processes with Variable Density and Source in Two-Componential Nonlinear Media -- An Extensive Simulation Study for Evaluation of Penalized Variable Selection -- Constrained Switching of Exponentially Stable Time-Delay Systems: Perspectives and Open Questions -- A Regularization Method for an Inverse Problem Represented by a First-Kind Integral Equation.

Sommario/riassunto

This book presents extended abstracts of the Analysis and Applied Mathematics seminar organized jointly by Bahçeehir University, Istanbul, Turkey, Ghent Analysis & PDE Center, Ghent University, Ghent, Belgium and the Institute Mathematics & Math. Modeling, Almaty, Kazakhstan. The book is of value to professional mathematicians as well as advanced students in the fields of analysis and applied mathematics. The goal of the seminar is to provide a forum for researchers and scientists from different regions to communicate their recent developments and to present their original results in various fields of analysis and applied mathematics. All of the articles contain new results and are peer-reviewed. The volume reflects the latest developments in the area of analysis and applied mathematics and their interdisciplinary applications.