

Contents

Preface vii

N. Bez and M. Sugimoto
Optimal Constant for a Smoothing Estimate of Critical Index 1

T.B.N. Bui and M. Reissig
The Interplay Between Time-dependent Speed of Propagation
and Dissipation in Wave Models 9

F. Colombini, D. Del Santo, F. Fanelli and G. Métivier
A Note on Complete Hyperbolic Operators with
log-Zygmund Coefficients 47

E. Cordero, F. Nicola and L. Rodino
A Few Remarks on Time-frequency Analysis of Gevrey, Analytic
and Ultra-analytic Functions 73

S. Coriasco, K. Johansson and J. Toft
Global Wave-front Sets of Intersection and Union Type 91

V. Fischer and M. Ruzhansky
A Pseudo-differential Calculus on Graded Nilpotent Lie Groups 107

G. Garello and A. Morando
 L^p Microlocal Properties for Vector Weighted
Pseudodifferential Operators with Smooth Symbols 133

D. Grieser and E. Hunsicker
A Parametrix Construction for the Laplacian
on $\mathbb{Q}$ -rank 1 Locally Symmetric Spaces 149

N. Habal, W. Rungtrottheera and B.-W. Schulze
A Class of Elliptic Operators on a Manifold with Edge
and Boundary 187

<i>C. Iwasaki</i>	
A Representation of the Fundamental Solution for the Fokker-Planck Equation and Its Application	211
<i>B. Kanguzhin and N. Tokmagambetov</i>	
The Fourier Transform and Convolutions Generated by a Differential Operator with Boundary Condition on a Segment	235
<i>S. Katayama and H. Kubo</i>	
Global Existence for Quadratically Perturbed Massless Dirac Equations Under the Null Condition	253
<i>M. Lassas and T. Zhou</i>	
Singular Partial Differential Operators and Pseudo-differential Boundary Conditions in Invisibility Cloaking	263
<i>T. Matsuyama</i>	
Perturbed Besov Spaces by a Short-range Type Potential in an Exterior Domain	285
<i>T. Nishitani</i>	
On the Cauchy Problem for Hyperbolic Operators with Double Characteristics, a Transition Case	311
<i>S. Ya. Serovajsky</i>	
Differentiation Functor and Its Application in the Optimization Control Theory	335
<i>K. Shakenov</i>	
The Solution of the Initial Mixed Boundary Value Problem for Hyperbolic Equations by Monte Carlo and Probability Difference Methods	349
<i>S. Tikhonov and M. Zeltser</i>	
Weak Monotonicity Concept and Its Applications	357
<i>Y. Wakasugi</i>	
Critical Exponent for the Semilinear Wave Equation with Scale Invariant Damping	375
<i>K. Yagdjian</i>	
Semilinear Hyperbolic Equations in Curved Spacetime	391