The Centre de Recherches Mathématiques (CRM) of the Université de Montréal was created in 1968 to promote research in pure and applied mathematics and related disciplines. Among its activities are special theme years, summer schools, workshops, postdoctoral programs, and publishing. The CRM is supported by the Université de Montréal, the Province of Québec (FQRNT), and the Natural Sciences and Engineering Research Council of Canada. It is affiliated with the Institut des Sciences Mathématiques (ISM) of Montréal. The CRM may be reached on the Web at www.crm.math.ca.
Contents

Preface vii

A Self-Contained Proof of the Strong-Type Capacitary Inequality for the Dirichlet Space

Omar El-Fallah, Karim Kellay, Javad Mashreghi, and Thomas Ransford 1

A Simple Numerical Approach to the Riemann Hypothesis

N. Tarkhanov 21

A Survey of Linear Extremal Problems in Analytic Function Spaces

Catherine Bénéteau and Dmitry Khavinson 33

A Unifying Construction for Measure-Valued Continuous and Discrete Branching Processes

Lucian Beznea, Oana Lupașcu, and Andrei-George Oprina 47

Compactifications of the Plane and Extensions of the Disc Algebra

V. Nestoridis 61

Examples of Quantitative Universal Approximation

Thomas Kalmes, Markus Nieß, and Thomas Ransford 77

Harmonic Mappings with Quadrilateral Image

Jane McDougall 99

Hartogs Phenomenon on Unbounded Domains—Conjectures and Examples

Al Boggess, Roman J. Dwilewicz, and Zbigniew Slodkowski 117

Integration Formulae and Kernels in Singular Subvarieties of \( \mathbb{C}^n \)

Luis M. Hernández-Pérez and Eduardo S. Zeron 135

Invariant Potential Theory, Derivatives of Inner Functions, and \( B^{p,q} \) Spaces in the Unit Ball of \( \mathbb{C}^n \)

Manfred Stoll 149

Logarithmic Hölder Estimates of \( p \)-Harmonic Extension Operators in a Metric Measure Space

Tsubasa Itoh 163

Meromorphic Approximation on Noncompact Riemann Surfaces

Nadya Askaripour and André Boivin 171

On a Family of Outer Functions

Javad Mashreghi 193
On $C^m$-Subharmonic Extension Sets of Walsh-Type
   P. V. Paramonov 201

On Maximal Plurisubharmonic Functions
   A. Sadullaev 211

On Universality of Series in Banach Spaces
   Richard Fournier and Jérôme-Melville Giguère 217

Orlicz Capacity of Balls
   Yoshihiro Mizuta and Takao Ohno 225

Potential Analysis on Nonsmooth Domains—Martin Boundary and Boundary Harnack Principle
   Hiroaki Aikawa 235

Potential Theory on Trees and Multiplication Operators
   David Singman 255

Recent Progress on Fine Differentiability and Fine Harmonicity
   Stephen J. Gardiner 283

Reversibility Questions in Groups Arising in Analysis
   Anthony G. O'Farrell 293

Subordinate Harmonic Structures in an Infinite Network
   Victor Anandam 301

The Generalized Binomial Theorem
   Murali Rao 315

Uniform and $C^m$-Approximation by Polyanalytic Polynomials
   Konstantin Yu. Fedorovskiy 323