

数理解析研究所講究録 1669

# ポテンシャル論とその関連分野

京都大学数理解析研究所

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*RIMS Kôkyûroku 1669*

*Potential Theory and its related Fields*

*February 16~18, 2009*

*edited by Masaharu Nishio*

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*Research Institute for Mathematical Sciences*

*Kyoto University, Kyoto, Japan*

This is a report of research done at the Research Institute for Mathematical Sciences, Kyoto University. The papers contained herein are in final form and will not be submitted for publication elsewhere.

## Preface

This is the proceedings of the conference entitled

“Potential Theory and its related Fields”,

which was held at the RIMS (Research Institute for Mathematical Sciences) during Monday 16th – Wednesday 18th, February, 2009.

The conference was supported in part by the RIMS and the Japan Society for the Promotion of Science (Grant-in-Aid for Scientific Research (A) 20244007). In this conference, there were 17 talks. Most of the papers in this volume are based on the talks.

The organizer thanks all the participants and the speakers. He would also like to express his gratitude to the RIMS for the support of the conference and the publication of the proceedings.

Osaka, September, 2009

Masaharu Nishio

# Potential Theory and its related Fields

## RIMS Workshop

Date: 16. 2. 2009 — 18. 2. 2009

Venue: Room 115, Research Institute for Mathematical Sciences, Kyoto University

### Program

#### Monday, 16<sup>th</sup> February

13:30 — 14:00

Takayori Ono (Fukuyama Univ., Japan)

On solutions of quasilinear elliptic equations with general structure

14:10 — 14:40

Hayato Nakagawa (Nagoya Univ., Japan)

The relation between Carleson measure and Carleson inequality on the parabolic Hardy space

15:00 — 16:00

Eiichi Nakai (Osaka Kyoiku Univ., Japan)

Pre-dual of Campanato spaces and Riesz potentials

16:20 — 17:20

Sei-ichiro Ueki (Ibaraki Univ., Japan)

On compact composition operators acting between Bergman spaces

#### Tuesday, 17<sup>th</sup> February

9:00 — 9:40

Hiroaki Masaoka (Kyoto Sangyo Univ., Japan)

The class of harmonic functions with finite Dirichlet integral and the harmonic Hardy spaces on a hyperbolic Riemann surface

9:50 — 10:20

Tetsu Shimomura (Hiroshima Univ., Japan),

Yoshihiro Mizuta (Hiroshima Univ., Japan)

Toshihide Futamura (Daido Inst. Tech., Japan)

Integrability of maximal functions and Riesz potentials in Orlicz spaces of variable exponent

10:30 — 11:10

Fumi-Yuki Maeda (Hiroshima, Japan)

Variable exponent version of Hedberg-Wolff theorem

11:20 — 11:50

Kentaro Hirata (Akita Univ., Japan)  
Limits at infinity of superharmonic functions and solutions  
of semilinear elliptic equations of Matukuma type

13:30 — 14:30

Alano Ancona (Univ. Paris-sud, Orsay, France)  
Kato's inequality up to the boundary

14:50 — 15:50

Minoru Murata (Tokyo Inst. Tech., Japan)  
Structure of nonnegative solutions to parabolic equations  
and perturbation theory for elliptic operators

16:10 — 17:10

Tetsuo Tsuchida (Meijo Univ., Japan)  
Asymptotics of Green functions and Martin boundaries for elliptic operators  
with periodic coefficients

### Wednesday, 18<sup>th</sup> February

9:00 — 9:30

Yôsuke Hishikawa (Gifu Univ., Japan),  
A conjugate system and tangential derivative norms on parabolic Bergman spaces

9:40 — 10:40

Shuichi Ohno (Nippon Inst. Tech., Japan)  
Linear relations of composition operators

10:50 — 11:20

Katsunori Shimomura (Ibaraki Univ., Japan)  
Liouville type theorem associate with the wave equation

11:30 — 12:00

Takao Ohno (Hiroshima, Japan),  
Peter Hästö (Oulu Univ., Finland),  
Yoshihiro Mizuta (Hiroshima Univ., Japan),  
Tetsu Shimomura (Hiroshima Univ., Japan)  
Sobolev inequalities for Orlicz spaces of two variable exponents

13:30 — 14:30

Alano Ancona (Univ. Paris-sud, Orsay, France)  
Positive harmonic functions in cones and cylinders

14:40 — 15:40

Hiroaki Aikawa (Hokkaido Univ., Japan)  
Boundary Harnack principle and the quasihyperbolic boundary condition

16:00 — 16:30

Free discussions

Organizer: Masaharu Nishio (Osaka City University)

18/2/2009

ポテンシャル論とその関連分野  
Potential Theory and its related Fields  
RIMS 研究集会報告集

2009年2月16日～2月18日  
研究代表者 西尾 昌治 (Masaharu Nishio)

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