

数理解析研究所講究録 1519

RIMS 共同研究

Analytic Function Spaces and Their Operators

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## Preface

Complex analysis and operator theory are rich and beautiful subjects in mathematics. In the late nineteenth and in the twentieth century, the theory of analytic functions was developed by such mathematicians as G.H. Hardy and J.E. Littlewood and many others. And, according to the development of functional analysis, it has become important to regard the spaces of analytic functions as Hilbert and Banach spaces. So many methods has been provided into another fields. For example, in 1984, L. de Branges gave an answer to the Bieberbach conjecture, one of the important problems in mathematics in the twentieth century, using the range of (composition) operator on the Dirichlet space.

The purpose of our joint research is the study of analytic function spaces and operators on them, explicitly, Hardy, Bergman and Bloch spaces and Toeplitz, Hankel and composition operators. There were well addressed talks that touched many aspects to complex analysis and operator theory. This is the proceeding of the meeting.

It is my duty to thank the contributors. We would like to thank the following for help of participants' stipends to this joint research:

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Shūichi OHNO



RIMS Joint Research  
Analytic Function Spaces and Their Operators  
June 21(Wed)— 23(Fri), 2006  
Kyoto University Research Institute for Mathematical Science  
<http://www.kurims.kyoto-u.ac.jp/>

Program

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June 21 (Wed)

9:30 — 10:00 Boorim Choe (Korea University)

Sums of products of Bergman space Toeplitz operators

10:20— 10:50 Kyesook Nam ( Hanshin University )

Products of Bergman space Toeplitz operators on the polydisk

11:05 — 11:35 Kyunguk Na ( Korea University)

Schatten-Herz type positive Toeplitz operators on pluriharmonic Bergman spaces

1:30 — 2:00 Kenro Furutani (Tokyo University of Science)

Geometric Quantization and Toeplitz Operator

2:15 — 2:45 Wolfram Bauer ( Tokyo University of Science )

$\Psi_0$ -Algebras and Cone Localization for Toeplitz Operators

3:15 — 3:45 Young Joo Lee ( Chonnam National University )

Some algebraic properties of Toeplitz operators on the Dirichlet space

4:00 — 4:30 Shūichi Ohno (Nippon Institute of Technology)

Hankel-type operators on the spaces of analytic functions

5:30 Reception

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June 22 (Thu)

9:30 — 10:00 Hyungwoon Koo ( Korea University )

A note on the composition operator on the unit ball

10:20— 10:50 Sei-ichiro Ueki ( Nippon Institute of Technology )

Weighted composition operator on Bargmann space over  $\mathbb{C}^N$

11:05 — 11:35 Yasuyuki Kobayashi ( Hokkaido University)

On bounded analytic functions on two-sheeted covering surfaces

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June 23 (Fri)

9:30 — 10:00 Rikio Yoneda ( Otaru University of Commerce)

The composition operators on the weighted Bergman space with closed range

10:20— 10:50 Takuya Hosokawa ( Nippon Institute of Technology )

Extreme points of the unit ball of the composition algebra

11:05— 11:35 Michio Seto ( Kanagawa University )

Inner sequences and submodules in the Hardy space over the bidisk

1:30 — 2:00 Penghui Wang ( Fudan University )

Homogenous quotient modules on bidisk

2:15 — 2: 45 Kou Hei Izuchi (Niigata University)

Cyclic vectors in Fock-type space

3:15 — 3:45 Kei Ji Izuchi (Niigata University) and Kou Hei Izuchi

Polynomials having leading terms over  $\mathbb{C}^2$  in the Fock space

4:00 — 4:30 Mikihiro Hayashi ( Hokkaido University)

On the Shilov boundary of a Riemann surface



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研究代表者 大野 修一 (Shūichi Ohno)

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