

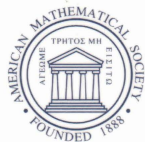
CONTEMPORARY MATHEMATICS

454

Banach Spaces of Analytic Functions

AMS Special Session
April 22–23, 2006
University of New Hampshire
Durham, New Hampshire

Rita A. Hibschweiler
Thomas H. MacGregor
Editors



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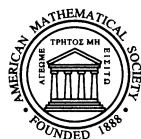
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This volume is dedicated to the memory of Alec Matheson. Alec was a major contributor to this field, and he collaborated with several of the authors represented in this volume. Alec is remembered as a highly respected mathematician, valued colleague and friend.

Contents

Preface	ix
A note on the life of Alec Matheson and some of his work JOSEPH A. CIMA	1
On the inverse of an analytic mapping JOSEPH A. CIMA	5
Isometric composition operators on the Bloch space in the polydisc JOEL COHEN and FLAVIA COLONNA	9
Pluripolarity of manifolds OLEG EROSHKIN	23
On a question of Brézis and Korevaar concerning a class of square-summable sequences RICHARD FOURNIER and LUIS SALINAS	35
Approximating \bar{z} in Hardy and Bergman Norms ZDEŇKA GUADARRAMA and DMITRY KHAVINSON	43
A general view of multipliers and composition operators II DON HADWIN and ERIC NORDGREN	63
A general view of BMO and VMO DON HADWIN and HASSAN YOUSEFI	75
Order bounded weighted composition operators R. A. HIBSCHWEILER	93
Fractional Cauchy transforms and composition T. H. MACGREGOR	107
Continuous functions in star-invariant subspaces [The Abstract] ALEC MATHESON	117
Indestructible Blaschke products WILLIAM T. ROSS	119
On Taylor coefficients and multipliers in Fock spaces JAMES TUNG	135

Preface

Banach spaces of analytic functions play an important role in both classical and modern analysis. In this Proceedings, the major focus is on spaces of functions analytic in the open unit disc, such as the Hardy spaces, the Bergman spaces, and the weighted versions of these spaces. Other spaces under consideration here include the Bloch space, the families of Cauchy transforms and fractional Cauchy transforms, BMO, VMO, and the Fock space. Some of the work deals with questions in several complex variables.

One of the themes of the Proceedings is the notion of multiplication operators, composition operators and weighted composition operators acting on Banach spaces. This has been a topic of extensive research over the past twenty years. The Proceedings includes results characterizing bounded, compact and isometric composition operators in various settings.

The recently published book “The Cauchy Transform” (2006) by Joseph A. Cima, Alec L. Matheson and William T. Ross, deals with material that is central to this Proceedings. A related book “Fractional Cauchy Transforms” (2006) was written by the editors of this Proceedings. Research by these authors is part of the Proceedings. The articles here were generated by the Special Session on Banach Spaces of Analytic Functions, held as part of the regional AMS meeting at the University of New Hampshire in April, 2006. It was very unfortunate that Alec Matheson, a major contributor to this field, died shortly before the meeting after a long illness. A brief note on the life of Alec Matheson, including several of his results with various collaborators, was prepared by Joseph Cima and is included here.

This volume presents both expository and research articles. Several authors conclude their articles with open questions.

The Special Session on Banach Spaces of Analytic Functions brought together thirty mathematicians, mostly from the northeastern United States. We hope that this volume serves to communicate more broadly the research presented at the meeting.

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This volume is focused on Banach spaces of functions analytic in the open unit disc, such as the classical Hardy and Bergman spaces, and weighted versions of these spaces. Other spaces under consideration here include the Bloch space, the families of Cauchy transforms and fractional Cauchy transforms, BMO, VMO, and the Fock space. Some of the work deals with questions about functions in several complex variables.

Multiplication operators, composition operators and weighted composition operators form a central topic of the volume. This topic has been an extensive area of research for the past twenty years. This volume includes results characterizing bounded, compact and isometric composition operators in various settings.

Graduate students who are interested in analysis will find an overview of current work in the field. Specialists will find interesting questions and new methods, as well as familiar ideas (such as composition operators) seen in new settings or in more general form. Mathematicians with an interest in modern analysis will gain insight into the interplay between function theory and operator theory which is central to this work.

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