Complex Analysis and Dynamical Systems
Proceedings of an International Conference on Complex Analysis and Dynamical Systems
June 19-22, 2001
ORT Braude College
Karmiel, Israel

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Lavi Karp
David Shoikhet
Lawrence Zalcman
Editors
Complex Analysis
and Dynamical Systems
This volume contains contributions from participants at the Third International Conference on Complex Analysis and Dynamical Systems. The conference was held from June 19–22, 2001, at ORT Braude College in Karmiel, Israel. This is the first volume of the Israel Mathematics Conference Proceedings (IMCP) published as a subseries of the Contemporary Mathematics series.

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Preface

Israel Mathematical Conference Proceedings (IMCP) is a publication, part of the Contemporary Mathematics Series, devoted to the proceedings of conferences, symposia and seminars. Collections of papers focusing on a certain subject will also be published. Prospective volumes may be submitted to any member of the editorial board. Each volume has an editor (or editors) responsible for its preparation. In order to ensure inexpensive and timely distribution, authors are requested to submit to the Editor of the volume an electronic TEX file of their manuscript in AMS-LATEX, using the Contemporary Mathematics style file which can be downloaded at http://www.ams.org/tex/author-info.html For further information, contact the Managing Editor, IMCP, Department of Mathematics, Bar-Ilan University, Ramat-Gan 52900, Israel; e-mail: rowen@macs.biu.ac.il

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In recent years, ORT Braude College in Karmiel, Israel has hosted a series of conferences and workshops devoted to aspects of mathematical analysis. The third of these, an International Conference on Complex Analysis and Dynamical Systems, was held during June 19–22, 2001. Altogether, 46 mathematicians from 11 countries participated in a program which included 41 lectures. The nineteen papers collected in this volume form a partial record of that Conference. Many of them are based on the actual lectures presented, while others provide extensive elaborations of those lectures. In a few instances, contributors have chosen to submit papers different from those delivered at the Conference. Taken together, they provide a snapshot of activity in analysis at the outset of the twenty-first century.

Lawrence Zalcman
Program

**TUESDAY**
**19th of June**
14:30 - 14:45 OPENING
14:45 - 15:25 **B. Korenblum**
F.Wiener and H.Bohr-type theorems for $L^p$ and $H^p$
15:30 - 16:10 **M. Reissig**
Klein-Gordon decay rates for wave equations
with time-dependent mass term
16:10 - 16:30 Coffee Break
16:30 - 17:10 **L. Zalcman**
Beyond Bloch’s Principle
17:15 - 17:55 **B.-W. Schulze**
Long-time asymptotics on manifolds with
geometric singularities

**WEDNESDAY**
**20th of June**
**Morning Session**
09:00 - 09:40 **A. Hinkkanen**
On Painlevé’s third equation
09:45 - 10:25 **S. Dineen**
Quasi-invertible manifolds
10:30 - 11:10 **M. Klein**
Spectral theory and metastability for Markov chains
11:10 - 11:30 Coffee Break
**Session A**
11:30 - 12:10 **M. Shapiro**
On the Koppelman formula
12:15 - 12:55 **A. Solynin**
Local variations and minimal area problems
**Session B**
11:30 - 12:10 **D. Lenz**
Uniform spectral properties of quasicrystals
12:15 - 12:55 **V. Rabinovich**
Pseudodifferential operators with analytical symbols
and estimates of eigenfunctions of the Schrödinger
operators
Afternoon Session
Session A  Room 505
14:30 - 15:00  R. Brooks
Random construction of Riemann surfaces
15:05 - 15:35  S. Krushkal
Grunsky inequalities of higher rank with applications
to complex geometry and function theory
15:40 - 16:10  M. Sodin
Dimension free estimates of polynomials and
analytic functions
Session B  Room 506
14:30 - 15:00  L. Rodman
Symmetric interpolation in matrix $H_2$ spaces
15:05 - 15:35  D. Alpay
Some finite dimensional spaces of analytic functions in
the ball and a related interpolation problem
15:40 - 16:10  W. Kaczor
Fixed points of asymptotically regular nonexpansive
mappings on nonconvex sets

THURSDAY
21st of June
Morning Session  VIP Room
09:30 - 10:10  L. Harris
Invertibility preserving linear maps of operator algebras
10:15 - 10:55  S. Simons
Hahn-Banach and minimax theorems
11:00 - 11:40  Yu. Lyubich
Dynamical systems and functional equations
11:40 - 12:00  Coffee Break
Session A  Room 505
12:00 - 12:40  M. Lanza de Cristoforis
Asymptotic behaviour of the conformal representation of
a Jordan domain with a small hole, and relative capacity
12:45 - 13:25  Y. Lyubarskii
Interpolation in weighted spaces of entire functions
Session B  VIP Room
12:00 - 12:40  H. Render
Multiresolutional analysis via cardinal polysplines
12:45 - 13:25  Th. Krainer
On the inverse of parabolic boundary value problems
in an infinite space-time cylinder
Afternoon Session

Session A
15:00 - 15:30
L. Aizenberg
Generalization of the Carathéodory inequality
and Bohr’s phenomenon for power series

15:35 - 16:05
G. Levin
On a class of first-order differential equations

Session B
VIP Room
15:00 - 15:30
T. Kuczumow
Holomorphic retracts in bounded, convex domains and
locally uniformly convex in the Kobayashi distance domains

15:35 - 16:05
M. Budzynska
Nonexpansive retracts in product spaces

16:10 - 16:40
Coffee Break

Session A
Room 505
16:30 - 17:00
D. Aharonov
A minimal area problem in conformal mapping

17:05 - 17:35
U. Srebro
Q-homeomorphisms

Session B
VIP Room
16:30 - 17:00
K. Wlodarczyk
Random iterations of holomorphic maps in locally convex
and Banach spaces and weaker contractions in uniform spaces

17:05 - 17:35
J. Zemanek
On quasi-regular points of holomorphic mappings

FRIDAY
22nd of June

Morning Session
VIP Room
09:00 - 09:40
B. Paneah
Sharp estimates for analytic functions of exponential type
and uncertainty principle

09:45 - 10:15
E. Malinnikova
Measures on the sphere orthogonal to harmonic vector fields

10:20 - 10:50
M. Elin
Spirallike functions with respect to a boundary point

10:55 - 11:10
CLOSING
List of Participants

Agranovsky Mark (Israel, Bar-Ilan University)
Aharonov Dov (Israel, Technion)
Aizenberg Lev (Israel, Bar-Ilan University)
Alpay Daniel (Israel, Ben-Gurion University)
Ben-Artzi Matania (Israel, Hebrew University)
Ben-Natan Yakov (Israel, ORT Braude College)
Brauer Uwe (Spain, Universidad Complutense de Madrid)
Brooks Robert (Israel, Technion)
Bruck Ronald (USA, University of Southern California)
Budzyńska Monika (Poland, M. Curie-Sklodowska University)
Dineen Seán (Ireland, University College Dublin)
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Hinkkanen Aimo (USA, University of Illinois)
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Klein Markus (Germany, University of Potsdam)
Korenblum Boris (USA, SUNY at Albany)
Krainer Thomas (Germany, University of Potsdam)
Krushkal Samuel (Israel, Bar-Ilan University)
Kuczumow Tadeusz (Poland, M. Curie-Sklodowska University)
Lanza de Cristoforis Massimo (Italy, University of Padova)
Lenz Daniel (Germany, Johann Wolfgang Goethe-University)
Levin Genadi (Israel, Hebrew University)
Lin Vladimir (Israel, Technion)
Lyubarskii Yuri (Norway, University of Trondheim)
Lyubich Yuri (Israel, Technion)
Malinnikova Eugenia (Norway, University of Trondheim)
Mayer Dieter (Germany, Technical University of Clausthal)
Paneah Boris (Israel, Technion)
Rabinovich Vladimir (Mexico, ESIME del IPN)
Reich Simeon (Israel, Technion)
Reissig Michael (Germany, Technical University Bergakademie)
Render Hermann (Germany, University of Duisburg)
Rodman Leiba (USA, College of William and Mary)
Schulze B.-Wolfgang (Germany, University of Potsdam)
Shapiro Michael (Mexico, National Polytechnic Institute of Mexico)
Simons Stephen (USA, University of California Santa Barbara)
Sodin Mikhail (Israel, Tel-Aviv University)
Solynin Alexander (Russia, Stekhlov Mathematics Institute)
Spitkovsky Ilya (USA, College of William and Mary)
Srebro Uri (Israel, Technion)
Wlodarczyk Kazimierz (Poland, University of Lodz)
Zalcman Lawrence (Israel, Bar-Ilan University)
Zemánek Jaroslav (Poland, Polish Academy of Sciences)
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342 János Pach, Editor, Towards a theory of geometric graphs, 2004
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340 Rafael del Río and Carlos Villegas-Blas, Editors, Spectral theory of Schrödinger operators, 2004
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This book contains contributions from the participants of an International Conference on Complex Analysis and Dynamical Systems.

The papers collected here are devoted to various topics in complex analysis and dynamical systems, ranging from properties of holomorphic mappings to attractors in hyperbolic spaces. Overall, these selections provide an overview of activity in analysis at the outset of the twenty-first century. The book is suitable for graduate students and researchers in complex analysis and related problems of dynamics.

With this volume, the Israel Mathematical Conference Proceedings are now published as a subseries of the AMS Contemporary Mathematics series.