

**Operator Theory:
Advances and Applications
Vol. 43**

OT 43

Linear Operators in Function Spaces

**12th International Conference
on Operator Theory
Timișoara (Romania)
June 6–16, 1988**

Volume Editors

**H. Helson
B. Sz.-Nagy
F.-H. Vasilescu**

**Managing Editor
Gr. Arsene**

Birkhäuser

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Editor:

I. Gohberg

Tel Aviv University

Ramat Aviv, Israel

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School of Mathematical Sciences

Tel Aviv University

Ramat Aviv, Israel

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Volume Editorial Office:

Department of Mathematics
INCREST
Bd. Păcii 220
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Romania

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FOREWORD

The Operator Theory conferences, organized by the Department of Mathematics of INCREST and the Department of Mathematics of the University of Timișoara, are conceived as a means to promote cooperation and exchange of information between specialists in all areas of operator theory. This book comprises carefully selected papers on theory of linear operators and related fields. Original results of new research in fast developing areas are included. Several contributed papers focus on the action of linear operators in various function spaces. Recent advances in spectral theory and related topics, operators in indefinite metric spaces, dual algebras and the invariant subspace problem, operator algebras and group representations as well as applications to mathematical physics are presented.

The research contacts of the Department of Mathematics of INCREST with the National Committee for Science and Technology of Romania provided means for developing the research activity in mathematics; they represent the generous framework of these meetings too.

It is our pleasure to acknowledge the financial support of UNESCO which also contributed to the success of this meeting.

We are indebted to Professor Israel Gohberg for including these Proceedings in the OT Series and for valuable advice in the editing process. Birkhauser Verlag was very cooperative in publishing this volume.

Camelia Minculescu, Irén Némethi and Rodica Stoenescu dealt with the difficult task of typing the whole manuscript using a Rank Xerox 860 word processor; we thank them for this excellent job.

Organizing Committee,

Head of Mathematics Department of INCREST,

For Organizers,

Zoia Ceausescu

F.-H. Vasilescu

LIST OF PARTICIPANTS*)

ADAMJAN, V.M.	- University of Odessa, USSR
ALBRECHT, Ernst	- University of Saarland, West Germany
AMBROZIE, Călin	- INCREST, Bucharest
AROV, D.Z.	- Pedagogical Institute, Odessa, USSR
ARSENE, Grigore	- INCREST, Bucharest
ARSU, Gruia	- INCREST, Bucharest
ARZUMANIAN, V.	- Institute of Mathematics, Yerevan, USSR
AXLER, Sheldon	- Michigan State University, USA
AZIZOV, T.Ya.	- State University of Voronezh, USSR
BACALU, Ion	- Politechnical Institute, Bucharest
BAKONYI, Mihai	- INCREST, Bucharest
BÁLINT, Ștefan	- University of Timișoara
BEZNEA, Lucian	- INCREST, Bucharest
BIRĂUȘ, Silviu	- University of Timișoara
BOCA, Florin	- INCREST, Bucharest
BOYADZIEV, K.N.	- Institute of Mathematics, Sofia, Bulgaria
BUCUR, Gheorghe	- INCREST, Bucharest
BUJUKLIEV, Nikolay	- University of Sofia, Bulgaria
CARTIANU, Dan	- ICECHIM, Bucharest
CEAUȘESCU, Zoia	- INCREST, Bucharest
CEAUȘU, Traian	- University of Timișoara
CHEVREAU, Bernard	- University of Bordeaux, France
CLARK, Douglas N.	- University of Georgia, USA
COFAN, Nicolae	- University of Timișoara
CONSTANTINESCU, Tiberiu	- INCREST, Bucharest
CORNEA, Emil	- INCREST, Bucharest
CORNEA, Florin	- University of Bucharest
CRAIOVEANU, Mircea	- University of Timișoara
CURTO, Raul-Enriques	- University of Iowa, USA
DĂDĂRLAT, Marius	- INCREST, Bucharest
DEACONU, Valentin	- INCREST, Bucharest
ECKSTEIN, Gheorghe	- University of Timișoara
ESCHMEIER, Jörg	- University of Münster, West Germany
EXNER, George	- Oberlin College, USA
FRAGOULOPOULOU, Maria	- University of Athens, Greece
FRUNZĂ, Ștefan	- University of Iași
GADIDOV, Radu	- INCREST, Bucharest
GĂSPAR, Dumitru	- University of Timișoara
GĂVRUȚĂ, Pasc	- University of Timișoara
GEORGESCU, Vladimir	- IFIN, Bucharest
GEORGIEV, Vladimir	- Institute of Mathematics, Sofia, Bulgaria
GHEONDEA, Aurelian	- INCREST, Bucharest

*) Romanian participants are listed only with the name of their institution and the city.

GHEORGHE, Gabriela	- ICECHIM, Bucharest
GODINI, Gliceria	- INCREST, Bucharest
GOLOGAN, Radu	- INCREST, Bucharest
GRIGORIAN, S.	- Institute of Mathematics, Yerevan, USSR
HALANAY, Andrei	- Polytechnical Institute, Bucharest
HĂRĂGUŞ, Dumitru	- University of Timișoara
HELSON, Henry	- University of California, Berkeley, USA
HELEMSKI, Alexander Ya.	- University of Moscow, USSR
HERRERO, Domingo	- University of Arizona, Tempe, USA
IONAȘCU, Eugen	- INCREST, Bucharest
IONAȘCU, Ileana	- INCREST, Bucharest
IONESCU, Adrian	- INCREST, Bucharest
IONESCU, Valentin	- INMT, Bucharest
IVANOV, Alexandru	- ICECHIM, Bucharest
IVANOVSKI, N.	- Faculty of Mathematics, Skopje, Yugoslavia
JANAS, Jan	- Institute of Mathematics, Krakow, Poland
JEBELEAN, Petru	- Polytechnical Institute, Bucharest
JOÎTA, Maria	- INCREST, Bucharest
JONAS, Peter	- Institute of Mathematics, Berlin, GDR
KYRIASIS, Athanasios	- University of Athens, Greece
LEVY, Roni N.	- Institute of Mathematics, Sofia, Bulgaria
MARTIN, Mircea	- INCREST, Bucharest
MARZOUK, Ahmed	- University of Bordeaux, France
MASANI, Pesi R.	- University of Pittsburgh, USA
MATACHE, Valentin	- University of Timișoara
MEGAN, Mihail	- University of Timișoara
MIHALACHE, Georgeta	- INCREST, Bucharest
MIHALACHE, Nicolae	- INCREST, Bucharest
MÜLLER, Vladimir	- Institute of Mathematics, Prague, Czechoslovakia
NAGY, Gabriel	- INCREST, Bucharest
NAKAZI, Takahiko	- Hokkaido University, Sapporo, Japan
NENCIU, Gheorghe	- IFIN, Bucharest
NICA, Alexandru	- INCREST, Bucharest
NICULESCU, Constantin	- University of Craiova
NIKOLOV, Krasimir	- Institute of Mathematics, Sofia, Bulgaria
NISTOR, Victor	- INCREST, Bucharest
NITICĂ, Viorel	- INCREST, Bucharest
OJA, Eve	- Tartu State University, USSR
PASCU, Mihai	- INCREST, Bucharest
PASNICU, Cornel	- INCREST, Bucharest
PĂUNESCU, Doru	- University of Timișoara
PETRESCU, Steliana	- INCREST, Bucharest
POP, Florin	- INCREST, Bucharest
POPA, Nicolae	- INCREST, Bucharest
POPESCU, Gelu	- INCREST, Bucharest
POPESCU, George	- ITCI, Bucharest
PRĂJITURĂ, Gabriel	- High School, Slatina
PRUNARU, Bebe	- INCREST, Bucharest
PTÁK, Vlastimil	- Institute of Mathematics, Prague, Czechoslovakia
PUTA, Mircea	- University of Timișoara
PUTINAR, Mihai	- INCREST, Bucharest
RADULESCU, Florin	- INCREST, Bucharest
REGHIȘ, Mircea	- University of Timișoara

- RICKER, Werner**
ROVNYAK, James L.
RUDOL, Krzysztof
SABAC, Mihai
SHTRAUS, Vladimir
STAN, Ilie
STĂNĂȘILĂ, Octavian
ȘTEFAN, Tudor
STRĂTILĂ, Șerban
SUCIU, Ion
SUCIU, Nicolae
SZAFRANIEC, Franciszek H.
SZŐKEFALVI-NAGY, Béla
TERESCENCO, Alexandru
TIMOTIN, Dan
TODOROV, Todor
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TÖRÖK, Andrei
TOTOLICI, Ioan
TSEKANOVSKI, E.R.
TURNPU, Heino
VALUȘESCU, Ilie
VASILESCU, Florian-Horia
VOLANSCHI, Constantin
VRBOVÁ, Pavla
VUZA, Dan
WAELEBROECK, Lucien
WOLLENBERG, Manfred
ZAJAC, Michal
ZAROUF, Fouad
ZOUAKIA, Fouad
- University of Canberra, Australia
 - University of Virginia, Charlottesville, USA
 - Institute of Mathematics, Krakow, Poland
 - University of Bucharest
 - Polytechnical Institute, Celiabinsk, USSR
 - University of Timișoara
 - Polytechnical Institute, Bucharest
 - Polytechnical Institute, Bucharest
 - INCREST, Bucharest
 - INCREST, Bucharest
 - University of Timișoara
 - Jagiellonian University, Krakow, Poland
 - University of Szeged, Hungary
 - ITCI, Timișoara
 - INCREST, Bucharest
 - Institute of Mathematics, Sofia, Bulgaria
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PROGRAMME OF THE CONFERENCE

Tuesday, June 7

Joint Session

Chairman: D. Herrero

- 9.00- 9.45 **H. Helson:** Large analytic functions.
 9.50-10.35 **E. Albrecht:** Multicyclic n -tuples of commuting operators.
 10.50-11.35 **J. Eschmeier:** Operators with rich invariant subspace lattices.
 11.40-12.25 **M. Putinar:** On the division of vector valued distributions by linear functions.

Section A

Chairman: Gr. Arsene

- 16.00-16.30 **R. Gologan:** Another proof of the subadditive ergodic theorem.
 16.35-17.05 **W.J. Ricker:** Boolean algebras of projections and spectral measures in dual spaces.
 17.20-17.50 **Șt. Frunză:** The extension problem for n -coadjoint and n -isometric operators on Hilbert spaces.
 17.55-18.25 **F. Zouakia:** Stabilité des semigroupes d'opérateurs.

Section B

Chairman: V. Pták

- 16.00-16.30 **S. Bálint:** Linear operators, several complex variables and power systems.
 16.35-17.05 **M. Craioveanu, M. Puta:** Basic de Rham cohomology.
 17.20-17.35 **H. Turnpu:** Inclusion with speed of summability methods in the class of functional series.
 17.40-17.55 **C. Volanschi:** A proof for reconstructing matrix conjecture.

Section A

Chairman: D. Gaşpar

- 16.00-16.30 **E.R. Tsekanovski:** Accretive and sectorial extensions and characteristic operator functions.
- 16.35-17.05 **J. Janas:** Inductive limit of Toeplitz operators.
- 17.20-17.35 **R. Gadidov:** Choice sequences and subisometric dilations.
- 17.40-17.55 **V. Ionescu:** Processes with parameter periodicities.
- 18.00-18.15 **P. Găvruta, D. Păunescu:** Moment problems for operators.

Section B

Chairman: M. Reghiş

- 16.00-16.30 **M. Pascu:** Asymptotic completeness of the wave operators for simply characteristic operators and long-range potentials by Enss method.
- 16.35-17.05 **G. Arsu:** Spectral analysis for simply characteristic operators by Mourre's method.
- 17.20-17.35 **K.N. Boyadzhiev:** Some notes on the Pincus principal function and on the Krein spectral shift function.
- 17.40-17.55 **T.S. Todorov:** On irreducibility properties of unbounded operator $\ast$ -algebras.
- 18.00-18.15 **M. Puta:** The integrability problem at quantic level.

Friday, June 10

Joint Session

Chairman: H. Helson

- 9.00- 9.45 **J. Rovnyak:** Contractive substitution transformations.
- 9.50-10.35 **V.M. Adamyan:** Asymptotic relations for the positive Toeplitz matrices and operators.
- 10.50-11.35 **Gr. Arsene, Zoia Ceaşescu, T. Constantinescu:** On some completion problems.
- 11.40-12.25 **T. Constantinescu:** Consequences of some completion problems.

Section A

Chairman: B.Sz.-Nagy

- 16.00-16.30 **Zoia Ceaşescu, I. Suci:** Extreme points in the set of contractive intertwining dilations.

- 16.35-17.05 **D. Gaspar, N. Suciu, I. Valușescu:** Factorizations and Szegő theorem for semispectral measures on $\mathbf{T}^2$.
- 17.20-17.35 **G. Popescu:** Multi-analytic operators and some factorization theorems.
- 17.40-17.55 **M. Zając:** Pairs of commuting contractions.
- 18.00-18.15 **M. Békonyi:** Spectral factors and analytic completion.
- 18.30-19.30 **J. Rovnyak:** Seminar.

Section B

Chairman: N. Popa

- 16.00-16.30 **G. Godini:** Operators in normed almost linear spaces.
- 16.35-17.05 **C. Niculescu:** Alfsen-Effros structures associated to a vector norm.
- 17.20-17.35 **A. Ivanov:** Compatibility and commutativity in orthomodular lattices.
- 17.40-17.55 **E. Oja:** M-ideals of compact operators.
- 18.00-18.15 **D. Vuza:** Characterization of Carleman operators.

Saturday, June 11

Joint Session

Chairman: L. Waelbroeck

- 9.00- 9.45 **P. Vrbova:** Some remarks on lifting intertwining relation for contractions.
- 9.50-10.35 **P.R. Masani:** Stationary measures over L.C.A. groups Γ .
- 10.50-11.35 **N. Popa:** Isomorphism theorems for dyadic Hardy spaces H_∞ .
- 11.40-12.25 **D. Vuza:** Operators of convolution type and their applications to a problem of H.H. Schaefer.

Monday, June 13

Joint Session

Chairman: P.R. Masani

- 9.00- 9.45 **A.Ya. Helemskii:** Results and problems on the homology of the "Algebras in Analysis".
- 9.50-10.35 **F. Rădulescu:** On smooth extensions for odd dimensional spheres.
- 10.50-11.35 **M. Dădărlat, A. Némethi:** Shape theory for C^* -algebras.
- 11.40-12.25 **V. Nistor:** Homotopy properties of automorphisms of AF-algebras.

Section A

Chairman: A.Ya. Helemskii

- 16.00-16.30 **R.N. Levy:** Chern character for n -tuples of operators.
- 16.35-17.05 **M. Martin:** Algebraic manifolds associated with convolution subalgebras of a C^* -algebra.
- 17.20-17.35 **A. Kyriazis:** Tensor product algebra bundles.
- 17.40-17.55 **A. Nica:** Some remarks on the C^* -algebras of the positive cones of H_3 and H_4 .
- 18.00-18.15 **A. Török:** AF-algebras with unique trace.
- 18.20-18.35 **Maria Fragoulopoulou:** Tensor products of locally C^* -algebras and applications.
- 18.40-19.40 **D.Z. Arov:** Seminar.

Tuesday, June 14

Joint Session

Chairman: E. Albrecht

- 9.00- 9.45 **L. Waelbroeck:** Holomorphic functions taking their values in quotient spaces.
- 9.50-10.35 **F.-H. Vasilescu:** A multioperator spectral theory in quotient Fréchet spaces.
- 10.50-11.35 **S. Axler:** Hankel operators on Bergman spaces.

Section A

Chairman: Ș. Strătilă

- 16.00-16.30 **V. Arzumanian, S. Grigorian:** Noncommutative uniform algebras.
- 16.35-17.05 **C. Pasnicu, M. Dădărlat:** Inductive limits of $C(X)$ -modules and continuous fields of AF-algebras.
- 17.20-17.35 **V. Deaconu:** Automorphisms of AF-algebras.
- 17.40-17.55 **F. Boca, V. Nițică:** Combinatorial properties of simple groups and C^* -algebras with unique trace.
- 18.00-18.15 **G. Nagy:** On lifting invertible elements from quotient C^* -algebras.
- 18.30-19.30 **V.M. Adamyan:** Seminar.

Wednesday, June 15

Joint Session

Chairman: V.M. Adamyan

- 9.00- 9.45 **P. Jonas:** On compact perturbations of definitizable operators in Krein space.
- 9.50-10.35 **D.Z. Arov:** Regular J-inner matrix-functions and corresponding extension problems.
- 10.50-11.35 **D.N. Clark:** The Krein space ΦH^2 .
- 11.40-12.25 **T.Ia. Azizov:** Operator theory in indefinite inner product spaces and operator pencils.
- 14.45-15.45 **D.N. Clark: Seminar.**

Section A

Chairman: D.N. Clark

- 16.00-16.30 **A. Gheondea:** A geometric question concerning the strong duality of neutral spaces.
- 16.35-17.05 **F. Zarouf:** Sur les opérateurs sous-normaux de la classe A.
- 17.20-17.35 **B. Prunaru:** Rational approximation and invariant subspaces.
- 17.40-17.55 **A. Halanay:** On the existence of invariant subspaces for some contractions with spectrum dominating an arc on the unit circle.
- 18.00-18.15 **V. Nistor:** A C^* -algebra which is not the C^* -algebra of a groupoid.

Thursday, June 16

Joint Session

Chairman: F.-H. Vasilescu

- 9.00- 9.45 **G. Exner:** Analytic invariant subspaces and the class A.
- 9.50-10.35 **B. Chevreau:** Contractions with isometric functional calculus are reflexive.
- 10.50-11.20 **V. Müller:** The numerical radius of commuting products.
- 11.30-12.30 **B. Chevreau: Seminar.**