

Table of Contents

Editorial Introduction	ix
<i>V. Adamyan</i>	
Scattering matrices for microschemes	1
1. General expressions for the scattering matrix	2
2. Continuity condition	7
References	10
<i>D. Alpay, A. Dijksma, J. van der Ploeg, H.S.V. de Snoo</i>	
Holomorphic operators between Krein spaces and the number of squares of associated kernels	11
0. Introduction	11
1. Realizations of a class of Schur functions	15
2. Positive squares and injectivity	20
3. Application of the Potapov-Ginzburg transform	23
References	28
<i>D. Alpay, H. Dym</i>	
On reproducing kernel spaces, the Schur algorithm, and interpolation in a general class of domains	30
1. Introduction	31
2. Preliminaries	33
3. $\mathcal{B}(X)$ spaces	39
4. Recursive extractions and the Schur algorithm	47
5. $\mathcal{H}\rho(S)$ spaces	57
6. Linear fractional transformations	64
7. One sided interpolation	67
8. References	74
<i>M. Bakonyi, H.J. Woerdeman</i>	
The central method for positive semi-definite, contractive and strong Parrott type completion problems	78
1. Introduction	78
2. Positive semi-definite completions	79
3. Contractive completions	87
4. Linearly constrained contractive completions	89
References	95

J.A. Ball, M. Rakowski

Interpolation by rational matrix functions and stability of feedback systems: The 4-block case	96
Introduction	96
1. Preliminaries	100
2. A homogeneous interpolation problem	104
3. Interpolation problem	109
4. Parametrization of solutions	116
5. Interpolation and internally stable feedback systems	131
References	140

H. Bart, V.E. Tsekanovskii

Matricial coupling and equivalence after extension	143
1. Introduction	143
2. Coupling versus equivalence	145
3. Examples	148
4. Special classes of operators	153
References	157

J.I. Fujii

Operator means and the relative operator entropy	161
1. Introduction	161
2. Origins of operator means	162
3. Operator means and operator monotone functions	163
4. Operator concave functions and Jensen's inequality	165
5. Relative operator entropy	167
References	171

M. Fujii, T. Furuta, E. Kamei

An application of Furuta's inequality to Ando's theorem	173
1. Introduction	173
2. Operator functions	175
3. Furuta's type inequalities	176
4. An application to Ando's theorem	177
References	179

T. Furuta

Applications of order preserving operator inequalities	180
0. Introduction	180
1. Application to the relative operator entropy	181
2. Application to some extended result of Ando's one	185
References	190

<i>I. Gohberg, M.A. Kaashoek</i>	
The band extension of the real line as a limit of discrete band extensions, I. The main limit theorem	191
0. Introduction	191
I. Preliminaries and preparations	193
II. Band extensions	201
III. Continuous versus discrete	205
References	219
<i>K. Izuchi</i>	
Interpolating sequences in the maximal ideal space of H^∞ II	221
1. Introduction	221
2. Condition (A_2)	223
3. Condition (A_3)	227
4. Condition (A_1)	231
References	232
<i>C.R. Johnson, M. Lundquist</i>	
Operator matrices with chordal inverse patterns	234
1. Introduction	234
2. Entry formulae	237
3. Inertia formula	243
References	251
<i>P. Jonas, H. Langer, B. Textorius</i>	
Models and unitary equivalence of cyclic selfadjoint operators in Pontryagin spaces	252
Introduction	252
1. The class \mathcal{F} of linear functionals	253
2. The Pontryagin space associated with $\phi \in \mathcal{F}$	257
3. Models for cyclic selfadjoint operators in Pontryagin spaces	266
4. Unitary equivalence of cyclic selfadjoint operators in Pontryagin spaces	275
References	283
<i>T. Okayasu</i>	
The von Neumann inequality and dilation theorems for contractions	285
1. The von Neumann inequality and strong unitary dilation	285
2. Canonical representation of completely contractive maps	287
3. An effect of generation of nuclear algebras	289
References	290
<i>L.A. Sakhnovich</i>	
Interpolation problems, inverse spectral problems and nonlinear equations	292
References	303

S. Takahashi

Extended interpolation problem in finitely connected domains	305
Introduction	305
I. Matrices and transformation formulas	306
II. Disc Cases	309
III. Domains of finite connectivity	318
References	326

E.R. Tsekanovskii

Accretive extensions and problems on the Stieltjes operator-valued functions relations	328
1. Accretive and sectorial extensions of the positive operators, operators of the class $C(\theta)$ and their parametric representation	329
2. Stieltjes operator-valued functions and their realization	335
3. M.S. Livsic triangular model of the M-accretive extensions (with real spectrum) of the positive operators	345
4. Canonical and generalized resolvents of QSC-extensions of Hermitian contractions	343
References	344

V. Vinnikov

Commuting nonselfadjoint operators and algebraic curves	348
1. Commuting nonselfadjoint operators and the discriminant curve	348
2. Determinantal representations of real plane curves	350
3. Commutative operator colligations	353
4. Construction of triangular models: Finite-dimensional case	355
5. Construction of triangular models: General case	359
6. Characteristic functions and the factorization theorem	364
References	370

P.Y. Wu

All (?) about quasinormal operators	372
1. Introduction	372
2. Representations	374
3. Spectrum and multiplicity	377
4. Special classes	379
5. Invariant subspaces	380
6. Commutant	382
7. Similarity	385
8. Quasimilarity	387
9. Compact perturbation	391
10. Open problems	393
References	394

Workshop Program

List of Participants	399
-----------------------------	-----