

CONTENTS

VOLUME 1

Contents	v
Preface	xv
From the preface to the previous edition	xvi
Acknowledgements	xviii
List of participants	xx
Chapter 1. Banach spaces (ed. by S. Kisliakov)	1
1.1 <i>V. Milman</i> . Proportional quotients of finite dimensional normed spaces	3
1.2 <i>J. Bourgain</i> . Structure of the space of uniformly convergent Fourier series	6
1.3 <i>P. Wojtaszczyk</i> . Bases in H^p spaces on the ball	8
1.4 <i>P. Müller, T. Wolniewicz</i> . Isomorphisms between H^1 spaces	10
1.5 <i>E. Semënov</i> . Spaces of Hardy type	12
1.6 <i>P. Jones</i> . Spaces with the approximation property?	14
1.7 <i>S. Saitoh</i> . Bergman – Selberg spaces on sectors	15
1.8 <i>Yu. Lyubarskii</i> . Spaces of analytic functions generated by a measure	18
1.9 <i>A. Pełczyński</i> . Compactness of absolutely summing operators	19
1.10 <i>I. Komarchev, B. Makarov</i> . When is $\Pi_2(X, \ell^2) = L(X, \ell^2)$?	21
1.11 <i>B. Makarov</i> . Stably regular operators. Lattices of operators	27
1.12 <i>E. Semënov</i> . Operator blocks in Banach lattices	30
1.13 <i>E. Semënov</i> . Orlicz property	32
1.14 <i>M. Wodzicki</i> . Homological dimensions of Banach spaces	34
1.15 <i>V. Zakharyuta, O. Semiguk, N. Skiba</i> . Isomorphisms and bases	36
1.16 <i>V. Zakharyuta</i> . On isomorphic classification of F -spaces	40
1.17 <i>F. Haslinger</i> . Weighted spaces of entire functions	43
1.18 <i>L. Aizenberg</i> . Functionals on analytic functions and linear convexity	45
1.19 <i>V. Trutnev</i> . Uniqueness of the support of an analytical functional	49
Chapter 2. Banach algebras (ed. by H. Dales and A. Helemskii)	51
2.1 <i>A. Helemskii</i> . 31 problems on the homology of the algebras of analysis	54
2.2 <i>Z. Lykova</i> . The homology of C^* -algebras	79
2.3 <i>P. Curtis, Jr.</i> . Amenable commutative Banach algebras	83
2.4 <i>M. Wodzicki</i> . Ideals in Banach algebras	85
2.5 <i>G. Willis</i> . Factorization in Banach algebras	87
2.6 <i>H. Dales</i> . Homomorphisms from C^* -algebras	90
2.7 <i>H. Dales</i> . Discontinuous homomorphisms from algebras	92
2.8 <i>W. Bade</i> . Continuity of derivations of radical convolution algebras	95
2.9 <i>E. Gorin, A. Kitover</i> . Spectrum of an endomorphism	98
2.10 <i>J. Zemánek</i> . One-sided spectral calculus	102

2.11	<i>W. Żelazko</i> . Four problems concerning joint spectra.....	105
2.12	<i>E. Gorin</i> . Algebraic equations in Banach algebras.....	107
2.13	<i>V. Shul'man</i> . Generalized derivations and semidiagonality.....	111
2.14	<i>T. Gamelin</i> . Problems pertaining to H^∞	113
2.15	<i>J. Wermer</i> . Finitely generated Banach algebras.....	116
2.16	<i>D. Sarason</i> . Sets of antisymmetry and support sets for $H^\infty + C$	117
2.17	<i>P. Gorkin</i> . Antisymmetric sets and Gleason parts.....	119
2.18	<i>D. Voiculescu</i> . Filtrations of C^* -algebras.....	122
2.19	<i>R. Rochberg</i> . A question involving analytic families of operators.....	123
2.20	<i>N. Krupnik, A. Markus, I. Fel'dman</i> . Operator algebras in which all Fredholm operators are invertible.....	124
2.21	<i>S. Igari</i> . Cohen – Rudin characterization of homomorphisms.....	126
2.22	<i>G. Brown, W. Moran</i> . Gelfand space of $L^1(\mathbb{R})$ multipliers.....	128
2.23	<i>W. Żelazko</i> . Two problems concerning separation of ideals.....	131
2.24	<i>O. Ivanov</i> . Analytic algebras and compactifications of the disk.....	132
2.25	<i>M. Samokhin</i> . H^∞ on an infinitely connected domain.....	134
2.26	<i>R. Mortini</i> . Gleason parts and prime ideals in H^∞	136
2.27	<i>V. Tolokonnikov</i> . Banach algebras of analytic functions.....	139
2.28	<i>V. Pták</i> . Extremum problems.....	145
2.29	<i>N. Young</i> . Maximum principles for quotient norms in H^∞	147
2.30	<i>J. Zemánek</i> . Open semigroups in Banach algebras.....	149
2.31	<i>L. de Branges</i> . Polynomial approximation.....	151
2.32	<i>J. Wermer</i> . Subalgebras of the disk algebra.....	152
S.2.33	<i>B. Bollobás</i> . Diminishing of spectrum under an extension.....	154
Chapter 3. Probabilistic problems (ed. by J.-P. Kahane).....		155
3.1	<i>H. McKean</i> . Some questions about Hardy functions.....	157
3.2	<i>I. Ibragimov, V. Solev</i> . Analytical problems on stationary processes.....	159
3.3	<i>S. Hruščëv, V. Peller</i> . Hankel operators, past and future.....	162
3.4	<i>V. Gaposhkin</i> . Strong law of large numbers.....	167
3.5	<i>A. Vershik</i> . Markov processes and contractions.....	170
3.6	<i>V. Sudakov</i> . Measures with given projections.....	172
3.7	<i>J. Anderson</i> . Random power series.....	174
3.8	<i>Y. Guivarc'h</i> . Random matrices and transfer operators.....	175
3.9	<i>J.-P. Kahane</i> . A kind of covering problem.....	178
Chapter 4. Holomorphic operator functions (ed. by I. Gohberg and M. Kaashoek).....		179
4.1	<i>N. Young</i> . Spectral and scalar interpolations.....	180
4.2	<i>V. Adamyan, D. Arov, M. Krein</i> . Function theoretic problems connected with spectral measures of isometric operators.....	183
4.3	<i>D. Arov</i> . Three problems about J -inner matrix-functions.....	186
4.4	<i>Yu. Ginzburg</i> . Extremal multiplicative representations.....	190
4.5	<i>L. Faddeev, N. Reshetihin</i> . Infinite product of special matrices.....	192
4.6	<i>J. Leiterer</i> . Holomorphic Hilbert space bundles.....	194

4.7	<i>D. Arov, B. Fritzsche, B. Kirstein.</i> Inverse problem for j_{pq} -functions.....	197
4.8	<i>A. Dijksma, H. Langer, H. de Snoo.</i> Poles of matrix functions.....	201
4.9	<i>I. Gohberg, M. Kaashoek, L. Rodman.</i> Local and global equivalence.....	205
4.10	<i>M. Putinar.</i> Liftings of vector-valued analytic functions.....	207
S.4.11	<i>B. Szökefalvi-Nagy.</i> Operator valued bounded analytic functions.....	208
Chapter 5. General operator theory (ed. by P. Rosenthal).....		211
5.1	<i>J. Holbrook.</i> Perturbation of eigenvalues for normal operators.....	214
5.2	<i>H. Radjavi.</i> Reducibility of semigroups of operators.....	217
5.3	<i>K. Davidson.</i> Compact operators and masas.....	219
5.4	<i>A. Atzmon.</i> Differentiation and translation invariant subspaces.....	220
5.5	<i>L. Rodman, I. Spitkovsky.</i> Spectrum assignment problems.....	223
5.6	<i>D. Herrero.</i> What is a finite operator?.....	226
5.7	<i>P. Y. Wu.</i> Multiplicative commutator and product of involutions.....	229
5.8	<i>D. Yakubovich.</i> Invariant subspaces on a Riemann surface.....	231
5.9	<i>T. Azizov, I. Iohvidov.</i> Maximal non-negative invariant subspaces.....	234
5.10	<i>A. Vershik.</i> Are multiplication and shift uniformly approximable?.....	236
5.11	<i>D. Clark.</i> A problem on extremal similarities.....	242
5.12	<i>V. Peller.</i> Estimates of operator polynomials on \mathfrak{S}_p	244
5.13	<i>A. Kitover.</i> 2×2 Matsaev's conjecture.....	247
5.14	<i>I. Fel'dman, A. Markus.</i> Operator matrix and its determinant.....	248
5.15	<i>M. Birman, M. Solomyak.</i> Operators with power-like singular numbers..	250
5.16	<i>M. Solomyak.</i> Two problems about the operators $b(X)a(\mathcal{D})$	252
5.17	<i>B. Simon.</i> Boundedness of continuum eigenfunctions.....	254
S.5.18	<i>Ch. Davis.</i> Perturbation of spectrum of normal operators.....	257
S.5.19	<i>Yu. Lyubich.</i> Composition of integration and substitution.....	258
Chapter 6. Perturbation theory. Scattering theory (ed. by M. Birman)....		259
6.1	<i>L. de Branges.</i> Perturbation theory and invariant subspaces.....	261
6.2	<i>D. Voiculescu.</i> Quasidiagonality and the Macaev ideal.....	263
6.3	<i>H. McKean.</i> Polynomial approximation and Hill's equation.....	264
6.4	<i>H. Widom.</i> When are differentiable functions differentiable?.....	266
6.5	<i>M. Birman.</i> Spectral shift function and double operator integrals.....	272
6.6	<i>M. Birman.</i> Re-expansion operators as objects of spectral analysis.....	274
6.7	<i>M. Ben-Artzi, A. Devinatz.</i> Convergence for evolution equations.....	278
6.8	<i>M. Ben-Artzi, A. Devinatz.</i> Energy estimates for limiting resolvents.....	280
6.9	<i>L. Sakhnovich.</i> Scattering theory for Coulomb type problems.....	282
6.10	<i>D. Yafaev.</i> Trace-class and smooth approaches in scattering theory.....	286
S.6.11	<i>L. Faddeev, B. Pavlov.</i> Zero sets of operator functions.....	289
S.6.12	<i>N. Makarov.</i> Point spectrum of perturbations of unitary operators.....	292
Chapter 7. Hankel and Toeplitz operator (ed. by J. Peetre).....		293
7.1	<i>S. Power.</i> Quasinilpotent Hankel operators.....	296
7.2	<i>V. Peller.</i> Estimates of operators and similarity to a contraction.....	298
7.3	<i>S. Janson.</i> Singular values of Hankel operators.....	303

7.4	<i>R. Rochberg</i> . Three questions about Hankel operators	306
7.5	<i>K. Zhu</i> . Hankel operators on the Bergman space	309
7.6	<i>Q. Fan, L. Peng</i> . Hankel-type operators: boundedness and compactness	312
7.7	<i>V. Peller</i> . Iterates of Toeplitz operators with unimodular symbols	314
7.8	<i>R. Douglas</i> . Localization of Toeplitz operators	316
7.9	<i>D. Sarason</i> . Products of Toeplitz operators	318
7.10	<i>C. Sundberg</i> . Toeplitz operators on the Bergman space	320
7.11	<i>N. Krupnik, I. Verbitskiĭ</i> . Toeplitz operators on Hardy spaces	321
7.12	<i>Yu. Karlovich, I. Spitkovskiĭ</i> . Factorization of almost periodic matrices	323
7.13	<i>L. Sakhnovich</i> . Factorization of operators on $L^2(a, b)$	326
7.14	<i>L. Coburn</i> . Toeplitz operators in several variables	330
7.15	<i>J. Janas</i> . Toeplitz operators in Bargmann spaces	331
7.16	<i>M. Kreĭn, I. Spitkovskiĭ</i> . On Szegő limit theorems	333
7.17	<i>V. Vladimirov, I. Volovich</i> . Moment problems and statistical physics	336
7.18	<i>A. Böttcher, B. Silbermann</i> . On Axler-Chang-Sarason-Volberg theorem	340
7.19	<i>S. Prössdorf</i> . Starke Elliptizität singulärer Integraloperatoren	342
7.20	<i>Yu. Latushkin, G. Litvinchuk</i> . How to calculate the defect numbers	346
7.21	<i>M. Semënov-Tyan-Shanskiĭ</i> . Poincaré – Bertrand operators	349
S.7.22	<i>S. Axler</i> . Hankel operators on Bergman spaces	351
S.7.23	<i>B. Silbermann</i> . Banach algebra approach to the reduction method	354

Chapter 8. Operators close to normals (ed. by J. Conway) 359

8.1	<i>P. McGuire</i> . Spectral pictures of irreducible subnormal operators	362
8.2	<i>R. Olin</i> . Multiplicity theory for subnormal operators	364
8.3	<i>C. Putnam</i> . Real parts of subnormal operators and their duals	366
8.4	<i>D. Xia</i> . Complete unitary invariant for some subnormal operators	368
8.5	<i>M. Putinar</i> . Analytically hyponormal weighted shifts	370
8.6	<i>M. Putinar</i> . Algebraic operators with rank-one self-commutators	372
8.7	<i>J. Conway</i> . On the fundamental problem for spectral sets	373
8.8	<i>D. Voiculescu</i> . Almost-normal operators modulo \mathfrak{S}_p	378
8.9	<i>C. Putnam</i> . Hyponormal operators and spectral absolute continuity	381
8.10	<i>C. Putnam</i> . Operators, analytic negligibility, and capacities	383
8.11	<i>N. Makarov, N. Nikolski</i> . Perturbation of continuous spectrum	386

Chapter 9. Functional model (ed. by N. Nikolski and V. Vasyunin) 389

9.1	<i>N. Nikolski</i> . Operators and approximation	391
9.2	<i>S. Naboko</i> . Similarity problem and the singular spectrum	394
9.3	<i>V. Kapustin</i> . Two problems about commutants	399
9.4	<i>L. Kerchy</i> . Quasi-similarity invariance of reflexivity	401
S.9.5	<i>N. Nikolski, B. Pavlov, V. Vasyunin</i> . Spectral decompositions and the Carleson condition	405
S.9.6	<i>R. Teodorescu, V. Vasyunin</i> . Invariant subspaces of C_{10} -contractions	408

Chapter 10. Singular integrals, BMO , H^p
 (ed. by E. Dyn'kin and S. Kisliakov) 409

10.1 *G. Tumarkin*. Classes of domains and Cauchy type integrals 411

10.2 *P. Jones*. Bilinear singular integrals and maximal functions 414

10.3 *J. Král*. Limits of integrals of the Cauchy type 415

10.4 *J. Krzyż*. Chord arc curves and Neumann – Poincaré operator C_1^f 418

10.5 *B. Muckenhoupt*. Weighted norm inequalities 419

10.6 *I. Verbitsky, N. Krupnik*. The norm of the Riesz projection 422

10.7 *S. Semmes*. Is this operator invertible? 424

10.8 *R. Rochberg*. BMO norm in terms of an operator norm 426

10.9 *P. Jones*. Equivalent norms in H^p 427

10.10 *A. Aleksandrov, P. Kargaev*. The Hardy spaces $H^p(\mathbb{R}^d)$
 and approximation in $L^p(\mathbb{R}^d)$ for $p < 1$ 428

10.11 *P. Müller*. Permutation of the Haar system 432

10.12 *S. Kisliakov*. Weak type substitute for Riesz projections on tori 434

10.13 *P. Sjögren*. Extension of operators bounded in the weak L^1 436

10.14 *J. Garnett*. Some open problems concerning H^∞ and BMO 438

10.15 *A. Baernstein*. Two conjectures by Albert Baernstein 440

10.16 *D. Sarason*. Blaschke products in \mathcal{B}_0 443

10.17 *S.-Yu. Chang*. Analytic functions with finite Dirichlet integral 446

10.18 *S.-Yu. Chang*. Subalgebras of $L^\infty(\mathbb{T}^2)$ containing $H^\infty(\mathbb{T}^2)$ 447

10.19 *P. Ahern*. Inner functions with derivative in H^p , $0 < p < 1$ 448

10.20 *M. Hasumi*. Hardy classes and Riemann surfaces 450

10.21 *P. Casazza*. Interpolating Blaschke products 452

10.22 *F. Forelli*. Quasi-proper maps of 2-sheeted coverings of the disc 454

10.23 *K. Dyakonov*. Smooth functions and inner factors 457

S.10.24 *J. Anderson*. Algebras contained within H^∞ 461

S.10.25 *A. Aleksandrov, V. Havin*. On the definition of $H^p(\mathbb{R}^n)$ 464

Subject index 465

Author index 477

Standard notation 489

VOLUME 2

Contents v

Preface xv

From the preface to the previous edition xvi

Acknowledgements xviii

List of participants xx

Chapter 11. Spectral analysis and synthesis (ed. by N. Nikolski) 1

11.1 *L. Waelbroeck*. About holomorphic functions with limited growth 4

11.2 *V. Palamodov*. $\bar{\partial}$ -equation and localization of submodules 7

11.3 *V. Trutnev*. Invariant subspaces and the differential equations 10

11.4	<i>I. Krasichkov-Ternovskii</i> . Local description of closed submodules	12
11.5	<i>V. Tkachenko</i> . Spectral synthesis for differential operators	16
11.6	<i>I. Krasichkov-Ternovskii</i> . Spectral synthesis for a differential operator	18
11.7	<i>R. Meise, S. Momm</i> . Structure of kernels of convolution operators	20
11.8	<i>C. Berenstein, D. Struppa</i> . Interpolating varieties and complex analysis	22
11.9	<i>C. Berenstein, A. Yger</i> . Some problems about ideals	26
11.10	<i>T. Wolff</i> . A refinement of the corona theorem	28
11.11	<i>N. Nikolski</i> . Two problems on the spectral synthesis	30
11.12	<i>R. Frankfurt</i> . Weak invertibility and factorization	33
11.13	<i>B. Korenblum</i> . Weakly invertible elements in Bergman spaces	36
11.14	<i>A. Shields</i> . Cyclic vectors in spaces of analytic functions	38
11.15	<i>A. Aleksandrov</i> . Invariant subspaces of the backward shift	41
11.16	<i>V. Gurarii</i> . Completeness of translates in a weighted space	44
11.17	<i>Y. Domar</i> . A closure problem for functions on \mathbb{R}_+	48
11.18	<i>V. Gurarii</i> . Two problems of harmonic analysis in weighted spaces	51
11.19	<i>E. Dyn'kin</i> . Harmonic synthesis and compositions	53
11.20	<i>J.-P. Kahane</i> . Deux problèmes sur les séries trigonométriques	55
11.21	<i>M. Thomas</i> . Algebra and ideal generation	57
11.22	<i>B. Levin</i> . Translates of functions of two variables	60
11.23	<i>H. Helson</i> . Titchmarsh's theorem for vector functions	62
11.24	<i>F. Shamoyan</i> . Invariant subspaces of the shift operator	64
11.25	<i>D. Williams</i> . Blaschke products and ideals in C_A^∞	66
11.26	<i>J. Bruna</i> . Closed ideals in the analytic Gevrey class	69
S.11.27	<i>F. Forelli</i> . Divisibility problem in $A(\mathbb{D})$ and $H^\infty(\mathbb{D})$	70

Chapter 12. Approximations and capacities

(ed. by J. Brennan, A. Volberg, and V. Havin) 73

12.1	<i>N. Tarkhanov</i> . Approximation by solutions of elliptic equations	76
12.2	<i>P. Jones</i> . Approximation by smooth functions in Sobolev spaces	79
12.3	<i>T. Kriete</i> . Splitting in H^2 -spaces	80
12.4	<i>H. Dym</i> . Trigonometric approximation in $L^2(\mathbb{R}, d\Delta)$	87
12.5	<i>Ch. Berg, H. Pedersen</i> . Nevanlinna extremal measures	89
12.6	<i>A. Stray</i> . Decomposition of approximable functions	92
12.7	<i>V. Belyi</i> . Approximation and quasiconformal continuation	94
12.8	<i>A. Boivin, P. Gauthier</i> . Tangential approximation	96
12.9	<i>J. Brennan</i> . Integrability of the derivative of a conformal mapping	101
12.10	<i>J. Brennan</i> . Weighted polynomial approximation	107
12.11	<i>F. Perez-Gonzalez</i> . Simultaneous approximation in L^p -norms	112
12.12	<i>H. Hedenmalm</i> . A polynomial approximation problem	114
12.13	<i>H. Hedenmalm</i> . An elasticity problem	115
12.14	<i>T. Bagby</i> . Approximation in the mean by harmonic functions	117
12.15	<i>A. O'Farrell</i> . Uniform approximation by harmonic functions	121
12.16	<i>J. Verdera</i> . A uniform approximation problem	122
12.17	<i>A. Gonchar</i> . Rational approximation of analytic functions	124
12.18	<i>H. Wallin</i> . Padé approximation in several variables	127
12.19	<i>L. Rubel</i> . Badly-approximable functions	131

12.20	<i>D. Khavinson</i> . An isoperimetric problem.....	133
12.21	<i>T. Ransford</i> . A lower bound for logarithmic capacity.....	136
12.22	<i>G. Henkin</i> . Exotic Jordan arcs in \mathbb{C}^N	139
12.23	<i>D. Marshall</i> . Removable sets for bounded analytic functions.....	141
12.24	<i>W. Hayman</i> . On Painlevé null sets.....	145
12.25	<i>M. Mel'nikov, A. Vitushkin</i> . Analytic capacity, rational approximation ..	148
12.26	<i>L. Ivanov</i> . On sets of analytic capacity zero.....	150
12.27	<i>J. Král</i> . Estimates of analytic capacity.....	154
12.28	<i>T. Murai</i> . Analytic capacity and the Szegő kernel function.....	158
12.29	<i>J. Zemánek</i> . On the variation of analytic capacity.....	161
12.30	<i>V. Maz'ya</i> . Regularität für elliptische Gleichungen.....	163
12.31	<i>D. Adams</i> . Exceptional sets for Besov spaces.....	169
12.32	<i>P. Jones</i> . Complex interpolation between Sobolev spaces.....	173
S.12.33	<i>L. Hedberg</i> . Spectral synthesis in Sobolev spaces.....	174
Chapter 13. Orthogonal polynomials (ed. by P. Nevai).....		177
13.1	<i>M. Eiermann, H. Stahl</i> . Zeros of orthogonal polynomials on N -gons.....	187
13.2	<i>A. Iserles, L. Littlejohn</i> . Polynomials orthogonal in a Sobolev space.....	190
13.3	<i>D. Lubinsky</i> . Rational versus polynomial approximation.....	194
13.4	<i>A. Magnus</i> . Refined asymptotics for Freud's recurrence coefficients.....	196
13.5	<i>V. Totik</i> . Fast decreasing polynomials and external fields.....	201
13.6	<i>W. van Assche</i> . Freud's conjecture for orthogonal polynomials.....	203
Chapter 14. Uniqueness, moments, normality (ed. by J. Brennan, A. Volberg, and V. Havin).....		207
14.1	<i>M. Džrbashyan</i> . Representations of analytic functions.....	209
14.2	<i>T. Kriete, B. MacCluer</i> . Kernel functions, moments, compositions.....	213
14.3	<i>V. Havin, S. Hruščëv</i> . Uniqueness and finite Dirichlet integral.....	216
14.4	<i>V. Havin, B. Jöricke, N. Makarov</i> . Stationary functions, uncertainty principle for convolutions and Jordan operators.....	219
14.5	<i>P. Koosis</i> . Problem in the theory of functions.....	223
14.6	<i>E. Dyn'kin</i> . Peak sets for Lipschitz classes.....	225
14.7	<i>R. Kaufman</i> . A problem by R. Kaufman.....	228
14.8	<i>V. Matsaev</i> . Quasi-analyticity and differential operators.....	229
14.9	<i>J. Ecalle</i> . Two problems involving quasianalytic functions.....	232
14.10	<i>L. de Branges</i> . Local operators on Fourier transforms.....	235
14.11	<i>J. Siddiqi</i> . Density of exponentials on plane arcs.....	237
14.12	<i>S. Hruščëv</i> . An alternative for analytic Carleman classes.....	239
14.13	<i>V. Napalkov</i> . On a uniqueness theorem in \mathbb{C}^n	241
14.14	<i>G. Grimmitt</i> . How few cumulants specify a distribution?.....	242
14.15	<i>J. Manfredi, E. Villamor</i> . Boundary values of quasiregular mappings.....	245
14.16	<i>J. Lewis</i> . Paths for subharmonic functions.....	247
14.17	<i>J. Lewis</i> . When is a pseudosphere a quasisphere?.....	250
14.18	<i>T. Wolff</i> . Unique continuation with L^p lower order terms.....	251
S.14.19	<i>A. Volberg</i> . When is $\int_{\mathbf{T}} \log f dm > -\infty$?.....	253
S.14.20	<i>A. Devinatz</i> . Moment problem questions.....	257

Chapter 15. Interpolation, bases, multipliers (ed. by N. Nikolski).....	259
15.1 <i>B. Taylor</i> . Necessary conditions for interpolation by entire functions.....	263
15.2 <i>A. Leontiev</i> . Representations of functions by exponential series.....	265
15.3 <i>N. Nikolski</i> . Bases of reproducing kernels and exponentials.....	268
15.4 <i>G. Gubreev</i> . Unconditional bases generated by Muckenhoupt weights....	271
15.5 <i>J. Bruna</i> . Free interpolation in regular classes.....	273
15.6 <i>N. Shirokov</i> . Traces of $H^\infty(\mathbb{B}^N)$ -functions on hyperplanes.....	275
15.7 <i>J. Bruna</i> . Traces of pluriharmonic functions on curves.....	277
15.8 <i>Yu. Brudny, P. Shwartsman</i> . Traces of differentiable functions.....	279
15.9 <i>S. Vinogradov</i> . Multiplicative properties of ℓ_A^p	283
15.10 <i>M. Zafran</i> . Multipliers, interpolation, and $\Lambda(p)$ sets.....	286
15.11 <i>M. Krein</i> . Banach algebras and almost periodicity.....	288
15.12 <i>I. Ovcharenko</i> . Positive definite kernels of two variables.....	291
15.13 <i>L. Sakhnovich</i> . On nonextendable Hermitian-positive functions.....	293
Chapter 16. Entire and subharmonic functions (ed. by A. Goldberg, B. Levin, and I. Ostrovskii).....	295
16.1 <i>B. Levin</i> . Entire functions of Laguerre – Polya class.....	298
16.2 <i>A. Goldberg, I. Ostrovskii</i> . Functions of completely regular growth.....	300
16.3 <i>I. Ostrovskii</i> . Operators preserving the completely regular growth.....	301
16.4 <i>I. Ostrovskii, M. Sodin</i> . Phragmen – Lindelöf indicators.....	303
16.5 <i>I. Ostrovskii, M. Sodin</i> . Estimates of indicators from below.....	304
16.6 <i>A. Goldberg, I. Ostrovskii</i> . Phragmen – Lindelöf principle.....	306
16.7 <i>A. Goldberg, I. Ostrovskii</i> . Arguments of zeros and lacunarity.....	308
16.8 <i>V. Azarin, A. Eremenko, A. Grishin</i> . Cluster sets.....	310
16.9 <i>V. Azarin</i> . Minimal subharmonic function.....	313
16.10 <i>M. Sodin</i> . Subharmonic functions and logarithms of moduli.....	315
16.11 <i>M. Kadec</i> . On inverse problem of best approximation.....	316
16.12 <i>J. Langley, L. Rubel</i> . Derivatives of unbounded analytic functions.....	317
16.13 <i>G. Belitskii, V. Tkachenko</i> . Global solvability of a difference equation ..	321
16.14 <i>S. Havinson</i> . A problem on exact majorants.....	322
16.15 <i>A. Eremenko, B. Fuglede, M. Sodin</i> . Harmonic measure of three-sets ..	323
16.16 <i>W. Hayman</i> . A uniqueness problem for polyharmonic functions.....	326
16.17 <i>J. Král</i> . Some extension problems.....	328
16.18 <i>R. Kaufman</i> . Partition of singularities of analytic functions.....	330
S.16.19 <i>A. Goldberg, A. Eremenko</i> . Exceptional values of various kinds.....	331
S.16.20 <i>A. Goldberg, A. Eremenko, I. Ostrovskii</i> . Valiron exceptional values....	333
S.16.21 <i>B. Levin, I. Ostrovskii</i> . Zero-sets of sine-type functions.....	335
S.16.22 <i>B. Levin</i> . An extremal problem for subharmonic functions.....	337
Chapter 17. \mathbb{C}^n (ed. by L. Aizenberg).....	339
17.1 <i>G. Henkin, R. Novikov</i> . Proper mappings of classical domains.....	341
17.2 <i>L. Rubel</i> . Holomorphic endomorphisms of regions in \mathbb{C}^n	344
17.3 <i>M. Jarnicki, P. Pflug</i> . The Carathéodory topology.....	346
17.4 <i>L. Aizenberg</i> . Holomorphic extension from a part of the boundary.....	347

17.5	<i>Yu. Khurumov</i> . Mappings between CR manifolds	350
17.6	<i>B. Jöricke</i> . Polynomial convexity of totally real discs	353
17.7	<i>A. Sergeev</i> . $\bar{\partial}$ in the future tube	356
17.8	<i>A. Sergeev</i> . Around the extended future tube conjecture	360
17.9	<i>L. Ronkin</i> . Jessen function of holomorphic almost periodic function	363
17.10	<i>S. Znamenskii</i> . \mathbb{C} -convex sets	366
17.11	<i>H. Hedenmalm</i> . Outer functions in the ball algebra	368
17.12	<i>H. Alexander</i> . Polynomially convex hulls	369
17.13	<i>F. Forelli</i> . The extreme rays of the positive pluriharmonic functions	371
17.14	<i>S. Krushkal</i> . On biholomorphy of holomorphic mappings	373
17.15	<i>C. Berenstein, R. Gay, A. Yger</i> . Residue currents and Mellin transform	375
17.16	<i>C. Berenstein, R. Gay, A. Yger</i> . About Pompeiu's problem	378
17.17	<i>R. Gay, A. Méril, A. Yger</i> . About E. Fischer's problem	380
17.18	<i>J. Esterle</i> . Iteration of holomorphic mappings on \mathbb{C}^n	382
Chapter 18. Geometric function theory (ed. by P. Duren)		383
18.1	<i>C. Bishop</i> . Harmonic measure and Hausdorff dimension	385
18.2	<i>B. Korenblum</i> . Majorization and domination in the Bergman space	388
18.3	<i>K. Zhu</i> . Schatten class composition operator on the Bergman space	390
18.4	<i>S. Saitoh</i> . On an interpolation problem for $ dz $ periods	392
18.5	<i>A. Goodman</i> . Coefficient problems in geometric function theory	394
18.6	<i>J. Krzyż</i> . Quasi-symmetric starlike functions	396
18.7	<i>A. Grinshpan</i> . Advanced coefficient problems for univalent functions	397
18.8	<i>J. Rovnyak</i> . Extension problem for coefficients of Riemann mappings	401
18.9	<i>V. Belyi</i> . Moduli of smoothness of Riemann mapping functions	403
18.10	<i>A. Baernstein II</i> . Landau's constant and extremal problems	404
18.11	<i>P. Duren</i> . Harmonic mappings in the plane	408
18.12	<i>K. Stephenson</i> . Circle packings and discrete analytic functions	410
18.13	<i>I. Milin</i> . A conjecture on logarithmic coefficients of univalent function	414
18.14	<i>J. Heinonen, J.-M. Wu</i> . Quasircles, A_∞ , and harmonic measure	416
18.15	<i>P. Duren</i> . Support points of univalent functions	420
18.16	<i>A. Baernstein II</i> . More problems by Albert Baernstein	422
Chapter 19. Holomorphic dynamics (ed. by B. Bielefeld and M. Lyubich)		423
19.1	<i>B. Bielefeld</i> . Questions in quasiconformal surgery	425
19.2	<i>C. McMullen</i> . Rational maps and Teichmüller space	430
19.3	<i>J. Milnor</i> . Thurston's algorithm without critical finiteness	434
19.4	<i>M. Rees</i> . A possible approach to a complex renormalization problem	437
19.5	<i>L. Carleson</i> . Geometry of Julia sets	441
19.6	<i>J. Milnor</i> . Problems on local connectivity	443
19.7	<i>M. Lyubich</i> . Measure and dimension of Julia Sets	447
19.8	<i>F. Przytycki</i> . Invariant measures for iterations of holomorphic maps	450
19.9	<i>R. Devaney</i> . Open questions in non-rational complex dynamics	455
19.10	<i>A. Eremenko, M. Lyubich</i> . Wandering domains for holomorphic maps	458
19.11	<i>S. Sutherland</i> . Bad polynomials for Newton's method	460

Chapter 20. Miscellaneous problems	463
20.1 <i>S. Shishkin, V. Yakubovich</i> . Convexity of the joint numerical range	464
20.2 <i>S. Krein, G. Kurina</i> . Duality theorem for an optimization problem	467
20.3 <i>T. Azizov</i> . Simple p -cyclic Pontrjagin space selfadjoint operators	468
20.4 <i>E. Gorin</i> . Norms and extremals of convolution operators	469
20.5 <i>V. Lin</i> . Holomorphic mappings and algebraic functions.....	475
20.6 <i>V. Lin, M. Zaidenberg</i> . Singular points of a plane algebraic curve	479
20.7 <i>A. Gulisashvili</i> . Rearrangement-invariant hulls of sets	480
Subject index	483
Author index.....	495
Standard notation	507