
Contents

<i>Preface</i>	<i>page ix</i>
<i>Introduction</i>	1
0 Preliminaries	4
0.1 Banach spaces and operators	4
0.2 Finite dimensional spaces and operators	7
0.3 Classical sequence spaces	8
0.4 Classical function spaces	9
0.5 Lorentz spaces	13
0.6 Interpolation methods	18
0.7 Summation operators	19
0.8 Finite representability and ultrapowers	20
0.9 Extreme points	21
0.10 Various tools	23
1 Ideal norms and operator ideals	25
1.1 Ideal norms	25
1.2 Operator ideals	28
1.3 Classes of Banach spaces	32
2 Ideal norms associated with matrices	35
2.1 Matrices	35
2.2 Parseval ideal norms and 2-summing operators	38
2.3 Kwapien ideal norms and Hilbertian operators	47
2.4 Ideal norms associated with Hilbert matrices	58
3 Ideal norms associated with orthonormal systems	65
3.1 Orthonormal systems	66
3.2 Khintchine constants	70
3.3 Riemann ideal norms	72

3.4	Dirichlet ideal norms	76
3.5	Orthonormal systems with special properties	85
3.6	Tensor products of orthonormal systems	86
3.7	Type and cotype ideal norms	89
3.8	Characters on compact Abelian groups	98
3.9	Discrete orthonormal systems	111
3.10	Some universal ideal norms	115
3.11	Parseval ideal norms	123
4	Rademacher and Gauss ideal norms	126
4.1	Rademacher functions	127
4.2	Rademacher type and cotype ideal norms	131
4.3	Operators of Rademacher type	136
4.4	B-convexity	143
4.5	Operators of Rademacher cotype	152
4.6	MP-convexity	159
4.7	Gaussian random variables	164
4.8	Gauss versus Rademacher	172
4.9	Gauss type and cotype ideal norms	185
4.10	Operators of Gauss type and cotype	190
4.11	Sidon constants	196
4.12	The Dirichlet ideal norms $\delta(\mathcal{R}_n, \mathcal{R}_n)$ and $\delta(\mathcal{G}_n, \mathcal{G}_n)$	207
4.13	Inequalities between $\delta(\mathcal{R}_n, \mathcal{R}_n)$ and $\varrho(\mathcal{R}_n, \mathcal{J}_n)$	212
4.14	The vector-valued Rademacher projection	222
4.15	Parseval ideal norms and γ -summing operators	226
4.16	The Maurey–Pisier theorem	233
5	Trigonometric ideal norms	235
5.1	Trigonometric functions	236
5.2	The Dirichlet ideal norms $\delta(\mathcal{E}_n, \mathcal{E}_n)$	241
5.3	Hilbert matrices and trigonometric systems	264
5.4	The vector-valued Hilbert transform	269
5.5	Fourier type and cotype ideal norms	281
5.6	Operators of Fourier type	288
5.7	Operators of Fourier cotype	304
5.8	The vector-valued Fourier transform	305
5.9	Fourier versus Gauss and Rademacher	313
6	Walsh ideal norms	321
6.1	Walsh functions	322
6.2	Walsh type and cotype ideal norms	323
6.3	Operators of Walsh type	325

6.4	Walsh versus Rademacher	331
6.5	Walsh versus Fourier	341
7	Haar ideal norms	344
7.1	Martingales	345
7.2	Dyadic martingales	347
7.3	Haar functions	353
7.4	Haar type and cotype ideal norms	355
7.5	Operators of Haar type	364
7.6	Super weakly compact operators	373
7.7	Martingale type ideal norms	380
7.8	J-convexity	390
7.9	Uniform q -convexity and uniform p -smoothness	399
7.10	Uniform convexity and uniform smoothness	412
8	Unconditionality	429
8.1	Unconditional Riemann ideal norms	429
8.2	Unconditional Dirichlet ideal norms	430
8.3	Random unconditionality	431
8.4	Fourier unconditionality	432
8.5	Haar unconditionality/UMD	436
8.6	Random Haar unconditionality	443
8.7	The Dirichlet ideal norms $\delta(\mathcal{W}_n, \mathcal{W}_n)$	456
8.8	The Burkholder–Bourgain theorem	459
9	Miscellaneous	461
9.1	Interpolation	461
9.2	Schatten–von Neumann spaces	469
9.3	Ideal norms of finite rank operators	475
9.4	Orthogonal polynomials	480
9.5	History	489
9.6	Epilogue	502
	<i>Summaries</i>	509
	<i>List of symbols</i>	514
	<i>Bibliography</i>	523
	<i>Index</i>	546