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Notation

The symbol $:=$ means "by definition".

Blackboard bold letters:

$\mathbb{A}$	the algebra introduced in Section 8.37;
$\mathbb{B}$	the algebra defined in Section 8.37;
$\mathbb{C}$	field of all complex numbers;
$\mathbb{D} := \{z \in \mathbb{C} : \|z\| < 1\}$	open unit disk;
$\mathbb{N} := \{1, 2, \ldots\}$	set of all natural numbers;
$\mathbb{R}$	field of all real numbers;
$\dot{\mathbb{R}} := \mathbb{R} \cup \{\infty\}$	one point compactification of $\mathbb{R}$, see Section 9.1;
$\overline{\mathbb{R}} := \mathbb{R} \cup \{-\infty, +\infty\}$	two-point compactification of $\mathbb{R}$, see Section 9.1;
$\mathbb{R}_+ = (0, +\infty)$	positive half-line;
$\mathbb{T} := \{z \in \mathbb{C} : \|z\| = 1\}$	unit circle;
$\mathbb{T}^n$	n-dimensional torus;
$\mathbb{T}^\circ := \mathbb{T} \setminus \{-1\}$	punctured unit circle;
$\mathbb{Z}$	set of all integer numbers;
$\mathbb{Z}_+ := \{0, 1, 2, \ldots\}$	set of all nonnegative integer numbers;
$\mathbb{Z}_- := \mathbb{Z} \setminus \mathbb{Z}_+$	set of all negative integer numbers;
$\mathbb{Z}^2_{++} := \mathbb{Z}_+ \times \mathbb{Z}_+$.	

Calligraphic Latin letters:

$\mathcal{A}$, $\mathcal{A}^\infty$	the algebras defined in Section 3.39;
$\mathcal{A}_r(z, w)$	the circular arc joining z to w, see Section 5.12;
$\mathcal{B}$, $\mathcal{B}^\infty$	the algebras introduced in Section 4.15;
$\mathcal{C}_0(X, Y)$	finite-rank operators, see Sections 1.1, 1.3;
$\mathcal{C}_p(X, Y)$	Schatten-von Neumann classes, see Sections 1.1, 1.3;
$\mathcal{C}_\infty(X, Y)$	compact operators, see Sections 1.1, 1.3;
$\mathcal{D}$, $\mathcal{D}^\infty$	the algebras defined in Section 7.2;
$\mathcal{G}$	the ideal defined in Section 7.2;
$\mathcal{J}$	the ideals defined in Sections 4.16 and 7.8;
$\mathcal{L}(X, Y)$	bounded linear operators, see Section 1.1;

$\mathcal{M}$	the ideal defined in Section 4.16;
$\mathcal{N}$, $\mathcal{N}^A$	the ideals defined in Section 3.50;
$\mathcal{O}_r(z,w)$	the lentiform domain defined in Section 5.12;
$\mathcal{P}$	Laurent polynomials, see Section 1.42;
$\mathcal{P}_A$	analytic polynomials, see Section 1.41;
$\mathcal{R}$	rational functions on $\mathbb{T}$ with poles off $\mathbb{T}$, see Section 2.57;
$\mathcal{R}(A)$	radical of the Banach algebra A, see Section 1.17;
$\mathcal{R}(a)$	essential range of the function a, see Section 2.27;
$\mathcal{S}$	the algebra defined in Section 7.8;
$\mathcal{W}_{\{A_n\}}(A)$	see Section 7.36.

Capital Latin letters:

B^p_α, $(B^p_\alpha)_A$	Besov classes, see Section 1.50;
$BC(\mathbb{R})$	bounded continuous functions on $\mathbb{R}$, see Section 9.18;
BMO	functions of bounded mean oscillation on $\mathbb{T}$, see Section 1.47;
$BMO(\mathbb{R})$	functions of bounded mean oscillation on $\mathbb{R}$, see Section 1.47;
$BSO(\mathbb{R})$	bounded slowly oscillating functions, see Section 9.35;
C	continuous functions on $\mathbb{T}$;
$C(Y)$	continuous functions on Y;
C_E	the algebra generated by χ_E and C, see Section 4.90;
C^α	Hölder-Zygmund classes, see Section 1.50;
C^∞	infinitely differentiable functions on $\mathbb{T}$;
C_p	continuous multipliers on ℓ^p, see Section 2.43;
$C_{p,\mu}$	continuous multipliers on ℓ^p_μ, see Section 6.7;
$C^{p,\mu}_{N\times N}$	continuous multipliers on $\ell^{p,\mu}_N$, see Section 6.7;
$C_p(\dot{\mathbb{R}})$	continuous Fourier multipliers on $L^p(\mathbb{R})$, see Section 9.7;
$\overline{C_p + H^\infty_p}$	$\overline{C + H^\infty}$-multipliers on ℓ^p defined in Section 2.51;
$\mathrm{Cen}\,A$	center of the algebra A, see Section 1.33;
$\mathrm{Coker}\,A$	cokernel of A, see Section 1.11;
$\mathrm{Com}\,F$	commutant of the set F, see Section 1.30;
$D^p_\mu(\alpha)$	the space defined in Section 6.46;
$D_n(a)$	determinant of $T_n(a)$, see Chapter 10;
$E(a)$	see Section 10.28;
$E^f(a)$	see Section 10.90;
F	Fourier transform, see Section 9.1;
$F\ell^p$	see Section 1.49;
$F\ell^p_\alpha$	see Section 1.49;
$F\ell^{r,p}_{\alpha,\beta}$	see Section 1.49;
GA	group of the invertible elements of the Banach algebra A; see Section 1.16;
$G(a)$	see Section 10.5;
$G_2(a)$	see Section 10.84;

$G^f(a)$	see Section 10.90;
$\mathrm{G}(z)$	Barnes G-function, see Section 10.58;
H^p	Hardy spaces on $\mathbb{T}$, see Section 1.39;
$\overset{\circ}{H}{}^p$	see Section 1.42;
H^p_-	see Section 1.42;
$\overset{\circ}{H}{}^p_-$	see Section 1.42;
H^∞_p	see Section 2.51;
H^∞_F	see Section 4.55;
$H(a)$	Hankel operator, see Section 2.10;
$H_\mathbb{R}(a)$	Hankel integral operator, see Section 9.6;
$H^p(w)$	weighted Hardy spaces on $\mathbb{T}$, see Section 1.44;
$H^p(\mathbb{T}^2)$	Hardy spaces on the torus $\mathbb{T}^2$, see Section 8.2;
$H^\infty_{\pm\pm}(\mathbb{T}^2)$	see Section 8.7;
$\mathrm{Im}\, A$	image (range) of the operator A;
$\mathrm{Im}\, z$	imaginary part of the complex number z;
$\mathrm{Ind}\, A$	index of the operator A, see Section 1.11;
$\mathrm{Ind}_p A$	index of the operator A on H^p or ℓ^p, see Section 2.66;
J	flip operator, see Sections 2.10, 9.6;
$K^{\alpha,\beta}_{p,q}$	the algebras introduced in Sections 10.8, 10.12;
$\mathrm{Ker}\, A$	kernel of the operator A, see Section 1.11;
L^p	Lebesgue space on $\mathbb{T}$, see Section 1.36;
L^p_+	$:= L^p(\mathbb{R}_+)$ Lebesgue space on $\mathbb{R}_+$, see Section 9.1;
$L^p(\mathbb{R})$	Lebesgue space on $\mathbb{R}$;
$L^p(\mathbb{T}^2)$	Lebesgue space on the torus $\mathbb{T}^2$, see Section 8.2;
$L^p(w)$	weighted Lebesgue space on $\mathbb{T}$, see Section 1.44;
$L^p_\pm(w)$	weighted Hardy space on $\mathbb{T}$, see Section 1.44;
$LCS(\mathbb{T}^\circ)$	functions that are locally C-sectorial on $\mathbb{T}^\circ$, see Section 4.72;
$LT(X)$	algebra of Toeplitz-like operators on X, see Section 7.12;
M_α	the operator defined in Section 6.19;
M^p	algebra of multipliers on $\ell^p(\mathbb{Z})$, see Section 2.5;
M^p_μ	algebra of multipliers on $\ell^p_\mu(\mathbb{Z})$, see Section 6.1;
$M^{p,\mu}_{N\times N}$	algebra of multipliers on $\ell^{p,\mu}_N(\mathbb{Z})$, see Section 6.7;
$M^{\langle p\rangle}$	see Section 2.43;
$M^{\langle p,\mu\rangle}$	see Section 6.7;
$M(a)$	one-dimensional multiplication operator, see Sections 2.1, 2.3;
$M_0(a)$	see Section 1.47;
$M_\delta(a)$	see Section 1.47;
$M_2(a)$	two-dimensional multiplication operator, see Section 8.4;
$M_\mathbb{R}(a)$	multiplication operator on $\mathbb{R}$, see Section 9.2;
$M_{\mathbb{R}^2}(a)$	multiplication operator on $\mathbb{R}^2$, see Section 9.51;
$M(A)$	maximal ideal space of the algebra A, see Section 1.18;
$M_\beta(A)$	fiber of $M(A)$ over β, see Section 1.24;
$M^p(\mathbb{T}^2)$	algebra of multipliers on $\ell^p(\mathbb{T}^2)$, see Section 8.7;

$M^p(\mathbb{R})$	algebra of Fourier multipliers on $L^p(\mathbb{R})$, see Section 9.2;
$M^p(\mathbb{R}^2)$	algebra of Fourier multipliers on $L^p(\mathbb{R}^2)$, see Section 9.51;
P	Riesz projection, see Sections 1.42, 1.43, 1.49, or canonical projection of $L^p(\mathbb{R})$ onto $L^p(\mathbb{R}_+)$, see Section 9.1;
P_n	the projections defined in Section 7.5;
P_τ	the projections defined in Section 9.38;
P_θ	the projections defined in Section 7.93;
P_S	canonical projection of $\ell^p(\mathbb{Z}^2)$ onto $\ell^p(S)$, see Section 8.55;
P_S	canonical projection of $L^p(\mathbb{R}^2)$ onto $L^p(S)$, see Section 9.60;
P_2B	see Section 2.89;
PC	piecewise continuous functions on $\mathbb{T}$, see Section 2.79;
PC_0	piecewise continuous functions with finite number of jumps, see Section 2.79;
$PC_{p,\mu}$	piecewise continuous multipliers on ℓ^p_μ, see Section 6.25;
$PC^{p,\mu}_{N\times N}$	piecewise continuous multipliers on $\ell^{p,\mu}_N$, see Section 6.25;
$PC_p(\mathbb{R})$	piecewise continuous Fourier multipliers, see Section 9.12;
$P_n\mathbb{C}$	see Section 4.71;
P_nC	see Section 3.10;
PK	piecewise constant functions on $\mathbb{T}$ with finite number of jumps, see Section 6.25;
$PK(\mathbb{R})$	piecewise constant functions on $\mathbb{R}$ with finite number of jumps, see Section 9.12;
PQC	piecewise quasicontinuous functions, 3.35;
PQC_0	see Section 3.35;
P_nQC	see Section 3.37;
Q	$:= I - P$;
Q_n	$:= I - P_n$;
QC	quasicontinuous functions, see Section 2.80;
QC_E	the algebra generated by χ_E and QC, see Section 4.90;
$Q_i(\mathfrak{A})$	quasicommutator ideal, see Section 3.41;
$\operatorname{Re} A$	real part of the matrix A, $\operatorname{Re} A = (A + A^*)/2$;
$\operatorname{Re} z$	real part of the complex number z;
$R^p_\mu(\alpha)$	the space defined in Section 6.46;
S	Cauchy singular integral operator, see Section 1.42;
S_i	the projection introduced in Section 3.43;
Smb_i	the mapping introduced in Section 3.43;
$SO(\mathbb{R})$	slowly oscillating functions, see Section 9.35;
$T(a)$	Toeplitz operator, see Sections 2.6, 5.1, 6.1;
$T_2(a)$	Toeplitz operator over the quarter-plane, see Section 8.9;
$T_{+\cdot}(a)$	Toeplitz operator over half-plane, see Section 8.12;
$T_{\cdot+}(a)$	Toeplitz operator over half-plane, see Section 8.12;
$T_{r,k-r}(a)$	higher-dimensional Toeplitz operator, see Section 8.73;
$T_S(a)$	Toeplitz operator on $\ell^p(S)$, see Section 8.55;

$T_n(a)$	$= P_n T(a) P_n \vert \mathrm{Im}\, P_n$, see Section 7.5;
$T_n^2(a)$	$= (P_n \otimes P_n) T_2(a) (P_n \otimes P_n) \vert \mathrm{Im}\,(P_n \otimes P_n)$, see Section 8.62;
U, $U^{\pm n}$	bilateral shifts, see Section 2.9;
U, $U^{\#}$	the mapping defined in Section 9.1;
U_τ	family of open neighborhoods of τ, see Section 2.67;
V, $V^{(\pm n)}$	unilateral shifts, see Section 2.9;
VMO	functions of vanishing mean oscillation on $\mathbb{T}$, see Section 1.47;
$VMO(\mathbb{R})$	functions of vanishing mean oscillation on $\mathbb{R}$, see Section 1.47;
W	Wiener algebra on $\mathbb{T}$, see Sections 1.49, 2.5;
$W^{\alpha,\beta}$	weighted Wiener algebra, see Section 1.49;
$W_{\gamma,\delta}$	see Section 8.31;
$W(\mathbb{T}^2)$	Wiener algebra on $\mathbb{T}^2$, see Section 8.4;
$W(\mathbb{R})$	Wiener algebra on $\mathbb{R}$, see Section 9.1;
$W(\mathbb{R}^2)$	Wiener algebra on $\mathbb{R}^2$, see Section 9.51;
$W(a)$	Wiener-Hopf integral operator, see Section 9.4;
$W_2(a)$	Wiener-Hopf integral operator over the quarter-plane, see Section 9.51;
$W_K(a)$	Wiener-Hopf integral operator on $L^p(K)$, see Section 9.57;
$W_\tau(a)$	$= P_\tau W(a) P_\tau \vert \mathrm{Im}\, P_\tau$, see Section 9.38;
W_n	the operator defined in Section 7.6;
X	$= M(L^\infty)$ (if it does not denote a Banach space).

Latin letters:

$\widehat{a}$	harmonic extension of a, see Section 1.37;
$\widetilde{a}$	the function defined by $\widetilde{a}(t) := a(1/t)$ on $\mathbb{T}$, see Sections 2.15, 7.19; or by $\widetilde{a}(t) = a(-t)$ on $\mathbb{R}$, see Section 9.6;
$\overline{a}$	complex conjugate of $a \in L^\infty$, see Section 7.19;
a^*	Hermitian adjoint of $a \in L^\infty_{N\times N}$, see Section 7.19;
$a^{\#}$	see Sections 2.25, 4.72, 9.1;
$a^\top$	transposed of $a \in L^\infty_{N\times N}$, see Section 7.19;
a_n	n-th Fourier coefficient of a, see Section 1.36;
a_r	harmonic extension of a, see Section 1.37;
$\mathrm{alg}\, i(\mathfrak{A})$	the algebra generated by $\{i(a) : a \in \mathfrak{A}\}$, see Section 3.41;
$\arg z$	argument of the complex number z, see Section 5.35;
$\mathrm{clos}\, M$	closure of the set M;
$\mathrm{closid}_{\mathfrak{A}}\mathfrak{S}$	the closed ideal of $\mathfrak{A}$ generated by $\mathfrak{S}$, see Section 3.45;
$\mathrm{conv}\, M$	closed convex hull of the set M;
$\det A$	determinant of A, see Section 1.6;
$\det_\mu A$	determinant of A as operator on ℓ^2_μ, see Section 10.71;
$\det_p A$	p-regularized determinant of A, see Section 1.8;
$\mathrm{diag}\,(a_1, a_2, \ldots)$	the diagonal operator (matrix) with diagonal entries $a_1, a_2, \ldots$;

$\dim M$	dimension of M;
$\mathrm{dist}(a, B)$	see Section 1.21;
$\mathrm{dist}_F(a, B)$	see Section 1.21;
$\mathrm{dist}_{L^\infty}(a, B)$	$= \inf\{\|a - b\|_{L^\infty} : b \in B\}$ ($a \in L^\infty$, $B \subset L^\infty$);
$\mathrm{dist}_{BMO}(a, B)$	$= \inf\{\|a - b\|_{BMO} : b \in B\}$ ($a \in BMO$, $B \subset BMO$);
e_n	see Section 1.50;
$h_r a$	harmonic extension of a, see Section 1.37;
$\mathrm{ind}\, a$	index (winding number) of the continuous function a, see Section 2.41;
$\mathrm{ind}_1 a$, $\mathrm{ind}_2 a$	see Section 8.16;
$k_\lambda a$, $k_{\lambda,t} a$	see Section 3.14;
$k_{\lambda\mu} a$	see Section 8.48;
ℓ^0, $\ell^0(\mathbb{Z})$	sequences with finite support, see Section 1.49;
ℓ^p	see Section 1.49;
$\ell^p(\mathbb{Z})$	see Section 1.49;
$\ell^p(\mathbb{Z}_+)$	see Section 1.49;
ℓ^p_α	see Section 1.49;
$\ell^p_\alpha(\mathbb{Z})$	see Section 1.49;
$\ell^{r,s}_{\alpha,\beta}$	see Section 1.49;
$\ell^{p,\pm\infty}$	see Section 6.57;
$\ell^p(\mathbb{Z}^2)$	see Section 8.1;
$\ell^p(\mathbb{Z}^2_{++})$	see Section 8.1;
$\mathrm{lin}\, M$	linear hull of the set M;
$m(a)$, $m^\pm(a)$	mean motion of a, see Section 9.19;
sgn_ξ	the function defined in Section 9.2;
$\mathrm{sp}\, a$, $\mathrm{sp}_A a$	spectrum of a in A, see Section 1.16;
$\mathrm{sp}_\varepsilon A$	ε-pseudospectrum of the operator A, see Section 7.94;
$\mathrm{sp}^{B,C}_{\varepsilon,X} A$	structured ε-pseudospectrum of the operator A, see Section 7.97;
$\mathrm{sp}_{\mathrm{ess}} A$, $\mathrm{sp}_{\Phi(X)} A$	essential spectrum of the operator A, see Section 2.27;
$\mathrm{supp}\, a$	support of the function a;
$\mathrm{tr}\, A$	trace of the operator A, see Section 1.4.

Capital Greek letters:

Γ	Gelfand map, see Section 1.18;
$\Pi\{X, Y; A_n\}$	see Section 7.1;
$\Pi\{X, Y; P_n\}$	see Section 7.1;
$\Pi\{X; P_n\}$	see Section 7.1;
$\Pi\{P_n\}$	see Section 7.1;
$\Pi_p\{P_n\}$	see Section 9.38;
$\Phi(X, Y)$	Fredholm operators, see Section 1.11;
$\Phi_\pm(X, Y)$	semi-Fredholm operators, see Section 1.11.

Greek letters:

$\alpha_p(A)$	dimension of $\operatorname{Ker} A$ in H^p or ℓ^p, see Section 2.66;
γ_p	the function defined in Section 9.13;
$\gamma_\tau(a)$	integral gap, see Section 3.32;
$\partial_S M(A)$	Shilov boundary of $M(A)$, see Section 1.20;
η_β, $\eta_{\beta,\tau}$	see Section 5.35;
$\mu_n^{(\alpha)}$	see Section 6.19;
ξ_β, $\xi_{\beta,\tau}$	see Section 5.35;
σ_i	the mapping defined in Section 3.43;
$\sigma_n(a)$	n-th Fejér mean of a, see Section 3.13;
$\sigma_r(\mu)$	the function defined in Sections 5.12, 9.13;
φ_β, $\varphi_{\beta,\tau}$	canonical piecewise continuous functions, see Section 5.35;
χ_E	characteristic function of the set E;
χ_n	the function on $\mathbb{T}$ defined by $\chi_n(t) = t^n$, see Section 1.36;
$\omega(a)$, $\omega^\pm(a)$	see Section 9.19;
ω_δ	the function on $\mathbb{R}$ defined by $\omega_\delta(x) = \mathrm{e}^{\mathrm{i}\delta x}$, see Section 9.2.

Euler Fraktur letters:

$\mathfrak{N}^{PC}$, $\mathfrak{N}^{PQC}$	the maximal ideal spaces defined in Section 4.84;
$\mathfrak{N}_p^A$, $\mathfrak{N}_p$	the maximal ideal spaces introduced in Section 8.37;
$\mathfrak{R}_p^A$, $\mathfrak{R}_p$	the maximal ideal spaces defined in Section 8.65.

Nonalphabetic:

$(x)^\circ$	see Section 6.52;
$(x+0)$	see Section 7.83;
$\sim$	asymptotically equal, see Section 10.57;
$\cong$	isometrically isomorphic;
$\vert$	restricted to;
$\vert \cdot \vert$	Lebesgue measure;
$\Vert \cdot \Vert_*$	*BMO* semi-norm, see Section 1.47;
$\Vert \cdot \Vert_{\Phi(X)}$	essential norm, see Section 2.27.

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