

Notation Index

- D_T defect operator of the row-contraction T , 186
- D_{T^*} defect operator of a contraction-operator T , 7
- D_{ω, T^*} multivariable ω -defect operator, 285
- $H_{\omega, \mathcal{Y}}^2(\mathbb{F}_d^+)$ \mathcal{Y} -valued weighted Hardy–Fock space, 35
- $H_{\mathcal{Y}}^2$ \mathcal{Y} -valued Hardy space of the unit disk, 4, 7, 9
- $H_{\mathcal{Y}}^2(\mathbb{F}_d^+)$ \mathcal{Y} -valued Hardy–Fock space, 14, 50, 189
- $H_{\{\mathcal{U}_\beta\}}^2(\mathbb{F}_d^+)$ time-varying Fock space, 250
- M_Θ the operator of left multiplication by a power series Θ , 42
- W^+ Wiener class of absolutely summable power series, 104
- $\Gamma_{\omega, \mathbf{A}}[I_{\mathcal{X}}]$ ω -pre-defect operator, 116, 286
- $\Gamma_{\omega, \mathbf{A}}^{(k)}[I_{\mathcal{X}}]$ k -shifted ω -pre-defect operator, 116, 286
- $\Psi_\omega(z)$ the universal factor associated with the weight ω , 78
- μ_n the standard n -Bergman weight, 37
- $\mathcal{A}_{n, \mathcal{Y}}$ \mathcal{Y} -valued weighted Bergman space, 11
- $\mathcal{A}_{n, \mathcal{Y}}(\mathbb{F}_d^+)$ \mathcal{Y} -valued weighted Bergman–Fock space, 16, 30, 125, 206
- $\mathcal{C}(\omega)$ the class of ω -isometric-like operator tuples, 146
- $\mathcal{C}_s(\omega)$ the class of ω -shift operator tuples, 147
- $\mathcal{C}_u(\omega)$ the class of ω -unitary-like operator tuples, 147
- $\mathcal{G}_{\omega, C, \mathbf{A}}$ multivariable, ω -observability gramian, 113
- $\mathcal{G}_{p, n; C, \mathbf{A}}$ (p, n) -observability gramian, 354
- $\mathcal{H}(K)$ noncommutative formal reproducing kernel Hilbert space with reproducing kernel K , 29
- \mathcal{H}_T^ℓ lifted norm space associated with a contraction-operator T , 46
- \mathcal{H}_Π^p the pullback space associated with a positive semidefinite contraction-operator Π , 47
- $\mathcal{L}(\mathcal{X}, \mathcal{Y})$ the space of bounded linear operators from \mathcal{X} to \mathcal{Y} , 3
- $\mathcal{M}^{\perp\perp}$ Brangesian complement of the subspace \mathcal{M} , 46, 58, 190, 379
- \mathcal{M}^\perp the orthogonal complement of the subspace \mathcal{M} , 67
- $\mathcal{O}_{C, \mathbf{A}}$ multivariable observability operator, 49
- $\mathcal{O}_{\omega, C, \mathbf{A}}$ multivariable ω -observability operator, 39, 113
- $\mathcal{O}_{n, C, \mathbf{A}}$ n -observability operator of the output pair (C, A) , 13
- $\mathcal{O}_{n, C, \mathbf{A}}$ multivariable n -observability operator, 18, 166
- $\mathcal{O}_{p, n; C, \mathbf{A}}$ (p, n) -observability operator, 321, 370, 400
- $\mathcal{Y}\langle\langle z \rangle\rangle$ the space of \mathcal{Y} -valued formal power series in noncommuting indeterminates $z = (z_1, \dots, z_d)$, 26
- $\ell_{\mathcal{Y}}^2(\mathbb{F}_d^+)$ the space of square-summable vector sequences over \mathbb{F}_d^+ , 78
- \mathbb{F}_d^+ the unital free semigroup generated by d letters, 14
- $k_\omega(z, \zeta)$ weighted Hardy–Fock space kernel, 36

$k_{\text{nc}, \text{Sz}}(z, \zeta)$ noncommutative Szegő kernel, 30	$\mathbf{S}_{\omega, R}^*$ the right backward shift on $H_{\omega, \mathcal{Y}}^2(\mathbb{F}_d^+)$, 36
$k_{\text{nc}, n}(z, \zeta)$ noncommutative weight- n Bergman kernel, 30	$\mathbf{S}_{\omega, R}$ the right shift on $H_{\omega, \mathcal{Y}}^2(\mathbb{F}_d^+)$, 36
$\mathfrak{G}_{\omega, k, C, A}$ shifted ω -observability gramian, 137	$\mathcal{O}_{C, A}$ observability operator of the output pair (C, A) , 4, 7
$\mathfrak{D}_{\omega, k, C, A}$ shifted ω -observability operator, 137	$\mathcal{G}_{C, A}$ observability gramian, 103
	$\hat{\mathcal{G}}_{n, C, A}$ multivariable n -observability gramian, 124

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- (p, n) -Bergman inner multiplier, 346
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