

Index

- $B(S)$
 - space of bounded functions, 16
 - $CW_u(B)$, 114
 - $C^b(S)$, 8
 - $LC(S)$, 40
 - $LC^b(S)$, 42
 - $M^b(S)$, 9
 - $U_\delta(T)$, 41, 315
 - X_u , 34
 - $[B]_x$, 103
 - $\mathbf{r}(B)$, 87
 - $\mathbf{r}_o(B)$, 87
 - $\mathbf{r}_{cw}(B)$, 104
 - $\mathcal{M}^s(S)$, 58
 - $\mathcal{M}_+^s(S)$, 58
 - $\mathcal{M}^t(S)$, 58
 - $\mathcal{M}_+^t(S)$, 58
 - \mathcal{R}_0 , 177, 180, 244, 245, 248
 - T_0 , 3, 177, 265
 - χ_T , 278
 - \tilde{X}_B , 3
 - \tilde{X}_F , 3
 - ϵ -net, 316
 - $\eta^x(B)$, 111
 - $\eta_x(B)$, 104
 - lower local Collatz–Wielandt radius, 104
 - $\gamma_x(B)$, 87
 - \wedge , 15
 - \vee , 15
 - σ -finite
 - measure, 192
 - \sim , 34
 - $\|B\|_x$, 111
 - $cw(B)$, 104
 - $\|\cdot\|_u$, 34
- absolute value
 - lattice, 15
 - abstract L-space, 16
 - abstract M-space, 16
 - accumulation point, 313
 - additive
 - norm, 20
 - subset, 11
 - additive
 - operator, 14
 - approximate eigenvalue, 89
 - Archimedean cone, 12
 - asymptotically smooth, 228
- Banach
 - lattice, 16
 - Banach space, 316
 - Borel
 - σ -algebra, 51
 - set, 51
 - bounded
 - set, 315
 - bounded Lipschitz norm, 45
 - bounded variation
 - sequence, 25
 - bv, 26
- Cauchy sequence, 316
 - characteristic function, 9
 - χ_T , 278
 - closed neighborhood, 314
 - closed set, 313
 - closure, 313
 - Collatz–Wieland spectral radius
 - upper, 111
 - Collatz–Wielandt
 - lower bound, 104
 - lower number, 103
 - lower spectral radius, 104
 - upper bound, 114
 - upper number, 111
 - colonization kernel, 215
 - compact
 - operator, 91, 319
 - set, 313
 - support, 41
 - compact attractor, 228
 - companion
 - half-norm, 29
 - norm, 31
 - companion growth bound, 91
 - companion norm, 75

- comparable
 - element, 34
- complete
 - monotonically, 13
 - serially, 11
 - topologically, 68
- completely metrizable, 68
- completeness, 316
- complexification, 102, 150
- concave
 - operator, 14
- cone, 12
 - Archimedean, 12
 - closed, 12
 - dual, 78
 - flat, 22
 - fully regular, 20
 - generated by convex set, 16
 - generating, 22
 - monotonically complete, 13
 - non-flat, 22
 - normal, 18
 - order cone, 12
 - regular, 20
- continuous, 40, 317
 - Lipschitz, 318
 - uniformly, 318
- convergence, 312
- convex
 - operator, 14
 - subset, 11
- countable
 - set, 317
- critical domain size, 272
- dense, 314
- derivative
 - lower order, 222
 - upper order, 222
- diameter, 315
- discrete
 - metric, 311
- distance, 40
 - from point to set, 41, 312
- dual
 - cone, 78
 - space, 77
 - wedge, 77
- eigenfunction, 204
- eigenfunctional, 88, 161
- eigenmeasure, 203, 204
- eigenvalue, 3
 - approximate, 89
- eigenvector, 3, 88
- equibounded, 44
- equicontinuous, 44
- equivalent
 - equivalent metrics, 68, 318
 - equivalent norms, 318
- exercises
 - abstract M-space, 16, 37
 - bounded operator, 75
 - complexification, 102
 - cones generated by convex sets, 17
 - flatnorm-discrete, 56
 - generating, total and non-flat cones, 24
 - half-norm, distance, 33
 - lattice, 16, 37
 - Lipschitz functions, 47
 - mating functions, 85
 - measure regular, 63
 - measure tight, 64
 - measure-inf-dominated, 310
 - normal cones, 19
 - norms created by orders, 37
 - regular points and cones, 22
 - sequences of bounded variation, 29
- Feller kernel, 8, 192
 - uniform, 206
- Feller kernel of separable measures, 192
- Feller kernel of tight measures, 192
- Feller property, 192
- flat
 - cone, wedge, 22
 - norm, 54
- functional
 - infimum, 81
 - uniformly positive, 106, 228
- generating
 - dual wedge, 78
 - wedge, cone, 22
- geometric
 - mean, 84, 280
- geometric growth factors, 87
- growth factor, 3, 177
- half-norm, 37, 78
 - canonical, 29
 - companion, 29, 142
- harmonic
 - mean, 84, 280
- homeomorphism, 317
- homogeneous
 - operator, 2, 73
 - subset, 11
- indicator function, 9
 - χ_T , 278
- infimum, 15
 - functional, 81
- inherent population growth rate, 3, 177
- integral projection model, 278
- integral projection models, 9
- integro-difference equation, 278
- integro-difference equations, 9

- interior of a set, 314
- interior point, 314
- iteroparous, 9, 241
- jointly topologically irreducible
 - kernels, 213
- kernel
 - colonization, 215
 - Feller, 8, 192
 - pre-tight, 199
 - strongly topologically irreducible, 213
 - sustaining, 211
 - tight, 199
 - topologically irreducible, 208
 - uniform Feller, 205
- kernels
 - jointly topologically irreducible, 213
- largest lower bound
 - of a set, 15
- lattice, 15
 - Banach, 16
 - normed, 16
- least upper bound
 - of a set, 15
- limit, 312
- limit point, 313, 315
- line, 12
- Lipschitz, 318
 - bounded norm, 45
 - constant, 40
 - continuous, 40
- lower bound
 - of a set, 15
- lower Collatz–Wielandt bound, 104
- lower Collatz–Wielandt number, 103
- lower Collatz–Wielandt spectral radius, 104
- lower order-derivative, 222
- mating function, 82
 - per capita, 82
- measure
 - σ -finite, 192
 - flat norm, 54
 - pretight, 58
 - regularity property, 63
 - separable, 58
 - tight, 58
 - tightness property, 64
 - total variation, 51
 - variation, 50
- metric, 311
 - discrete, 311
 - equivalent, 317
 - semimetric, 311
 - space, 311
 - topologically equivalent, 317
 - uniformly discrete, 56, 311
- metric space
 - universally tight, 58
- metrizable
 - completely, 68
 - topological space, 68
- monotonically complete, 13, 15, 39, 144
- neighborhood, 314
 - ϵ -neighborhood of a set, 315
 - of a set, 41
- Nemytskii operator, 281, 292
- neonate, 9
- neonates, 308
- non-flat
 - wegde, cone, 22
- norm, 314
 - additive, 20
 - bounded Lipschitz, 45, 70
 - dual bounded Lipschitz norm, 70
 - Dudley norm, 70
 - flat, 54, 70
 - Fortet–Mourier, 70
 - operator, 73
 - seminorm, 314
- normal
 - cone, 18, 20
 - dual cone, 78
 - point
 - for cone, 19–21, 38, 78
 - for operator, 74, 112
- normed vector space, 314
- open neighborhood, 314
- open set, 314
- operator
 - additive, 14
 - bounded, 73
 - compact, 91, 319
 - concave, 14
 - convex, 14
 - Nemytskii, 281, 292
 - norm, 73
 - order-preserving, 14
 - subadditive, 14
 - superadditive, 14
- orbital companion spectral radius, 91
- orbital spectral radius, 87
- order, 12
 - ordered vector space, 12
- order bound, 94
- order bounded
 - pointwise, 94
 - uniformly, 94
- order norm, 34
- order unit, 34
- order-derivative, 222
 - lower, 222
 - upper, 222
- order-preserving

- operator, 14
- persistence
 - uniform, 276
 - uniformly weak, 3, 238
- point
 - accumulation, 313
 - limit, 313
 - normal
 - for cone, 19
 - regular, 21
- point-dissipative, 228
- pointwise u -bounded, 94
- pre-tight
 - kernel, 199
 - measure, 58
 - set of measures, 58
- precompact set, 314
- pseudo-compact, 145
- regular
 - cone, 20
 - point, 21
- reproduction number
 - basic, 177
- semelparous, 9, 241, 277
- semicontinuous
 - lower, 38, 40, 150, 322
 - upper, 40, 322
- semilattice, 15
 - inf-semilattice, 15
 - sup-semilattice, 15
- separable
 - measure, 58
 - subset, 317
- serially complete, 11, 19, 23, 74, 75, 93, 94, 100, 144
- spectral radius, 87
 - orbital, 87
 - orbital companion, 91
- stability
 - locally asymptotic, 3
- strongly topologically irreducible
 - kernel, 213
- subadditive
 - operator, 14
- superadditive
 - operator, 14
- supremum, 15
- sustaining
 - kernel, 211
- tight
 - kernel, 199
 - measure, 58
 - set of measures, 58
- topological space
 - metrizable, 68
- topologically complete, 68
- topologically equivalent, 68, 317
- topologically irreducible
 - kernel, 208
- total
 - variation
 - of a measure, 51
 - wedge, cone, 22
- totally bounded set, 316
- triangle inequality, 311
- turnover number
 - basic, 3, 177, 265
- turnover operator
 - basic, 2, 3, 177, 265
 - population, 1
- two-sex model, 8
- two-sex models, 4
- u -bounded
 - element, 34
 - set, 34
- u -norm, 34
- u -positive, 81
- uniform
 - Feller kernel, 205
- uniform order unit, 39
- uniformly continuous, 318
- uniformly discrete
 - metric, 56, 311
- uniformly positive
 - functional, 106, 228
- uniformly u -bounded, 94
- universally tight
 - metric space, 58
- upper bound
 - of a set, 15
- upper Collatz–Wielandt bound, 114
- upper Collatz–Wielandt number, 111
- upper Collatz–Wielandt spectral radius, 111
- upper order-derivative, 222
- vanish at infinity, 41
- variation
 - of a measure, 50
 - total
 - of a measure, 51
- variation norm, 51
- wedge, 12
 - dual, 77
 - flat, 22
 - generated, 17
 - generating, 22
 - non-flat, 22
 - total, 22