

Index

- additive chain, 82
 - top-, 91
- additive eigenvector, 120
- additively
 - homogeneous map, 17
 - subhomogeneous map, 17
- admissible array, 225
 - minimal, 235
 - period of, 226
 - restricted, 249
 - sub-array of an, 226
- almost Archimedean cone, 258
- anti-chain, 83
- array, 225
- attractor, 59
- Axiom I, 74
- Axiom II, 74

- Banach’s contraction theorem, 67
- base point, 70
- Birkhoff contraction ratio, 31, 264
- Birkhoff–Hopf theorem, 264
- Bonsall cone spectral radius, 107
- Boolean map, 88
- bottom function, 35
- Bushell’s equation, 16

- Całka’s theorem, 62
- Collatz–Wielandt number, 118
- comparable, 217
- compatibility condition, 167
- complements condition, 173
- complete sequence, 224
- condition \mathbf{G} , 99
- condition \mathbf{L} , 148
- condition \mathbf{U} , 148

- cone, 3
 - almost Archimedean, 258
 - closed, 3
 - dual, 3
 - Lorentz, 3
 - minihedral, 9
 - normal, 10, 45
 - polyhedral, 3
 - simplicial, 9
 - solid, 3
 - standard positive, 3
 - strictly convex, 9
- cone spectral radius, 107, 279
 - Bonsall, 107, 279
 - continuous, 115
- cone spectrum, 101
- cone-linear map, 278
- contraction, 30
 - Lipschitz, 30
- contractive perturbation, 127
- converge at infinity, 71
- convergence from above, 97
- cross-ratio, 28
 - metric, 28
- cycle time, 18

- DAD* problem, 162
 - classic, 176
 - generalized, 163
 - solution, 163
- digraph associated with f , 131
- direct sum, 178
- dominate, 7
- dual cone, 3

- eigenvalue, 101, 285

- equivalent sequences, 71
- exposed face, 3
- extreme pair, 83
 - top-, 92
- extreme point, 34
- face, 3
 - exposed, 3
 - improper, 3
 - proper, 3
- facet, 3
 - defining functionals, 4
- fixed point, 58
 - locally attracting, 68
- Fréchet derivative, 11
- Fréchet differentiable, 11
- Frobenius normal form, 297
- Frobenius–König theorem, 177
- fully indecomposable matrix, 179
- geodesic, 49
 - path, 49
 - space, 49
 - uniquely, 51
- Gromov product, 198
- height, 217
- Hilbert’s metric, 26
- homogeneous map, 13
 - additively, 17
 - of degree p , 13
- Hopf oscillation ratio, 263
- horoballs, 71
- horofunction, 71
- horofunction boundary, 71
- horospheres, 71
- hyperboloid model, 40
- i -chain, 82
- improper face, 3
- incidence matrix, 154
- index of cyclicity, 2, 295
- infimum, 9, 217
- integral-preserving map, 23
- irreducible
 - linear map, 4
 - matrix, 2
- irreducible element of a lower semi-lattice, 218
- isometry, 30
 - top, 55
- Karlsson–Nussbaum conjecture, 200
- Klein’s model, 38
- Kreĭn–Rutman condition, 143
- Kreĭn–Rutman theorem, 5
- ℓ_1 -norm, 56
- Löwner’s theorem, 16
- lattice, 214
 - generated, 215
 - homomorphism, 215
- length, 82, 91
- limit set, 196
- Lipschitz contraction, 30
- locally attracting fixed point, 68
- locally convex, 124
- locally strongly order-preserving map, 147
- log-exp transform, 18
- Lorentz cone, 3
- lower bound, 217
- lower semi-lattice, 214
 - generated, 214
 - homomorphism, 214
- LYM inequality, 83
- max-plus
 - map, 18
 - semi-ring, 18
- maximal tight subset, 86
- mean
 - (r, σ) , 14
 - arithmetic, 14
 - Gauss arithmetic-geometric, 13
 - geometric, 14
 - harmonic, 14
- median, 213
 - closed, 214
- minihedral cone, 9
- monotone norm, 10
- multiplication operator, 163
- non-expansive, 30
 - top, 55
- nonnegative matrix, 1
- norm
 - ℓ_1 -, 56
 - monotone, 10
 - order-unit, 46
 - polyhedral, 89
 - strictly convex, 79
 - strictly monotone, 79
 - sup-, 25

- normal cone, 10, 45
- normality constant, 10, 45
- Nussbaum conjecture, 86
- ω -limit set, 58
- orbit, 58
- order-preserving map, 6
- order-reversing map, 6
- order-unit norm, 46
- oscillation, 257
- partial order
 - induced by cone, 4
- partly decomposable matrix, 179
- parts of a cone, 7
- pay-off vector, 20
- period
 - of a map, 58
 - of a periodic point, 58
 - of an admissible array, 226
- periodic
 - orbit, 58
 - point, 58
- permanent, 177
- permutation equivalent matrices, 179
- Perron's theorem, 2
- Perron–Frobenius theorem, 2
- Poincaré ball model, 40
- policy, 21
- polyhedral
 - cone, 3
 - norm, 89
- positive
 - diagonal, 161
 - matrix, 1
 - vector, 2
- primitive linear map, 153, 285
- projective diameter, 31, 260
- proper face, 3
- proper metric space, 62
- quotient map, 184
- reachable, 249
- recession map, 135
- reducible matrix, 2
- restricted admissible array, 249
- retraction, 77
- Riccati equation, 17
- row allowable matrix, 281
- same zero pattern, 154
- sand-shift map, 24
 - with rule γ , 230
- scrambling matrix, 172, 281
- semi-derivative, 124
- semi-differentiable map, 124
- semi-lattice, 214
- Shapley operator, 21
- simplicial cone, 9
- slice space, 135
- solid cone, 3
- spectral radius, 2
- spectrum, 2, 284
- Sperner's theorem, 90
- standard positive cone, 3
- Stein's equation, 17
- strategy, 20
- strictly convex norm, 79
- strictly monotone norm, 79
- strongly connected digraph, 131
- strongly order-preserving map, 6
 - locally, 147
- sub-array of an admissible array, 226
- sub-eigenspace, 135
- sub-topical map, 17
- subhomogeneous map, 13
 - additively, 17
 - strictly, 13
- sup-norm, 25, 34
- sup-norm decreasing map, 25
- super-additive map, 140
- super-eigenspace, 134
- support, 14
- supremum, 9, 217
- Thompson's metric, 30
- tight subset, 86
- top
 - function, 35
 - isometry, 55
 - non-expansive, 55
- topical map, 17, 55
- topological vector space, 256
- totally disconnected digraph, 158
- transitive group, 65
- upper bound, 9, 217
- value iteration, 19
- value of a game, 21
- variation norm, 36