

Index

- almost sure convergence, 78
- amino acid configuration, 104
- Berger–Shaw Theorem, 129
- Bergman orthogonal polynomials, 35, 55
- Berman–Boucksom–Nystrom Theorem, 54, 58, 60
- Bernstein–Markov property, 51, 59
- Beta distribution, 131
- Birkhoff Ergodic Theorem, 120
- Bloom–Shiffman Theorem, 53, 59
- Borel–Cantelli Lemma, 83
- Bos Theorem, 47
- Carleman Theorem, 35
- Cartan umbrella, 65
- Cauchy–Schwarz inequality, 12
- Christoffel function, 17, 46
 - empirical, 78
 - population, 77
- Christoffel–Darboux formula, 28
- computationally tractable problem, 145
- counting measure, 29
- determinate moment problem, 34
- determinateness criterion, 18
- double stars, 104
- dragonfly orientation, 103
- Dubois–Efroymson Theorem, 63
- Dubois–Risler Theorem, 63
- elliptic curve, 63
- equilibrium measure, 54, 58
- Erdős–Turán criterion, 33
- Fatou Theorem, 15
- Fekete points, 58
- Fenchel transform, 92
- finite central truncation, 39
- flat extension, 97
- Fock space, 25
- folium, 97
- Fourier series, 40
- Gaussian quadrature, 37
- Gaussian weight, 44
- generalized eigenvalue, 137
- geometric mean, 29
- Green function, 34, 57
- Hamburger Theorem, 16
- Hardy space, 14
- Hessenberg matrix, 39
- Hilbert function, 64, 67
- Hilbert polynomial, 67
- Hilbert space with a reproducing kernel, RKHS, 12
- Hilbert Theorem, 37
- ideal, real, 62
- Jordan curve, 34
- Karush–Kuhn–Tucker condition, 91, 138
- kernel
 - Bergman, 35
 - Christoffel–Darboux, 17, 43
 - cosine, 125
 - Dirichlet, 14, 21
 - Féjer, 20

- kernel (cont.)
 - Hankel, 16
 - hermitian, 9
 - Jackson, 20
 - positive definite, 10
 - positive semidefinite, 10
 - reproducing, 9
 - Szegő, 15
- Kolmogorov Lemma, 10
- Kolmogorov–Krein Theorem, 38
- Koopman operator, 119
- Kroó–Lubinsky Theorem, 52
- Krylov subspace, 128
- Löwner–John ellipsoid, 93
- Laguerre polynomials, 44
- Lebesgue decomposition, 38
- lemniscate, 36
- leverage score, 89, 128
- Lorentz system, 122
- M. Riesz Theorem, 34
- Mahalanobis distance, 87
- Markov–Stieltjes inequalities, 37
- Maté–Nevai–Totik Theorem, 30, 32
- Moment–SOS hierarchy, 123
- Moore–Penrose pseudo-inverse, 66
- occupation measure, 123
- operator
 - hyponormal, 129
 - subnormal, 128
- optimal design
 - D, G, 90
- population measure, 77
- protein structure validation, 104
- regular measure, 33
- regular set, 33, 53
- Segal–Bargmann space, 25
- Siciak extremal function, 53, 56
- singularity indicator, 121
- Slater condition, 91, 139, 144
- strong duality, 92
- strong law of large numbers, 78
- Szegő extremal problem, 30
- Tchakaloff Theorem, 92
- Thomson Theorem, 130
- Totik’s Theorem, 33
- trace formula, 130
- transform
 - Christoffel, 134
 - Darboux, 134
 - Geronimus, 134
 - Szegő, 134
 - Uvarov, 134
- TV screen, 102
- ultra-spherical polynomials, 55
- von Neumann inequality, 74
- Widom Theorem, 29
- Wiener–Winter Theorem, 122
- Wynn polygon, 97
- Xu Theorem, 49
- Zariski closure, 62