

SUBJECT INDEX FOR VOLUME 1

- absolutely continuous, 14, 209
- absolutely monotone, 375
- adaptive inference, 167
- amplitude distribution, 140
- analysis of variance, 408
- approximate normality, 194
- approximation theory, 185
- association, 268, 271
- asymmetric, 93
- asymptotic efficiency, 59, 230, 231
- asymptotic equivalence, 407, 409, 414
- asymptotic expansion, 314
- asymptotic normal, 95, 106, 227
- asymptotic variance, 167
- average noise power, 148
- Bachelier's model, 98
- Banach space, 188
- Bayesian estimation, 110
- Bennett problem, 131
- Bernoullian input, 55
- Bernstein polynomials, 186
- Bessel, 119
- best critical region, 126
- beta, 14, 32, 108, 283, 381
- beta function, 138
- biextremal model, 358
- binomial, 9, 22, 32, 43, 218, 242, 404
- binomial mixture, 109
- binormal, 256
- bivariate Burr, 329
- bivariate normal, 273, 403
- bivariate t, 273
- block effects, 408
- blocking, 407
- Bonferroni's inequality, 360
- Borel field, 414
- Borel-Tanner, 41
- branching process, 237
- breakdowns distribution, 53
- Brownian motion, 190
- Burr, 382
- C-numbers, 19
- C-type distribution, 27
- Calgary Conference, 1
- Calgary Course, 1
- capture-recapture sampling, 33
- carrier set, 214
- Cauchy, 88, 165, 376
- Cauchy's inequality, 351
- censored family, 164
- center of symmetry, 167
- central limit theorem, 121, 228, 413
- central location, 88
- central moments, 44
- Cesaro method, 188
- characteristic function, 88, 115, 197, 204, 299, 325
- characteristic roots, 296, 304, 346, 391
- circular target, 278
- complete block design, 407
- complete sufficient statistic, 23, 123
- complete symmetry, 173, 184
- complex random matrix, 182, 396
- compound Poisson process, 96
- concentration parameter, 113
- concordant, 274
- conditional exponential family, 234
- conditional unbiased test, 126
- confidence cone, 126

- confidence interval, 213, 289  
 confluent hypergeometric function, 62, 135  
 consistent estimator, 239  
 contagion, 31  
 contaminated independence model, 271  
 contingency, tables, 259  
 convexity, 161, 162, 278, 366  
 convolution, 41, 88, 104  
 Cornish-Fisher expansion, 261, 273, 389  
 correlation surface, 250  
 course on distributions, 4  
 covariance matrix, 64, 110, 115, 257, 304, 322, 394  
 coverage probabilities, 224  
 Cramer-Rao lower bound, 231  
 critical region, 124  
 Crow-Bardwell family, 60  
 cumulants, 41  
 curves of equal probability, 251  
 D'Alembert's functional equation, 173, 180  
 density free approach, 339  
 departure from normality, 196  
 dependence, 248, 274  
 dependent gamma rv's, 320  
 diagonal matrix, 181  
 direction vector, 116  
 directional data, 115  
 directions for dissemination, 4  
 directions for training, 4  
 directions in research, 3  
 Dirichlet-gamma, 283  
 discriminant analysis, 267  
 discrete limit distribution, 213  
 discrete rectangular, 33  
 distance, 193  
 distribution (see individual distributions)  
 domain of attraction, 87  
 double binomial, 49  
 double exponential, 162  
 double hypergeometric, 249  
 ecology, 56  
 Edgeworth expansion, 267  
 Edgeworth extension, 381  
 efficiency, 227  
 eigenfunctions, 259  
 eigenvectors, 267  
 elliptical probability, 93  
 empirical Bayes, 104  
 energy, 397  
 epidemiology, 56  
 equilibrium, 35  
 equivariant estimator, 175, 176, 184  
 ergodicity, 190, 229, 299  
 error vector, 411  
 Esseen's bound, 197  
 estimation, 106  
 Euclidean norm, 414  
 Euler method, 188  
 exponential, 110, 168, 267  
 exponential family, 161, 213, 237  
 exponential generating function, 21  
 extreme values, 356  
 F-distribution, 38, 381, 408  
 F-statistic, 411  
 Faa de Bruno, 47  
 factorial moment, 34, 64  
 factorization theorem, 233  
 Farlie-Morgenstern, 247, 262  
 Feller's distribution, 33  
 finite mixture, 103  
 first busy period, 52  
 first order autoregression, 237  
 Fisher ancillary principle, 126  
 Fisher information, 111  
 Fourier coefficient, 190  
 fractiles, 93  
 Frechet distribution, 262  
 Frechet inequality, 360  
 Frechet space, 190  
 functional equation, 208, 363  
 functional-integral equation, 203

- Galton-Watson branching process, 235  
 gamma, 134, 324, 381  
 gamma mixing, 39  
 gamma-type vector, 320  
 Gaussian hypergeometric, 32  
 Gaussian noise, 132  
 generalized Bessel, 132  
 generalized Hermite polynomial, 299  
 generalized hypergeometric 283  
 generalized Laguerre polynomial, 294, 299  
 generalized negative binomial, 42  
 generalized Poisson, 42, 243  
 generalized power series, 84  
 generalized Stirling, 21  
 generating function, 371  
 geometric, 42, 83, 363  
 gradient projection, 97  
 Gumbel, 356  
 Hahn-Banach theorem, 189  
 Hajek's ordering, 166  
 Hankel transform, 293  
 Harr measure, 346  
 Hausdorff, matrix, 188  
 hazard rate, 363  
 heavy tail, 167  
 Hermite, 9  
 Hermite polynomial, 156, 260  
 Holder, 188  
 homogeneity, 248  
 homomorphism, 182  
 Hotelling, 295, 302  
 hyper-Poisson, 33, 77  
 hypergeometric, 31, 59, 135, 287, 313  
 hypergeometric with matrix argument, 281, 284  
 hypothesis testing, 123, 213  
 idempotency, 409  
 identifiability, 103  
 identification procedure, 391  
 incidence matrix, 409  
 incomplete gamma, 143  
 independence hypothesis, 327  
 infinite mixtures, 266  
 information matrix, 71, 87  
 inspection sampling, 33  
 intermediate root, 392  
 interquartile range, 162  
 invariant test, 125  
 inventory decision problem, 35  
 inverse Fourier transform, 326  
 inverse Laplace transform, 291  
 inverse Polya, 33  
 inverse sampling, 38, 110  
 isotropic random walk, 113  
 Jensen's inequality, 363  
 Johnson system, 382  
 K-matrix, 188  
 Katz family, 59  
 kernel, 185, 200  
 Khintchine's theorem, 356  
 Kullback-Leibler mean information, 416  
 kurtosis, 161, 198, 254, 382  
 Lagrange distribution, 41  
 Lagrange expansion, 41  
 Lagrangian gamma, 241  
 Lagrangian Poisson, 241  
 Laplace-Hagg, 33  
 large deviation, 198  
 largest root, 394  
 lattice type, 200  
 law of large numbers, 228  
 left truncated power series, 13  
 level of crowding, 34  
 liability accident model, 38  
 life distribution, 162  
 life model, 168  
 light tail, 167  
 likelihood function, 94, 108, 117, 227  
 limit distributions, 213, 356  
 limit preserving method, 188  
 limit theorems, 203  
 linear correlation, 262  
 linear dependence, 65, 272  
 linear exponential family, 268  
 linear fractional function, 375

- linear functionals, 189
- linear regression, 260
- linearized statistic, 389
- locally Euclidean group, 178
- location family, 105
- location model, 161
- location scale family, 110
- log characteristic function, 91
- log concave, 374
- log-convex, 363
- log-normal, 89, 207
- logarithmic, 20
- logistic, 162, 359, 374
- long tail, 98
- loss function, 173
- lost games, 38
- Mandelbrot's model, 98
- marched filters, 134
- Marcum's distribution, 134
- Markov process, 190, 227
- Marlow's factorial distribution, 33
- Martingale, 228
- matrix-beta distribution, 340
- matrix-variate hypergeometric, 281
- maximal correlation, 259
- maximal invariant, 128
- maximum likelihood, 17, 59, 63, 77, 94, 110, 124, 231, 239, 327
- Maxwell-Boltzmann, 133
- mean deviation, 167
- mean direction, 127
- mean distance estimator, 96
- mean ergodic theorem, 190
- mean squared error, 97
- mean vector, 115
- Meijer G-functions, 288
- meromorphic, 375
- meterology, 56
- metric space, 193
- minimal sufficient statistics, 93, 123, 233
- minimax unbiased estimators, 110
- minimum chi-square estimator, 63, 110
- minimum distance estimator, 95
- minimum variance unbiased estimation, 9, 10, 13, 19
- mixed distribution, 106
- mixed model, 359
- mixed negative-binomial, 39
- mixed Poisson, 39
- mixing distribution, 104, 200
- mixing models, 31
- mixing processes, 38
- mixing proportions, 105
- mixture representation, 131
- mixtures, 98, 105, 110, 195, 211
- modified Bessel function, 114, 132
- modulo sequence, 83
- moment estimators, 96, 110, 384
- moment problem, 185, 203
- moment sequence, 188
- monotone likelihood ratio, 128, 166
- monotone likelihood ratio family, 213
- monotone sequence, 188
- Monte Carlo techniques, 266
- Moore-Penrose inverse, 342
- multi-sample problems, 113
- multinomial, 16, 94, 108
- multiparameter Stirling, 19
- multiple correlation, 16, 250
- multiple normal surface, 250
- multiple time series, 391
- multiple truncation, 19
- multiple Poisson, 16
- multivariate beta, 281, 337
- multivariate Burr, 329, 378
- multivariate Dirichlet, 282
- multivariate exponential, 268
- multivariate extreme value, 355, 359, 378
- multivariate folded normal, 286
- multivariate gamma, 319
- multivariate hazard rates, 267
- multivariate hypergeometric, 268
- multivariate logistic, 378
- multivariate models, 266

- multivariate normal, 272, 283, 319
- multivariate Pearson type, 257
- multivariate power series, 17
- multivariate stable laws, 91
- multivariate  $t$ , 286
- Nakagami amplitude distribution, 131
- narrowband Gaussian process, 141
- near-normality, 382
- negative binomial, 9, 38, 43, 153, 186, 207, 242
- negative dependence, 278
- negative multinomial, 16
- non-central beta, 295
- non-central chi, 133, 143
- non-central chi-square, 15, 141, 303
- non-central moments, 47, 387
- non-central Wishart, 346
- non-Gaussian, 137
- non-symmetric, 193
- non-uniform phase, 131
- normal, 88, 165, 223, 248, 320, 389, 402
- normal marginals, 262
- normal probability paper, 90
- normal random vector, 321
- normal scores, 165
- normalized spacing, 169
- one-sided confidence limits, 213, 220
- one-sided Gaussian, 133
- optimality properties of tests, 115
- order statistics, 94
- ordered roots, 397
- ordering, 161
- orthogonality, 259, 296, 307, 313, 346, 353
- parabolic cylinder function, 135
- parallel system, 364
- Pareto, 170
- partial moment curves, 251
- partial ordering, 274
- partitions, 309
- Pascal, 186
- pattern recognition, 391
- peakedness, 279
- Pearson system, 195, 257, 381
- permutation distribution, 413
- permutation matrix, 412
- perturbation approximation, 267
- phase distributions, 140
- phi-square-boundedness, 259
- Pitman-Koopman, 10
- planar Wishart distribution, 338
- Poisson, 9, 20, 53, 62, 134, 186, 218, 242
- Poisson input, 53
- Poisson kernel, 185
- Polya, 33
- positive definite matrix, 292
- positive dependence, 271
- positive orthant dependence, 275
- positive quadrant dependence, 272
- power series, 9, 17, 236
- probability contours, 258
- proceedings, 3
- products, 401
- principal components, 391
- pulse, 147
- quadrant dependence, 274
- quadratic form, 131, 345
- queueing, 41, 245
- radar, 131
- radio communication, 131
- Rainville, 156
- random allocation, 408
- random counts, 56
- random matrix, 281, 300, 391
- random sine wave, 136
- random walk, 363
- randomization, 407
- Rao-Blackwell theorem, 124
- ratio property, 291
- ratios and products, 401
- Rayleigh, 124, 133
- recurrence relation, 13
- regression function, 254, 272
- residue, 144

- Riesz theorem, 189  
 right tail, 163  
 risk function, 184  
 robustness, 161  
 sample fractiles, 94  
 sample kurtosis, 168  
 sample mean direction, 113  
 sample moments, 66, 246  
 scaling matrix, 257  
 Schnirelmann, 11  
 score function, 164  
 security prices, 98  
 series and parallel systems, 363  
 series representation, 345  
 sigmoid shape, 90  
 signal amplitude, 148  
 signal-pulse-noise, 148  
 similar test, 129  
 simultaneous tests, 398  
 single server queue, 52  
 skew surface, 249  
 skew correlation surface, 251  
 skew-symmetric matrix, 313  
 skewness, 193, 259, 382  
 spacings, 391  
 sphericity, 395  
 square-law detector, 148  
 stability relation, 357  
 stable law, 87  
 star-shaped function, 161  
 stationary process, 204, 229  
 stationary noise, 131  
 signal analysis, 391  
 STER, 31  
 stochastic difference, 275  
 stochastically larger, 275  
 strongly consistent, 96, 231  
 student statistic, 109, 277, 381  
 studentization, 299  
 study institute purpose, 2  
 sufficient statistic, 24, 233  
 sum symmetric power series, 9  
 summability, 185  
 superadditive function, 169  
 survival function, 265  
 Swerling, 134  
 symmetric convex set, 277  
 symmetric distribution, 161  
 symmetric function, 109  
 symmetric matrix, 302  
 symmetric stable laws, 94, 195  
 symmetric statistic, 109  
 symmetrized distribution, 295  
 symmetry parameter, 88  
 T matrix, 188  
 tail probability, 9, 93, 166  
 target detection, 391  
 Taylor expansion, 299, 405  
 testing goodness of fit, 60  
 tests of uniformity, 124  
 time-homogeneous Markov process, 233  
 trace, 296  
 transformation, 381  
 trimmed means, 167  
 truncated geometric, 13, 85  
 truncated normal, 404  
 truncated power series, 9  
 unbiased estimator, 11, 20  
 unbounded carrier set, 221  
 uncorrelated normal, 402  
 uniform, 104, 114, 162, 404  
 uniform metric, 193  
 uniformly most power test, 125  
 unit normal law, 193  
 unit random vector, 113  
 unordered roots, 397  
 urn model, 31, 38  
 variance stabilizing transformation, 123  
 vector measures, 190  
 von Mises-Fisher, 113  
 waiting-line models, 246  
 Waring, 33  
 weak convergence, 213  
 weak relative compactness, 191  
 Weibull, 206, 208  
 Weierstrass theorem, 86  
 weighted distributions, 31  
 weighted sums, 299  
 Whittaker function, 38  
 Wilcoxon scores, 165  
 Wilk's likelihood ratio, 295  
 Wishart matrix, 300, 391  
 zonal polynomials, 281, 306, 350, 396