

58E15	Application to extremal problems in several variables; Yang-Mills functionals [See also 81T13], etc.
58E17	Pareto optimality, etc., applications to economics [See also 90C29]
58E20	Harmonic maps [See also 53C43], etc.
58E25	Applications to control theory [See also 49–XX , 93–XX]
58E30	Variational principles
58E35	Variational inequalities (global problems)
58E40	Group actions
58E50	Applications
58E99	None of the above, but in this section
58Hxx	Pseudogroups, differentiable groupoids and general structures on manifolds
58H05	Pseudogroups and differentiable groupoids [See also 22A22 , 22E65]
58H10	Cohomology of classifying spaces for pseudogroup structures (Spencer, Gelfand-Fuks, etc.) [See also 57R32]
58H15	Deformations of structures [See also 32Gxx , 58J10]
58H99	None of the above, but in this section
58Jxx	Partial differential equations on manifolds; differential operators [See also 32Wxx , 35–XX , 53Cxx]
58J05	Elliptic equations on manifolds, general theory [See also 35–XX]
58J10	Differential complexes [See also 35Nxx]; elliptic complexes
58J15	Relations with hyperfunctions
58J20	Index theory and related fixed point theorems [See also 19K56 , 46L80]
58J22	Exotic index theories [See also 19K56 , 46L05 , 46L10 , 46L80 , 46M20]
58J26	Elliptic genera
58J28	Eta-invariants, Chern-Simons invariants
58J30	Spectral flows
58J32	Boundary value problems on manifolds
58J35	Heat and other parabolic equation methods
58J37	Perturbations; asymptotics
58J40	Pseudodifferential and Fourier integral operators on manifolds [See also 35Sxx]
58J42	Noncommutative global analysis, noncommutative residues
58J45	Hyperbolic equations [See also 35Lxx]
58J47	Propagation of singularities; initial value problems
58J50	Spectral problems; spectral geometry; scattering theory [See also 35Pxx]
58J51	Relations between spectral theory and ergodic theory, e.g. quantum unique ergodicity
58J52	Determinants and determinant bundles, analytic torsion
58J53	Isospectrality
58J55	Bifurcation [See also 35B32]
58J60	Relations with special manifold structures (Riemannian, Finsler, etc.)
58J65	Diffusion processes and stochastic analysis on manifolds [See also 35R60 , 60H10 , 60J60]
58J70	Invariance and symmetry properties [See also 35A30]
58J72	Correspondences and other transformation methods (e.g. Lie-Bäcklund) [See also 35A22]
58J90	Applications
58J99	None of the above, but in this section
58Kxx	Theory of singularities and catastrophe theory [See also 32Sxx , 37–XX]
58K05	Critical points of functions and mappings
58K10	Monodromy
58K15	Topological properties of mappings
58K20	Algebraic and analytic properties of mappings
58K25	Stability
58K30	Global theory
58K35	Catastrophe theory
58K40	Classification; finite determinacy of map germs
58K45	Singularities of vector fields, topological aspects
58K50	Normal forms
58K55	Asymptotic behavior
58K60	Deformation of singularities
58K65	Topological invariants
58K70	Symmetries, equivariance
58K99	None of the above, but in this section
58Zxx	Applications to physics
58Z05	Applications to physics
58Z99	None of the above, but in this section
60–XX	PROBABILITY THEORY AND STOCHASTIC PROCESSES {For additional applications, see 11Kxx , 62–XX , 90–XX , 91–XX , 92–XX , 93–XX , 94–XX }
60–00	General reference works (handbooks, dictionaries, bibliographies, etc.)
60–01	Instructional exposition (textbooks, tutorial papers, etc.)
60–02	Research exposition (monographs, survey articles)
60–03	Historical (must also be assigned at least one classification number from Section 01)

60–04	Explicit machine computation and programs (not the theory of computation or programming)
60–06	Proceedings, conferences, collections, etc.
60–08	Computational methods (not classified at a more specific level) [See also 65C50]
60Axx	Foundations of probability theory
60A05	Axioms; other general questions
60A10	Probabilistic measure theory {For ergodic theory, see 28Dxx and 60Fxx }
60A86	Fuzzy probability
60A99	None of the above, but in this section
60Bxx	Probability theory on algebraic and topological structures
60B05	Probability measures on topological spaces
60B10	Convergence of probability measures
60B11	Probability theory on linear topological spaces [See also 28C20]
60B12	Limit theorems for vector-valued random variables (infinite-dimensional case)
60B15	Probability measures on groups or semigroups, Fourier transforms, factorization
60B20	Random matrices (probabilistic aspects; for algebraic aspects see 15B52)
60B99	None of the above, but in this section
60Cxx	Combinatorial probability
60C05	Combinatorial probability
60C99	None of the above, but in this section
60Dxx	Geometric probability and stochastic geometry [See also 52A22 , 53C65]
60D05	Geometric probability and stochastic geometry [See also 52A22 , 53C65]
60D99	None of the above, but in this section
60Exx	Distribution theory [See also 62Exx , 62Hxx]
60E05	Distributions: general theory
60E07	Infinitely divisible distributions; stable distributions
60E10	Characteristic functions; other transforms
60E15	Inequalities; stochastic orderings
60E99	None of the above, but in this section
60Fxx	Limit theorems [See also 28Dxx , 60B12]
60F05	Central limit and other weak theorems
60F10	Large deviations
60F15	Strong theorems
60F17	Functional limit theorems; invariance principles
60F20	Zero-one laws
60F25	L^p -limit theorems
60F99	None of the above, but in this section
60Gxx	Stochastic processes
60G05	Foundations of stochastic processes
60G07	General theory of processes
60G09	Exchangeability
60G10	Stationary processes
60G12	General second-order processes
60G15	Gaussian processes
60G17	Sample path properties
60G18	Self-similar processes
60G20	Generalized stochastic processes
60G22	Fractional processes, including fractional Brownian motion
60G25	Prediction theory [See also 62M20]
60G30	Continuity and singularity of induced measures
60G35	Signal detection and filtering [See also 62M20 , 93E10 , 93E11 , 94Axx]
60G40	Stopping times; optimal stopping problems; gambling theory [See also 62L15 , 91A60]
60G42	Martingales with discrete parameter
60G44	Martingales with continuous parameter
60G46	Martingales and classical analysis
60G48	Generalizations of martingales
60G50	Sums of independent random variables; random walks
60G51	Processes with independent increments; Lévy processes
60G52	Stable processes
60G55	Point processes
60G57	Random measures
60G60	Random fields
60G70	Extreme value theory; extremal processes
60G99	None of the above, but in this section
60Hxx	Stochastic analysis [See also 58J65]
60H05	Stochastic integrals
60H07	Stochastic calculus of variations and the Malliavin calculus
60H10	Stochastic ordinary differential equations [See also 34F05]
60H15	Stochastic partial differential equations [See also 35R60]
60H20	Stochastic integral equations
60H25	Random operators and equations [See also 47B80]
60H30	Applications of stochastic analysis (to PDE, etc.)

60H35	Computational methods for stochastic equations [See also 65C30]	62Dxx	Sampling theory, sample surveys
60H40	White noise theory	62D05	Sampling theory, sample surveys
60H99	None of the above, but in this section	62D99	None of the above, but in this section
60Jxx	Markov processes	62Exx	Distribution theory [See also 60Exx]
60J05	Discrete-time Markov processes on general state spaces	62E10	Characterization and structure theory
60J10	Markov chains (discrete-time Markov processes on discrete state spaces)	62E15	Exact distribution theory
60J20	Applications of Markov chains and discrete-time Markov processes on general state spaces (social mobility, learning theory, industrial processes, etc.) [See also 90B30, 91D10, 91D35, 91E40]	62E17	Approximations to distributions (nonasymptotic)
60J22	Computational methods in Markov chains [See also 65C40]	62E20	Asymptotic distribution theory
60J25	Continuous-time Markov processes on general state spaces	62E86	Fuzziness in connection with the topics on distributions in this section
60J27	Continuous-time Markov processes on discrete state spaces	62E99	None of the above, but in this section
60J28	Applications of continuous-time Markov processes on discrete state spaces	62Fxx	Parametric inference
60J35	Transition functions, generators and resolvents [See also 47D03, 47D07]	62F03	Hypothesis testing
60J40	Right processes	62F05	Asymptotic properties of tests
60J45	Probabilistic potential theory [See also 31Cxx, 31D05]	62F07	Ranking and selection
60J50	Boundary theory	62F10	Point estimation
60J55	Local time and additive functionals	62F12	Asymptotic properties of estimators
60J57	Multiplicative functionals	62F15	Bayesian inference
60J60	Diffusion processes [See also 58J65]	62F25	Tolerance and confidence regions
60J65	Brownian motion [See also 58J65]	62F30	Inference under constraints
60J67	Stochastic (Schramm-)Loewner evolution (SLE)	62F35	Robustness and adaptive procedures
60J68	Superprocesses	62F40	Bootstrap, jackknife and other resampling methods
60J70	Applications of Brownian motions and diffusion theory (population genetics, absorption problems, etc.) [See also 92Dxx]	62F86	Parametric inference and fuzziness
60J75	Jump processes	62F99	None of the above, but in this section
60J80	Branching processes (Galton-Watson, birth-and-death, etc.)	62Gxx	Nonparametric inference
60J85	Applications of branching processes [See also 92Dxx]	62G05	Estimation
60J99	None of the above, but in this section	62G07	Density estimation
60Kxx	Special processes	62G08	Nonparametric regression
60K05	Renewal theory	62G09	Resampling methods
60K10	Applications (reliability, demand theory, etc.)	62G10	Hypothesis testing
60K15	Markov renewal processes, semi-Markov processes	62G15	Tolerance and confidence regions
60K20	Applications of Markov renewal processes (reliability, queueing networks, etc.) [See also 90Bxx]	62G20	Asymptotic properties
60K25	Queueing theory [See also 68M20, 90B22]	62G30	Order statistics; empirical distribution functions
60K30	Applications (congestion, allocation, storage, traffic, etc.) [See also 90Bxx]	62G32	Statistics of extreme values; tail inference
60K35	Interacting random processes; statistical mechanics type models; percolation theory [See also 82B43, 82C43]	62G35	Robustness
60K37	Processes in random environments	62G86	Nonparametric inference and fuzziness
60K40	Other physical applications of random processes	62G99	None of the above, but in this section
60K99	None of the above, but in this section	62Hxx	Multivariate analysis [See also 60Exx]
62-XX	STATISTICS	62H05	Characterization and structure theory
62-00	General reference works (handbooks, dictionaries, bibliographies, etc.)	62H10	Distribution of statistics
62-01	Instructional exposition (textbooks, tutorial papers, etc.)	62H11	Directional data; spatial statistics
62-02	Research exposition (monographs, survey articles)	62H12	Estimation
62-03	Historical (must also be assigned at least one classification number from Section 01)	62H15	Hypothesis testing
62-04	Explicit machine computation and programs (not the theory of computation or programming)	62H17	Contingency tables
62-06	Proceedings, conferences, collections, etc.	62H20	Measures of association (correlation, canonical correlation, etc.)
62-07	Data analysis	62H25	Factor analysis and principal components; correspondence analysis
62-09	Graphical methods	62H30	Classification and discrimination; cluster analysis [See also 68T10, 91C20]
62Axx	Foundational and philosophical topics	62H35	Image analysis
62A01	Foundations and philosophical topics	62H86	Multivariate analysis and fuzziness
62A86	Fuzzy analysis in statistics	62H99	None of the above, but in this section
62A99	None of the above, but in this section	62Jxx	Linear inference, regression
62Bxx	Sufficiency and information	62J02	General nonlinear regression
62B05	Sufficient statistics and fields	62J05	Linear regression
62B10	Information-theoretic topics [See also 94A17]	62J07	Ridge regression; shrinkage estimators
62B15	Theory of statistical experiments	62J10	Analysis of variance and covariance
62B86	Fuzziness, sufficiency, and information	62J12	Generalized linear models
62B99	None of the above, but in this section	62J15	Paired and multiple comparisons
62Cxx	Decision theory [See also 90B50, 91B06; for game theory, see 91A35]	62J20	Diagnostics
62C05	General considerations	62J86	Fuzziness, and linear inference and regression
62C07	Complete class results	62J99	None of the above, but in this section
62C10	Bayesian problems; characterization of Bayes procedures	62Kxx	Design of experiments [See also 05Bxx]
62C12	Empirical decision procedures; empirical Bayes procedures	62K05	Optimal designs
62C15	Admissibility	62K10	Block designs
62C20	Minimax procedures	62K15	Factorial designs
62C25	Compound decision problems	62K20	Response surface designs
62C86	Decision theory and fuzziness	62K25	Robust parameter designs
62C99	None of the above, but in this section	62K86	Fuzziness and design of experiments
		62K99	None of the above, but in this section
		62Lxx	Sequential methods
		62L05	Sequential design
		62L10	Sequential analysis
		62L12	Sequential estimation
		62L15	Optimal stopping [See also 60G40, 91A60]
		62L20	Stochastic approximation
		62L86	Fuzziness and sequential methods
		62L99	None of the above, but in this section

62Mxx	Inference from stochastic processes
62M02	Markov processes: hypothesis testing
62M05	Markov processes: estimation
62M07	Non-Markovian processes: hypothesis testing
62M09	Non-Markovian processes: estimation
62M10	Time series, auto-correlation, regression, etc. [See also 91B84]
62M15	Spectral analysis
62M20	Prediction [See also 60G25]; filtering [See also 60G35 , 93E10 , 93E11]
62M30	Spatial processes
62M40	Random fields; image analysis
62M45	Neural nets and related approaches
62M86	Inference from stochastic processes and fuzziness
62M99	None of the above, but in this section
62Nxx	Survival analysis and censored data
62N01	Censored data models
62N02	Estimation
62N03	Testing
62N05	Reliability and life testing [See also 90B25]
62N86	Fuzziness, and survival analysis and censored data
62N99	None of the above, but in this section
62Pxx	Applications [See also 90–XX , 91–XX , 92–XX]
62P05	Applications to actuarial sciences and financial mathematics
62P10	Applications to biology and medical sciences
62P12	Applications to environmental and related topics
62P15	Applications to psychology
62P20	Applications to economics [See also 91Bxx]
62P25	Applications to social sciences
62P30	Applications in engineering and industry
62P35	Applications to physics
62P99	None of the above, but in this section
62Qxx	Statistical tables
62Q05	Statistical tables
62Q99	None of the above, but in this section
65–XX	NUMERICAL ANALYSIS
65–00	General reference works (handbooks, dictionaries, bibliographies, etc.)
65–01	Instructional exposition (textbooks, tutorial papers, etc.)
65–02	Research exposition (monographs, survey articles)
65–03	Historical (must also be assigned at least one classification number from Section 01)
65–04	Explicit machine computation and programs (not the theory of computation or programming)
65–05	Experimental papers
65–06	Proceedings, conferences, collections, etc.
65Axx	Tables
65A05	Tables
65A99	None of the above, but in this section
65Bxx	Acceleration of convergence
65B05	Extrapolation to the limit, deferred corrections
65B10	Summation of series
65B15	Euler-Maclaurin formula
65B99	None of the above, but in this section
65Cxx	Probabilistic methods, simulation and stochastic differential equations {For theoretical aspects, see 68U20 and 60H35 }
65C05	Monte Carlo methods
65C10	Random number generation
65C20	Models, numerical methods [See also 68U20]
65C30	Stochastic differential and integral equations
65C35	Stochastic particle methods [See also 82C80]
65C40	Computational Markov chains
65C50	Other computational problems in probability
65C60	Computational problems in statistics
65C99	None of the above, but in this section
65Dxx	Numerical approximation and computational geometry (primarily algorithms) {For theory, see 41–XX and 68Uxx }
65D05	Interpolation
65D07	Splines
65D10	Smoothing, curve fitting
65D15	Algorithms for functional approximation
65D17	Computer aided design (modeling of curves and surfaces) [See also 68U07]
65D18	Computer graphics, image analysis, and computational geometry [See also 51N05 , 68U05]
65D19	Computational issues in computer and robotic vision
65D20	Computation of special functions, construction of tables [See also 33F05]
65D25	Numerical differentiation
65D30	Numerical integration
65D32	Quadrature and cubature formulas
65D99	None of the above, but in this section

65Exx	Numerical methods in complex analysis (potential theory, etc.) {For numerical methods in conformal mapping, see also 30C30 }
65E05	Numerical methods in complex analysis (potential theory, etc.) {For numerical methods in conformal mapping, see also 30C30 }
65E99	None of the above, but in this section
65Fxx	Numerical linear algebra
65F05	Direct methods for linear systems and matrix inversion
65F08	Preconditioners for iterative methods
65F10	Iterative methods for linear systems [See also 65N22]
65F15	Eigenvalues, eigenvectors
65F18	Inverse eigenvalue problems
65F20	Overdetermined systems, pseudoinverses
65F22	Ill-posedness, regularization
65F25	Orthogonalization
65F30	Other matrix algorithms
65F35	Matrix norms, conditioning, scaling [See also 15A12 , 15A60]
65F40	Determinants
65F50	Sparse matrices
65F60	Matrix exponential and similar matrix functions
65F99	None of the above, but in this section
65Gxx	Error analysis and interval analysis
65G20	Algorithms with automatic result verification
65G30	Interval and finite arithmetic
65G40	General methods in interval analysis
65G50	Roundoff error
65G99	None of the above, but in this section
65Hxx	Nonlinear algebraic or transcendental equations
65H04	Roots of polynomial equations
65H05	Single equations
65H10	Systems of equations
65H17	Eigenvalues, eigenvectors [See also 47Hxx , 47Jxx , 58C40 , 58E07 , 90C30]
65H20	Global methods, including homotopy approaches [See also 58C30 , 90C30]
65H99	None of the above, but in this section
65Jxx	Numerical analysis in abstract spaces
65J05	General theory
65J08	Abstract evolution equations
65J10	Equations with linear operators (do not use 65Fxx)
65J15	Equations with nonlinear operators (do not use 65Hxx)
65J20	Improperly posed problems; regularization
65J22	Inverse problems
65J99	None of the above, but in this section
65Kxx	Mathematical programming, optimization and variational techniques
65K05	Mathematical programming methods [See also 90Cxx]
65K10	Optimization and variational techniques [See also 49Mxx , 93B40]
65K15	Numerical methods for variational inequalities and related problems
65K99	None of the above, but in this section
65Lxx	Ordinary differential equations
65L03	Functional-differential equations
65L04	Stiff equations
65L05	Initial value problems
65L06	Multistep, Runge-Kutta and extrapolation methods
65L07	Numerical investigation of stability of solutions
65L08	Improperly posed problems
65L09	Inverse problems
65L10	Boundary value problems
65L11	Singularly perturbed problems
65L12	Finite difference methods
65L15	Eigenvalue problems
65L20	Stability and convergence of numerical methods
65L50	Mesh generation and refinement
65L60	Finite elements, Rayleigh-Ritz, Galerkin and collocation methods
65L70	Error bounds
65L80	Methods for differential-algebraic equations
65L99	None of the above, but in this section
65Mxx	Partial differential equations, initial value and time-dependent initial-boundary value problems
65M06	Finite difference methods
65M08	Finite volume methods
65M12	Stability and convergence of numerical methods
65M15	Error bounds
65M20	Method of lines
65M22	Solution of discretized equations [See also 65Fxx , 65Hxx]
65M25	Method of characteristics
65M30	Improperly posed problems
65M32	Inverse problems
65M38	Boundary element methods
65M50	Mesh generation and refinement
65M55	Multigrid methods; domain decomposition