

Topical Table of Contents

Agent Based Modeling and Simulation, Section Editor: Filippo Castiglione

Agent Based Computational Economics
Agent Based Modeling and Artificial Life
Agent Based Modeling and Computer Languages
Agent Based Modeling and Simulation, Introduction to
Agent Based Modeling, Large Scale Simulations
Agent Based Modeling, Mathematical Formalism for
Agent-Based Modeling and Simulation
Cellular Automaton Modeling of Tumor Invasion
Computer Graphics and Games, Agent Based Modeling in
Embodied and Situated Agents, Adaptive Behavior in
Interaction Based Computing in Physics
Logic and Geometry of Agents in Agent-Based Modeling
Social Phenomena Simulation
Swarm Intelligence

Autonomous Robotics, Complexity and Nonlinearity in, Section Editor: Warren Dixon

Adaptive Visual Servo Control
Cognitive Robotics
Complexity and Non-Linearity in Autonomous Robotics, Introduction to
Continuum Robots
Distributed Controls of Multiple Robotic Systems, An Optimization Approach
Distributed Robotic Teams: A Framework for Simulated and Real-World Modeling
Foraging Robots
Human Robot Interaction
Image Based State Estimation
Modular Self-Reconfigurable Robots
Motion Prediction for Continued Autonomy
Multiple Mobile Robot Teams, Path Planning and Motion Coordination in
Neuro-fuzzy Control of Autonomous Robotics
Self-replicating Robotic Systems
Software Architectures for Autonomy

Cellular Automata, Mathematical Basis of, Section Editor: Andrew Adamatzky

Additive Cellular Automata
Algorithmic Complexity and Cellular Automata
Cellular Automata and Groups
Cellular Automata and Language Theory
Cellular Automata as Models of Parallel Computation
Cellular Automata in Hyperbolic Spaces

Cellular Automata Modeling of Physical Systems
 Cellular Automata on Triangular, Pentagonal and Hexagonal Tessellations
 Cellular Automata with Memory
 Cellular Automata, Classification of
 Cellular Automata, Emergent Phenomena in
 Cellular Automata, Universality of
 Chaotic Behavior of Cellular Automata
 Dynamics of Cellular Automata in Non-compact Spaces
 Ergodic Theory of Cellular Automata
 Evolving Cellular Automata
 Firing Squad Synchronization Problem in Cellular Automata
 Gliders in Cellular Automata
 Growth Phenomena in Cellular Automata
 Identification of Cellular Automata
 Mathematical Basis of Cellular Automata, Introduction to
 Phase Transitions in Cellular Automata
 Quantum Cellular Automata
 Reversible Cellular Automata
 Self-organised Criticality and Cellular Automata
 Self-Replication and Cellular Automata
 Structurally Dynamic Cellular Automata
 Tiling Problem and Undecidability in Cellular Automata
 Topological Dynamics of Cellular Automata

Chaos and Complexity in Astrophysics, Section Editor: Steve N. Shore

Acceleration Mechanisms
 Astronomical Time Series, Complexity in
 Astrophysics, Chaos and Complexity in
 Astrophysics: Dynamical Systems
 Chaos and Complexity in Astrophysics, Introduction to
 Cosmic Gravitational Background, Stochastic
 Cosmic Strings
 Exobiology (theoretical), Complexity in
 Exobiology and Complexity
 Orbital Dynamics, Chaos in
 Self-Organization in Magnetohydrodynamic Turbulence
 Space Plasmas, Dynamical Complexity in
 Stellar Dynamics, N-body Methods for
 Topological Magnetohydrodynamics and Astrophysics

Climate Modeling, Global Warming and Weather Prediction, Section Editor: Hartmut Grassl

Abrupt Climate Change Modeling
 Climate Change and Agriculture
 Climate Change and Human Health
 Climate Change, Economic Costs of
 Climate Modeling, Global Warming and Weather Prediction, Introduction to
 Cryosphere Models
 Regional Climate Models: Linking Global Climate Change to Local Impacts
 Single Column Modeling of Atmospheric Boundary Layers
 and the Complex Interactions with the Land Surface

Complex Networks and Graph Theory, Section Editor: Geoffrey Canright

Community Structure in Graphs
Complex Gene Regulatory Networks – From Structure to Biological Observables: Cell Fate Determination
Complex Networks and Graph Theory
Complex Networks, Visualization of
Food Webs
Growth Models for Networks
Human Sexual Networks
Internet Topology
Link Analysis and Web Search
Motifs in Graphs
Non-negative Matrices and Digraphs
Random Graphs, A Whirlwind Tour of
Synchronization Phenomena on Networks
World Wide Web, Graph Structure

Complexity in Computational Chemistry, Section Editor: Danail Bonchev

Biochemistry, Chaotic Dynamics, Noise, and Fractal Space in
Biological Complexity and Biochemical Information
Biological Development and Evolution, Complexity and Self-Organization in
Cellular Automata Modeling of Complex Biochemical Systems
Composites, Multifunctional
Computational Chemistry, Introduction to Complexity in
Computer-Aided Design of the Reaction Site in Heterogeneous Catalysis
DNA-templated Self-assembly of Protein Arrays and Highly Conductive Nanowires
Drug Design with Artificial Intelligence Methods
Drug Design with Artificial Neural Networks
Drug Design with Machine Learning
Drug Design, Molecular Descriptors in
Information Theoretic Complexity Measures
Molecular Evolution, Networks in
Nanoscale Atomic Clusters, Complexity of
Polymers, Nonlinearity in
QSAR Modeling and QSAR Based Virtual Screening, Complexity and Challenges of Modern
Quantum Similarity and Quantum Quantitative Structure-Properties Relationships (QSPR)
Self-assembled Materials
Topological Complexity of Molecules

Complexity in Earthquakes, Tsunamis, and Volcanoes, and Forecast, Section Editor: William H. K. Lee

Brittle Tectonics: A Non-linear Dynamical System
Complexity in Earthquakes, Tsunamis, and Volcanoes, and Forecast, Introduction to
Crustal Deformation During the Seismic Cycle, Interpreting Geodetic Observations of
Earthquake Clusters over Multi-dimensional Space, Visualization of
Earthquake Damage: Detection and Early Warning in Man-Made Structures
Earthquake Early Warning System in Southern Italy
Earthquake Engineering, Non-linear Problems in
Earthquake Forecasting and Verification
Earthquake Location, Direct, Global-Search Methods
Earthquake Magnitude
Earthquake Monitoring and Early Warning Systems

Earthquake Networks, Complex
Earthquake Nucleation Process
Earthquake Occurrence and Mechanisms, Stochastic Models for
Earthquake Scaling Laws
Earthquake Source Parameters, Rapid Estimates for Tsunami Warning
Earthquake Source: Asymmetry and Rotation Effects
Earthquakes, Dynamic Triggering of
Earthquakes, Electromagnetic Signals of
Earth's Crust and Upper Mantle, Dynamics of Solid-Liquid Systems in
Geo-Complexity and Earthquake Prediction
GPS: Applications in Crustal Deformation Monitoring
Ground Motion: Complexity and Scaling in the Near Field of Earthquake Ruptures
Infrasound from Earthquakes, Tsunamis and Volcanoes
Pressure Impulses Generated by Bubbles Interacting with Ambient Perturbation
Seismic Wave Propagation in Media with Complex Geometries, Simulation of
Seismic Waves in Heterogeneous Earth, Scattering of
Seismicity, Critical States of: From Models to Practical Seismic Hazard Estimates Space
Seismicity, Statistical Physics Approaches to
Slug Flow: Modeling in a Conduit and Associated Elastic Radiation
Submarine Landslides and Slow Earthquakes: Monitoring Motion with GPS and Seafloor Geodesy
Tomography, Seismic
Tsunami Earthquakes
Tsunami Forecasting and Warning
Tsunami Inundation, Modeling of
Tsunamis, Inverse Problem of
Volcanic Eruptions, Explosive: Experimental Insights
Volcanic Eruptions: Cyclicity During Lava Dome Growth
Volcanic Eruptions: Stochastic Models of Occurrence Patterns
Volcanic Hazards and Early Warning
Volcano Seismic Signals, Source Quantification of
Volcanoes, Non-linear Processes in
Wedge Mechanics: Relation With Subduction Zone Earthquakes and Tsunamis

Computational and Theoretical Nanoscience, Section Editor: Yong Suk Joe

Carbon Nanotubes, Thermo-mechanical and Transport Properties of
Charge Based Solid-State Flying Qubits
Computational and Theoretical Nanoscience, Introduction to
Field Computation in Natural and Artificial Intelligence
Geometric Phase and Related Phenomena in Quantum Nanosystems
Multimillion Atom Simulations with Nemo3D
Nanoscale Processes, Modeling Coupled and Transport Phenomena in Nanotechnology
Quantum Dot Spin Transistors, Self-consistent Simulation of
Quantum Dots: Fano Resonances in Aharonov-Bohm Ring
Quantum Impurity Physics in Coupled Quantum Dots
Quantum Phenomena in Semiconductor Nanostructures
Quantum Simulations of Ballistic Nanowire Field Effect Transistors
Resonances in Electronic Transport Through Quantum Wires and Rings
Semiclassical Spin Transport in Spin-Orbit Coupled Systems
Spin Dependent Exchange and Correlation in Two-Dimensional Electron Layers
Spin Dynamics in Disordered Solids
Spin-polarized Quantum Transport in Mesoscopic Conductors: Computational Concepts and Physical Phenomena

Tight-Binding Molecular Dynamics for Carbon and Applications to Nanostructure Formation
Tunneling Through Quantum Dots with Discrete Symmetries
Viral Protein Nano-Actuators, Computational Studies of Bio-nanomachines

Data Mining and Knowledge Discovery, Section Editor: Peter Kokol

Data and Dimensionality Reduction in Data Analysis and System Modeling
Data-Mining and Knowledge Discovery, Introduction to
Data-Mining and Knowledge Discovery, Neural Networks in
Data-Mining and Knowledge Discovery: Case Based Reasoning, Nearest Neighbor and Rough Sets
Decision Trees
Discovery Systems
Genetic and Evolutionary Algorithms and Programming: General Introduction and Application to Game Playing
Knowledge Discovery: Clustering
Machine Learning, Ensemble Methods in
Manipulating Data and Dimension Reduction Methods: Feature Selection

Ecological Complexity, Section Editor: Bai-Lian Li

Ecological Complexity
Ecological Topology and Networks
Entropy Maximization and Species Abundance
Human-Environment Interactions, Complex Systems Approaches for Dynamic Sustainable Development

EiC Selections, Section Editor: Robert A. Meyers

Catastrophe Theory
Coordination Dynamics
Infinite Dimensional Controllability
Philosophy of Science, Mathematical Models in
Self-organizing Systems

Ergodic Theory, Section Editor: Bryna Kra

Chaos and Ergodic Theory
Entropy in Ergodic Theory
Ergodic Theorems
Ergodic Theory on Homogeneous Spaces and Metric Number Theory
Ergodic Theory, Introduction to
Ergodic Theory: Basic Examples and Constructions
Ergodic Theory: Fractal Geometry
Ergodic Theory: Interactions with Combinatorics and Number Theory
Ergodic Theory: Non-singular Transformations
Ergodic Theory: Recurrence
Ergodic Theory: Rigidity
Ergodicity and Mixing Properties
Isomorphism Theory in Ergodic Theory
Joinings in Ergodic Theory
Measure Preserving Systems
Pressure and Equilibrium States in Ergodic Theory
Smooth Ergodic Theory
Spectral Theory of Dynamical Systems
Symbolic Dynamics
Topological Dynamics

Finance and Econometrics, Section Editor: Bruce Mizrach

Bayesian Methods in Non-linear Time Series
 Corporate and Municipal Bond Market Microstructure in the U.S.
 Econometrics: Models of Regime Changes
 Econometrics: Nonlinear Cointegration
 Econometrics: Panel Data Methods
 Econophysics, Observational
 Finance and Econometrics, Introduction to
 Finance, Agent Based Modeling in
 Financial Economics, Fat-Tailed Distributions
 Financial Economics, Non-linear Time Series in
 Financial Economics, Return Predictability and Market Efficiency
 Financial Economics, The Cross-Section of Stock Returns and the Fama-French Three Factor Model
 Financial Economics, Time Variation in the Market Return
 Financial Forecasting, Non-linear Time Series in
 Financial Forecasting, Sensitive Dependence
 GARCH Modeling
 Macroeconomics, Nonlinear Time Series in
 Market Microstructure
 Market Microstructure, Foreign Exchange
 Microeconometrics
 Nonparametric Tests for Independence
 Stochastic Volatility
 Treasury Market, Microstructure of the U.S.

Fractals and Multifractals, Section Editor: Daniel ben-Avraham and Shlomo Havlin

Anomalous Diffusion on Fractal Networks
 Dynamics on Fractals
 Fractal and Multifractal Scaling of Electrical Conduction in Random Resistor Networks
 Fractal and Multifractal Time Series
 Fractal and Transfractal Scale-Free Networks
 Fractal Geometry, A Brief Introduction to
 Fractal Growth Processes
 Fractal Structures in Condensed Matter Physics
 Fractals and Economics
 Fractals and Multifractals, Introduction to
 Fractals and Percolation
 Fractals and Wavelets: What can we Learn on Transcription and Replication
 from Wavelet-Based Multifractal Analysis of DNA Sequences?
 Fractals in Biology
 Fractals in Geology and Geophysics
 Fractals in the Quantum Theory of Spacetime
 Fractals Meet Chaos
 Phase Transitions on Fractals and Networks
 Reaction Kinetics in Fractals

Game Theory, Section Editor: Marilda Sotomayor

Bayesian Games: Games with Incomplete Information
 Cooperative Games
 Cooperative Games (Von Neumann–Morgenstern Stable Sets)

Correlated Equilibria and Communication in Games
Cost Sharing
Differential Games
Dynamic Games with an Application to Climate Change Models
Evolutionary Game Theory
Fair Division
Game Theory and Strategic Complexity
Game Theory, Introduction to
Implementation Theory
Inspection Games
Learning in Games
Market Games and Clubs
Mechanism Design
Networks and Stability
Principal-Agent Models
Repeated Games with Complete Information
Repeated Games with Incomplete Information
Reputation Effects
Signaling Games
Static Games
Stochastic Games
Two-Sided Matching Models
Voting
Voting Procedures, Complexity of
Zero-sum Two Person Games

Granular Computing, Section Editor: Tsau Y. Lin

Cooperative Multi-Hierarchical Query Answering Systems
Dependency and Granularity in Data Mining
Fuzzy Logic
Fuzzy Probability Theory
Fuzzy System Models Evolution from Fuzzy Rulebases to Fuzzy Functions
Genetic-Fuzzy Data Mining Techniques
Granular Model for Data Mining
Granular Computing and Data Mining for Ordered Data: The Dominance-Based Rough Set Approach
Granular Computing and Modeling of the Uncertainty in Quantum Mechanics
Granular Computing System Vulnerabilities: Exploring the Dark Side of Social Networking Communities
Granular Computing, Information Models for
Granular Computing, Introduction to
Granular Computing, Philosophical Foundation for
Granular Computing, Principles and Perspectives of
Granular Computing: Practices, Theories and Future Directions
Granular Neural Network
Granulation of Knowledge: Similarity Based Approach in Information and Decision Systems
Multi-Granular Computing and Quotient Structure
Non-standard Analysis, An Invitation to
Rough and Rough-Fuzzy Sets in Design of Information Systems
Rough Set Data Analysis
Rule Induction, Missing Attribute Values and Discretization
Social Networks and Granular Computing

Intelligent Systems, Section Editor: James A. Hendler

Artificial Intelligence in Modeling and Simulation
 Intelligent Control
 Intelligent Systems, Introduction to
 Learning and Planning (Intelligent Systems)
 Mobile Agents
 Semantic Web

Non-Linear Ordinary Differential Equations and Dynamical Systems, Section Editor: Ferdinand Verhulst

Center Manifolds
 Dynamics of Hamiltonian Systems
 Dynamics of Parametric Excitation
 Existence and Uniqueness of Solutions of Initial Value Problems
 Hyperbolic Dynamical Systems
 Lyapunov–Schmidt Method for Dynamical Systems
 Non-linear Ordinary Differential Equations and Dynamical Systems, Introduction to
 Numerical Bifurcation Analysis
 Periodic Orbits of Hamiltonian Systems
 Periodic Solutions of Non-autonomous Ordinary Differential Equations
 Relaxation Oscillations
 Stability Theory of Ordinary Differential Equations

Non-Linear Partial Differential Equations, Section Editor: Italo Capuzzo Dolcetta

Biological Fluid Dynamics, Non-linear Partial Differential Equations
 Control of Nonlinear Partial Differential Equations
 Dispersion Phenomena in Partial Differential Equations
 Hamilton-Jacobi Equations and weak KAM Theory
 Hyperbolic Conservation Laws
 Navier-Stokes Equations: A Mathematical Analysis
 Non-linear Partial Differential Equations, Introduction to
 Non-linear Partial Differential Equations, Viscosity Solution Method in
 Non-linear Stochastic Partial Differential Equations
 Scaling Limits of Large Systems of Nonlinear Partial Differential Equations
 Vehicular Traffic: A Review of Continuum Mathematical Models

Percolation, Section Editor: Muhammad Sahimi

Bootstrap Percolation
 Conduction and Diffusion in Percolating Systems
 Continuum Percolation
 Correlated Percolation
 Elastic Percolation Networks
 Invasion Percolation
 Networks, Flexibility and Mobility in
 Percolation and Polymer Morphology and Rheology
 Percolation in Complex Networks
 Percolation in Porous Media
 Percolation Lattices, Efficient Simulation of Large
 Percolation Phase Transition
 Percolation Thresholds, Exact
 Percolation, and Faults and Fractures in Rock

Percolation, Introduction to
Scaling Properties, Fractals, and the Renormalization Group Approach to Percolation

Perturbation Theory, Section Editor: Giuseppe Gaeta

Diagrammatic Methods in Classical Perturbation Theory
Hamiltonian Perturbation Theory (and Transition to Chaos)
Kolmogorov-Arnold-Moser (KAM) Theory
N-body Problem and Choreographies
Nekhoroshev Theory
Non-linear Dynamics, Symmetry and Perturbation Theory in
Normal Forms in Perturbation Theory
Perturbation Analysis of Parametric Resonance
Perturbation of Equilibria in the Mathematical Theory of Evolution
Perturbation of Systems with Nilpotent Real Part
Perturbation Theory
Perturbation Theory and Molecular Dynamics
Perturbation Theory for Non-smooth Systems
Perturbation Theory for PDEs
Perturbation Theory in Celestial Mechanics
Perturbation Theory in Quantum Mechanics
Perturbation Theory, Introduction to
Perturbation Theory, Semiclassical
Perturbative Expansions, Convergence of
Quantum Bifurcations

Probability and Statistics in Complex Systems, Section Editor: Henrik Jeldtoft Jensen

Bayesian Statistics
Branching Processes
Complexity in Systems Level Biology and Genetics: Statistical Perspectives
Correlations in Complex Systems
Entropy
Extreme Value Statistics
Field Theoretic Methods
Fluctuations, Importance of: Complexity in the View of Stochastic Processes
Hierarchical Dynamics
Levy Statistics and Anomalous Transport: Levy Flights and Subdiffusion
Probability and Statistics in Complex Systems, Introduction to
Probability Densities in Complex Systems, Measuring
Probability Distributions in Complex Systems
Random Matrix Theory
Random Walks in Random Environment
Record Statistics and Dynamics
Stochastic Loewner Evolution: Linking Universality, Criticality and Conformal Invariance in Complex Systems
Stochastic Processes

Quantum Information Science, Section Editor: Joseph F. Traub

Quantum Algorithms
Quantum Algorithms and Complexity for Continuous Problems
Quantum Computational Complexity
Quantum Computing Using Optics

Quantum Computing with Trapped Ions
 Quantum Cryptography
 Quantum Error Correction and Fault Tolerant Quantum Computing
 Quantum Information Processing
 Quantum Information Science, Introduction to

Social Network Analysis, Section Editor: John Scott

Network Analysis, Longitudinal Methods of
 Positional Analysis and Blockmodelling
 Social Network Analysis, Estimation and Sampling in
 Social Network Analysis, Graph Theoretical Approaches to
 Social Network Analysis, Large-Scale
 Social Network Analysis, Overview of
 Social Network Analysis, Two-Mode Concepts in
 Social Network Visualization, Methods of
 Social Networks, Algebraic Models for
 Social Networks, Diffusion Processes in
 Social Networks, Exponential Random Graph (p^*) Models for

Social Science, Physics and Mathematics Applications in, Section Editor: Andrzej Nowak

Agent Based Modeling and Neoclassical Economics: A Critical Perspective
 Agent Based Models in Economics and Complexity
 Applications of Physics and Mathematics to Social Science, Introduction to
 Cities as Complex Systems: Scaling, Interaction, Networks, Dynamics and Urban Morphologies
 Consciousness and Complexity
 Development, Complex Dynamic Systems of
 Development, Evolution, and the Emergence of Novel Behavior
 Dynamics and Evaluation: The Warm Glow of Processing Fluency
 Dynamics of Language
 Evolution of Culture, Memetics
 Extreme Events in Socio-economic and Political Complex Systems, Predictability of
 Human Behavior, Dynamics of
 Intermittency and Localization
 Investment Decision Making in Finance, Models of
 Marketing: Complexity Modeling, Theory and Applications in
 Minority Games
 Moral Dynamics
 Opinions Dynamics and Sociophysics
 Physics and Mathematics Applications in Social Science
 Rational, Goal-Oriented Agents
 Social Cognitive Complexity
 Social Coordination, from the Perspective of Coordination Dynamics
 Social Organizations with Complexity Theory: A Dramatically Different Lens for the Knowledge Economy
 Social Processes, Physical Models of
 Social Processes, Simulation Models of
 Social Psychology, Applications of Complexity to
 Traffic and Crowd Dynamics: The Physics of the City

Soft Computing, Section Editor: Janusz Kacprzyk

Aggregation Operators and Soft Computing
 Evolving Fuzzy Systems

Fuzzy Logic, Type-2 and Uncertainty
Fuzzy Optimization
Fuzzy Sets Theory, Foundations of
Hybrid Soft Computing Models for Systems Modeling and Control
Neuro-fuzzy Systems
Possibility Theory
Rough Sets in Decision Making
Rough Sets: Foundations and Perspectives
Soft Computing, Introduction to
Statistics with Imprecise Data

Solitons, Section Editor: Mohamed A. Helal

Adomian Decomposition Method Applied to Non-linear Evolution Equations in Soliton Theory
Inverse Scattering Transform and the Theory of Solitons
Korteweg–de Vries Equation (KdV), Different Analytical Methods for Solving the
Korteweg–de Vries Equation (KdV) and Modified Korteweg–de Vries Equations (mKdV),
Semi-analytical Methods for Solving the
Korteweg–de Vries Equation (KdV), Some Numerical Methods for Solving the
Korteweg–de Vries Equation (KdV) History, Exact N-Soliton Solutions and Further Properties
Non-linear Internal Waves
Partial Differential Equations that Lead to Solitons
Shallow Water Waves and Solitary Waves
Soliton Perturbation
Solitons and Compactons
Solitons Interactions
Solitons, Introduction to
Solitons, Tsunamis and Oceanographical Applications of
Solitons: Historical and Physical Introduction
Water Waves and the Korteweg–de Vries Equation

Statistical and Nonlinear Physics, Section Editor: M. Cristina Marchetti

Anisotropic Networks, Elastomers and Gels
Cell Biology: Networks, Regulation and Pathways
Chaotic Dynamics in Nonequilibrium Statistical Mechanics
Collective Transport and Depinning
Complex Systems and Emergent Phenomena
Cytoskeleton and Cell Motility
Disordered Elastic Media
Econophysics, Statistical Mechanics Approach to
Fluctuation Theorems, Brownian Motors and Thermodynamics of Small Systems
Glasses and Aging, A Statistical Mechanics Perspective on
Granular Flows
Jamming of Granular Matter
Jerky Motion in Slowly Driven Magnetic and Earthquake Fault Systems, Physics of
Microfluidics
Monte Carlo Simulations in Statistical Physics
Networks: Structure and Dynamics
Neuronal Dynamics
Noise and Stability in Modelocked Soliton Lasers
Non-linear Fluid Flow, Pattern Formation, Mixing and Turbulence
Optimization Problems and Algorithms from Computer Science

Polymer Physics
 Protein Mechanics at the Single-Molecule Level
 Quantum Chaos
 Statistical and Non-linear Physics, Introduction to
 Ultracold Atomic Gases: Novel States of Matter

Synergetics, Section Editor: Hermann Haken

Brain Pacemaker
 Fluid Dynamics, Pattern Formation
 Fluid Dynamics, Turbulence
 Intentionality: A Naturalization Proposal on the Basis of Complex Dynamical Systems
 Linear and Non-linear Fokker–Planck Equations
 Movement Coordination
 Patterns and Interfaces in Dissipative Dynamics
 Self-Organization and Clinical Psychology
 Self-Organization and the City
 Synergetics, Introduction to
 Synergetics: Basic Concepts

System Dynamics, Section Editor: Brian Dangerfield

Business Policy and Strategy, System Dynamics Applications to
 Delay and Disruption in Complex Projects
 Diffusion of Innovations, System Dynamics Analysis of the
 Dynamics of Income Distribution in a Market Economy: Possibilities for Poverty Allevation
 Group Model Building
 Health Care in the United Kingdom and Europe, System Dynamics Applications to
 Health Care in the United States, System Dynamics Applications to
 Public Policy, System Dynamics Applications to
 Scenario-Driven Planning with System Dynamics
 System Dynamics and Its Contribution to Economics and Economic Modeling
 System Dynamics and Organizational Learning
 System Dynamics in the Evolution of the Systems Approach
 System Dynamics Modeling: Validation for Quality Assurance
 System Dynamics Models of Environment, Energy and Climate Change
 System Dynamics Models, Optimization of
 System Dynamics Philosophical Background and Underpinnings
 System Dynamics, Analytical Methods for Structural Dominance Analysis in
 System Dynamics, Introduction to
 System Dynamics, The Basic Elements of

Systems and Control Theory, Section Editor: Matthias Kawski

Chronological Calculus in Systems and Control Theory
 Discrete Control Systems
 Finite Dimensional Controllability
 Hybrid Control Systems
 Learning, System Identification, and Complexity
 Maximum Principle in Optimal Control
 Mechanical Systems: Symmetries and Reduction
 Nonsmooth Analysis in Systems and Control Theory
 Observability (Deterministic Systems) and Realization Theory

Robotic Networks, Distributed Algorithms for
Stability and Feedback Stabilization
Stochastic Noises, Observation, Identification and Realization with
System Regulation and Design, Geometric and Algebraic Methods in
Systems and Control, Introduction to

Systems Biology, Section Editor: Timothy P. Galitski

Biological Data Integration and Model Building
Biological Models of Molecular Network Dynamics
Biomolecular Network Structure and Function
Boolean Modeling of Biological Networks
Ecological Systems
Functional Genomics for Characterization of Genome Sequences
Genome Organization
Metabolic Systems Biology
Stochastic Models of Biological Processes
Systems Biology of Human Immunity and Disease
Systems Biology, Introduction to
Systems Genetics and Complex Traits

Traffic Management, Complex Dynamics of, Section Editor: Boris Kerner

Air Traffic Control, Complex Dynamics of
Complex Dynamics of Traffic Management, Introduction to
Evacuation as a Communication and Social Phenomenon
Evacuation Dynamics: Empirical Results, Modeling and Applications
Freeway Traffic Management and Control
Pedestrian, Crowd and Evacuation Dynamics
Traffic Breakdown, Probabilistic Theory of
Traffic Congestion, Modeling Approaches to
Traffic Congestion, Spatiotemporal Features of
Traffic Networks, Optimization and Control of Urban
Traffic Networks: Dynamic Traffic Routing, Assignment, and Assessment
Traffic Prediction of Congested Patterns
Travel Behaviour and Demand Analysis and Prediction

Unconventional Computing, Section Editor: Andrew Adamatzky

Amorphous Computing
Analog Computation
Artificial Chemistry
Bacterial Computing
Cellular Computing
Computing in Geometrical Constrained Excitable Chemical Systems
Computing with Solitons
DNA Computing
Evolution in Materio
Immunocomputing
Mechanical Computing: The Computational Complexity of Physical Devices
Membrane Computing
Molecular Automata
Nanocomputers

Optical Computing
Quantum Computing
Reaction-Diffusion Computing
Reversible Computing
Thermodynamics of Computation
Unconventional Computing, Introduction to
Unconventional Computing, Novel Hardware for

Wavelets, Section Editor: Edward Aboufadel

Bivariate (Two-dimensional) Wavelets
Comparison of Discrete and Continuous Wavelet Transforms
Curvelets and Ridgelets
Multivariate Splines and Their Applications
Multiwavelets
Numerical Issues When Using Wavelets
Popular Wavelet Families and Filters and Their Use
Statistical Applications of Wavelets
Wavelets and PDE Techniques in Image Processing, A Quick Tour of
Wavelets and the Lifting Scheme
Wavelets, Introduction to