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Economie, recherche opérationnelle, jeux

Martino BARDI, T.E.S. RAGHAVAN, T. PARTHASARATHY, (Editors). — **Stochastic and differential games: theory and numerical methods.** — Annals of the International Society of Dynamic Games, vol. 4. — Un vol. relié, 16×24, de XVI, 380 p. — ISBN 0-8176-4029-0. — Prix: SFr. 168.00. — Birkhäuser, Boston, 1999.

This new book is aimed at control engineers, applied mathematicians, operations research specialists, and research workers. It contains survey papers on such diverse topics as pursuit-evasion games, viscosity solutions, gambling theory, discounted stochastic games, optimal routing, numerical methods, and others. The volume consists of two parts, the first dealing with zero-sum differential games and numerical methods, the second with stochastic and nonzero-sum games and applications.

Ding-Zhu DU, Panos M. PARDALOS, (Editors). — **Handbook of combinatorial optimization.** — 3 vol. reliés, 17×25, de VIII, 785 p., VIII, 753 p. et VIII, 865 p. — ISBN 0-7923-5019-7 (set). — Prix: Dfl. 2'450.00 (les 3 vol.). — Kluwer Academic Publishers, Boston, 1998.

Contents of vol. 1: Mixed-integer nonlinear optimization in process synthesis. — Approximate algorithms and heuristics for MAX-SAT. — Connections between nonlinear programming and discrete optimization. — Interior point methods for combinatorial optimization. — Knapsack problems. — Fractional combinatorial optimization. — Reformulation-linearization techniques for discrete optimization problems. — Gröbner bases in integer programming. — Applications of set covering, set packing and set partitioning models: a survey. — *Contents of vol. 2:* Efficient algorithms for geometric shortest path query problems. — Computing distances between evolutionary trees. — Combinatorial optimization and coalition games. — Steiner minimal trees: an introduction, parallel computation, and future work. — Resource allocation problems. — Combinatorial optimization in clustering. — The graph coloring problem: a bibliographic survey. — Steiner minimal trees in E^3: theory, algorithms, and applications. — Dynamical system approaches to combinatorial optimization. — On-line dominating set problems for graphs. — Optimization problems in optical networks. — Shortest networks on surfaces. — Minimum weight triangulation. — Optimization applications in the airline industry. — *Contents of vol. 3:* Semidefinite relaxations, multivariate normal distributions, and order statistics. — A review of machine scheduling: complexity, algorithms and approximability. — Routing and topology embedding in lightwave networks. — The quadratic assignment problem. — Algorithmic aspects of domination in graphs. — Selected algorithmic techniques for parallel optimization. — Multispace search for combinatorial optimization. — The equitable coloring of graphs. — Randomized parallel algorithms for combinatorial optimization. — Tabu search.

Michael PATRIKSSON. — **Nonlinear programming and variational inequality problems: a unified approach.** — Applied optimization, vol. 23. — Un vol. relié, 16,5×24,5, de XIV, 334 p. — ISBN 0-7923-5455-9. — Prix: Dfl. 280.00. — Kluwer Academic Publishers, Dordrecht, 1999.

The framework of algorithms presented in this book is called Cost Approximation. It describes, for a given formulation of a variational inequality or nonlinear programming problem, an algorithm by means of approximating mappings and problems, a principle for the update of the iteration points, and a merit function which guides and monitors the convergence of the algorithm. One purpose of the book is to offer this framework as an intuitively appealing tool for describing an algorithm. Another purpose is to provide a convergence analysis of the algorithms in the framework.