

# Index

- A-cyclic network, 6
- Active route set, 24, 114
- Age-Cohort-Period model, 230
- Average excess cost, 3
- Bottleneck, 200
- Capacity constraints, 108, 200
- Car diffusion, 231
- Complementarity problem, 108, 200
- Complete assignment process, 204
- Cone field, 203
- Cone projection method, 205
- Continuous cost function, 59
- Continuum hypothesis, 126
- Control constraints, 201
- Cost-averaging algorithm (MSA-CA), 58
- Day-to-day variations, 34
- Defuzzification, 164
- Demand responsive model, 108, 213
- Disaggregate simplicial decomposition (DSD), 5, 23
- Diverge problem, 135
- Dynamic heterogeneity, 230
- Dynamic traffic assignment, 120
- Economic and demographic factors, 230
- Equilibrium conditions, 21, 40, 44, 198
- Equilibrium travel time variance, 80
- Extended maximum cost, 6
- FIFO, 122
- Flow-averaging algorithm (MSA-FA), 58
- Flow-delay functions, 113
- Fuzzification, 164
- Fuzzy similarity, 172
- Fuzzy traffic signal control, 163
- Gammit model, 62
- General equilibrium model, 113
- Generalized travel cost, 20
- Historical database, 218, 223
- Household car ownership, 229
- Intersection modeling, 126
- Lighthill-Whitham-Richards model, 120
- Long term forecasting, 229
- Monotone cost function, 59, 108, 201
- Multi-label shortest path, 26
- Multicopy network, 109
- Nonlinear money-time relation, 20
- Optimization formulation, 23, 112
- Park & Ride, 213
- Partial flows, 120
- Path choice map, 57
- Path choice model, 56
- Path cost model, 56
- Path flow propagation model, 55
- Perceived cost, 39
- Pointwise intersection, 129
- Population density, 229
- Pseudo-panels, 229
- Reliability
  - connectivity, 70
  - performance, 70
- Route construction, 217
- Route excess cost, 3
- Route travel time variance, 81
- Routing, 217
  - dynamic, 215
- Saturation, 229
- Sensitivity analysis, 72
- Simplicial decomposition, 5
- Stationary solution, 129
- Stochastic demands, 34
- Stochastic network loading (SNL), 58
- Stochastic user equilibrium (SUE), 33, 58, 72
  - sensitivity analysis, 72
- Traffic assignment, 53
  - link-based, 4, 25
  - origin-based, 2
  - route-based, 5, 23
- Transport system
  - demand-responsive, 213
- Travel time prediction, 215, 221
- Unreliable routes, 81
- Variational inequality, 198
- Vector field, 198
- Wardrop conditions, 21, 111

# Applied Optimization

---

1. D.-Z. Du and D.F. Hsu (eds.): *Combinatorial Network Theory*. 1996  
ISBN 0-7923-3777-8
2. M.J. Panik: *Linear Programming: Mathematics, Theory and Algorithms*. 1996  
ISBN 0-7923-3782-4
3. R.B. Kearfott and V. Kreinovich (eds.): *Applications of Interval Computations*.  
1996 ISBN 0-7923-3847-2
4. N. Hritonenko and Y. Yatsenko: *Modeling and Optimization of the Lifetime of  
Technology*. 1996 ISBN 0-7923-4014-0
5. T. Terlaky (ed.): *Interior Point Methods of Mathematical Programming*. 1996  
ISBN 0-7923-4201-1
6. B. Jansen: *Interior Point Techniques in Optimization. Complementarity, Sensitivity  
and Algorithms*. 1997 ISBN 0-7923-4430-8
7. A. Migdalas, P.M. Pardalos and S. Størøy (eds.): *Parallel Computing in Optimization*.  
1997 ISBN 0-7923-4583-5
8. F.A. Lootsma: *Fuzzy Logic for Planning and Decision Making*. 1997  
ISBN 0-7923-4681-5
9. J.A. dos Santos Gromicho: *Quasiconvex Optimization and Location Theory*. 1998  
ISBN 0-7923-4694-7
10. V. Kreinovich, A. Lakeyev, J. Rohn and P. Kahl: *Computational Complexity and  
Feasibility of Data Processing and Interval Computations*. 1998  
ISBN 0-7923-4865-6
11. J. Gil-Aluja: *The Interactive Management of Human Resources in Uncertainty*. 1998  
ISBN 0-7923-4886-9
12. C. Zopounidis and A.I. Dimitras: *Multicriteria Decision Aid Methods for the Predic-  
tion of Business Failure*. 1998 ISBN 0-7923-4900-8
13. F. Giannessi, S. Komlósi and T. Rapcsák (eds.): *New Trends in Mathematical Pro-  
gramming. Homage to Steven Vajda*. 1998 ISBN 0-7923-5036-7
14. Ya-xiang Yuan (ed.): *Advances in Nonlinear Programming*. Proceedings of the '96  
International Conference on Nonlinear Programming. 1998 ISBN 0-7923-5053-7
15. W.W. Hager and P.M. Pardalos: *Optimal Control. Theory, Algorithms, and Applica-  
tions*. 1998 ISBN 0-7923-5067-7
16. Gang Yu (ed.): *Industrial Applications of Combinatorial Optimization*. 1998  
ISBN 0-7923-5073-1
17. D. Braha and O. Maimon (eds.): *A Mathematical Theory of Design: Foundations,  
Algorithms and Applications*. 1998 ISBN 0-7923-5079-0

# Applied Optimization

---

18. O. Maimon, E. Khmelnitsky and K. Kogan: *Optimal Flow Control in Manufacturing. Production Planning and Scheduling.* 1998 ISBN 0-7923-5106-1
19. C. Zopounidis and P.M. Pardalos (eds.): *Managing in Uncertainty: Theory and Practice.* 1998 ISBN 0-7923-5110-X
20. A.S. Belenky: *Operations Research in Transportation Systems: Ideas and Schemes of Optimization Methods for Strategic Planning and Operations Management.* 1998 ISBN 0-7923-5157-6
21. J. Gil-Aluja: *Investment in Uncertainty.* 1999 ISBN 0-7923-5296-3
22. M. Fukushima and L. Qi (eds.): *Reformulation: Nonsmooth, Piecewise Smooth, Semismooth and Smoothing Methods.* 1999 ISBN 0-7923-5320-X
23. M. Patriksson: *Nonlinear Programming and Variational Inequality Problems. A Unified Approach.* 1999 ISBN 0-7923-5455-9
24. R. De Leone, A. Murlì, P.M. Pardalos and G. Toraldo (eds.): *High Performance Algorithms and Software in Nonlinear Optimization.* 1999 ISBN 0-7923-5483-4
25. A. Schöbel: *Locating Lines and Hyperplanes. Theory and Algorithms.* 1999 ISBN 0-7923-5559-8
26. R.B. Statnikov: *Multicriteria Design. Optimization and Identification.* 1999 ISBN 0-7923-5560-1
27. V. Tsurkov and A. Mironov: *Minimax under Transportation Constrains.* 1999 ISBN 0-7923-5609-8
28. V.I. Ivanov: *Model Development and Optimization.* 1999 ISBN 0-7923-5610-1
29. F.A. Lootsma: *Multi-Criteria Decision Analysis via Ratio and Difference Judgement.* 1999 ISBN 0-7923-5669-1
30. A. Eberhard, R. Hill, D. Ralph and B.M. Glover (eds.): *Progress in Optimization. Contributions from Australasia.* 1999 ISBN 0-7923-5733-7
31. T. Hürlimann: *Mathematical Modeling and Optimization. An Essay for the Design of Computer-Based Modeling Tools.* 1999 ISBN 0-7923-5927-5
32. J. Gil-Aluja: *Elements for a Theory of Decision in Uncertainty.* 1999 ISBN 0-7923-5987-9
33. H. Frenk, K. Roos, T. Terlaky and S. Zhang (eds.): *High Performance Optimization.* 1999 ISBN 0-7923-6013-3
34. N. Hritonenko and Y. Yatsenko: *Mathematical Modeling in Economics, Ecology and the Environment.* 1999 ISBN 0-7923-6015-X
35. J. Virant: *Design Considerations of Time in Fuzzy Systems.* 2000 ISBN 0-7923-6100-8

# Applied Optimization

---

36. G. Di Pillo and F. Giannessi (eds.): *Nonlinear Optimization and Related Topics*. 2000  
ISBN 0-7923-6109-1
37. V. Tsurkov: *Hierarchical Optimization and Mathematical Physics*. 2000  
ISBN 0-7923-6175-X
38. C. Zopounidis and M. Doumpos: *Intelligent Decision Aiding Systems Based on Multiple Criteria for Financial Engineering*. 2000  
ISBN 0-7923-6273-X
39. X. Yang, A.I. Mees, M. Fisher and L.Jennings (eds.): *Progress in Optimization. Contributions from Australasia*. 2000  
ISBN 0-7923-6286-1
40. D. Butnariu and A.N. Iusem: *Totally Convex Functions for Fixed Points Computation and Infinite Dimensional Optimization*. 2000  
ISBN 0-7923-6287-X
41. J. Mockus: *A Set of Examples of Global and Discrete Optimization. Applications of Bayesian Heuristic Approach*. 2000  
ISBN 0-7923-6359-0
42. H. Neunzert and A.H. Siddiqi: *Topics in Industrial Mathematics. Case Studies and Related Mathematical Methods*. 2000  
ISBN 0-7923-6417-1
43. K. Kogan and E. Khmelnsky. *Scheduling: Control-Based Theory and Polynomial-Time Algorithms*. 2000  
ISBN 0-7923-6486-4
44. E. Triantaphyllou: *Multi-Criteria Decision Making Methods. A Comparative Study*. 2000  
ISBN 0-7923-6607-7
45. S.H. Zanakis, G. Doukidis and C. Zopounidis (eds.): *Decision Making: Recent Developments and Worldwide Applications*. 2000  
ISBN 0-7923-6621 -2
46. G.E. Stavroulakis: *Inverse and Crack Identification Problems in Engineering Mechanics*. 2000  
ISBN 0-7923-6690-5
47. A. Rubinov and B. Glover (eds.): *Optimization and Related Topics*. 2001  
ISBN 0-7923-6732-4
48. M. Pursula and J. Niittymäki (eds.): *Mathematical Methods on Optimization in Transportation Systems*. 2000  
ISBN 0-7923-6774-X
49. E. Cascetta: *Transportation Systems Engineering: Theory and Methods*. 2001  
ISBN 0-7923-6792-8
50. M.C. Ferris, O.L. Mangasarian and J.-S. Pang (eds.): *Complementarity: Applications, Algorithms and Extensions*. 2001  
ISBN 0-7923-6816-9
51. V. Tsurkov: *Large-scale Optimization – Problems and Methods*. 2001  
ISBN 0-7923-6817-7
52. X. Yang, K.L. Teo and L. Caccetta (eds.): *Optimization Methods and Applications*. 2001  
ISBN 0-7923-6866-5
53. S.M. Stefanov: *Separable Programming Theory and Methods*. 2001  
ISBN 0-7923-6882-7

# Applied Optimization

---

54. S.P. Uryasev and P.M. Pardalos (eds.): *Stochastic Optimization: Algorithms and Applications*. 2001 ISBN 0-7923-6951-3
55. J. Gil-Aluja (ed.): *Handbook of Management under Uncertainty*. 2001 ISBN 0-7923-7025-2
56. B.-N. Vo, A. Cantoni and K.L. Teo: *Filter Design with Time Domain Mask Constraints: Theory and Applications*. 2001 ISBN 0-7923-7138-0
57. S. Zlobec: *Stable Parametric Programming*. 2001 ISBN 0-7923-7139-9
58. M.G. Nicholls, S. Clarke and B. Lehane (eds.): *Mixed-Mode Modelling: Mixing Methodologies for Organisational Intervention*. 2001 ISBN 0-7923-7151-8
59. F. Giannessi, P.M. Pardalos and T. Rapcsák (eds.): *Optimization Theory. Recent Developments from Mátraháza*. 2001 ISBN 1-4020-0009-X
60. K.M. Hantos, R. Lakner and M. Gerzson: *Intelligent Control Systems. An Introduction with Examples*. 2001 ISBN 1-4020-0134-7
61. D. Gstach: *Estimating Output-Specific Efficiencies*. 2002 ISBN 1-4020-0483-4
62. J. Geunes, P.M. Pardalos and H.E. Romeijn (eds.): *Supply Chain Management: Models, Applications, and Research Directions*. 2002 ISBN 1-4020-0487-7
63. M. Gendreau and P. Marcotte (eds.): *Transportation and Network Analysis: Current Trends. Miscellanea in Honor of Michael Florian*. 2002 ISBN 1-4020-0488-5
64. M. Patriksson and M. Labbé (eds.): *Transportation Planning. State of the Art*. 2002 ISBN 1-4020-0546-6
65. E. de Klerk: *Aspects of Semidefinite Programming. Interior Point Algorithms and Selected Applications*. 2002 ISBN 1-4020-0547-4