ISOLDE IV: NAMUR, BELGIUM
June 11-1, 1987

Thursday a.m., session 1: New applications of locational modelling

Z. Drezner	Location strategies for satellite's orbits.
S.C. Choi, W.S. DeSarbo, P.T. Harker	Optimal product positioning equilibria in multidimensional unfolding models. published as: choe, S.C.; eSarbo, W.S.; harker, P.T. "Optimal product positioning under price competition." *Management Science 36:* 1990, 175-199.
B. Boffey	Location problems in computer networks. published as: Boffey, B. "Location problems arising in computer networks," *Journal of the Operational Research Society 40*: 1989, 347-354, and boffey, B. "Location of software in distributed computing systems," *Journal of the Operational Research Society 40*: 1989, 863-870.
P.B. Mirchandani, R. Jagannathan	A location model for distributed database in a computer network. published as: Mirchandini, P.B.; Jagannathan, R. "Discrete facility location with nonlinear diseconomies in fixed costs." *Annals of Operations Research 18*: 1989, 213-224.

Thursday a.m., session 2: Location and routing problems

A. Balakrishnan, J.E. Ward, R.T. Wong	Integrated facility location and vehicle routing models: recent work and future prospects. published as: Balakrishnan, A.: Ward, J.E. "Integrated facility location and vehicle routing models: recent work and future prospects," *American Journal of Mthematical and Management Sciences 7*: 1987, 35-62.
O. Berman, D. Simchi-Levi	Recent developments in traveling salesman location problems. published as: Berman,O.; Simchi-Levi, D. "Minisum location of a traveling salesman." *Networks 16*: 1986, 239-254, and Simchi-Levi, D.; Berman, O. "Heuristics and bounds for the traveling salesman location problem on the plane," *Operations Research Letters 6*: 1987, 243-248, and Simchi-Levi,D.; Berman, O. "A heuristic alogorithm for the traveling salesman location problem on networks." *Operations Research 36*: 1988, 478-484.
G. Laporte, F. Louveaux, H. Mercure	Models and exact solutions for a class of stochastic location-routing problems. published as Laporte, G.; Louveaux, F.; Mercure, H. "Models and exact solutions for a class of stochastic location-routing problems, *EJOR* 39: 1989, 71-78.

A.R. Odoni	A "mini-tour" facility location problem.

Thursday p.m., session 1: Location and routing problems, continued

D.L. McFadden	Econometric modelling of location behaviour. published as: McFadden, D.L. "Econometric modelling of locational behaviour," *Annals of Operations Research* 18: 1989, 3-15.

Thursday p.m., session 2: Spatial competition

S.P. Anderson, A. de Palma	Spatial price discrimination with heterogeneous products.
J.H. Hamilton, W.B. McLeod, J.F. Thisse	Spatial competition and the CORE.
S.P. Anderson, D.J. Neven	Market efficiency with combinable products short break.
M. Fujita, H. Ogawa	Oligopolistic firm location with endogenous demands for substitutable and complementary goods.
J.C. Thill	Impact of multipurpose multistop shopping on the entry of new firms.

Friday a.m., session 1: New developments in discrete location theory

R.K. Kincaid, O. Maimon	The point of minimum variance on 3-cactus graphs. published as: Kincaid, R.K.; Maimon, O. "Locating a point of minimum variance on triangular graphs," *Transportation Science* 23: 1989, 216-219.
J. Karkazis	Multi-criteria decisions based on the notion of (λ, μ) efficiency for the location of facilities in competitive environment.
J.A. Moreno	A good polynomial heuristic algorithm for the p-center problem. published as: Moreno, J.A.; Rodriguez, C.; Jimenex, N. "Heuristic cluster algorithm for the multiple facility location-allocation problems," *RAIRO* 25: 1991, 97-107.

Friday a.m., session 2: New results in continuous location theory I

H. Juel, R. Love	A localization property for facility location problems with arbitrary norms. published as: Juel, H.; Love, R. "A localization property for facility location problems with arbitrary norms," *Naval Research Logistics* 35: 1988, 203-207.
F. Plastria	GBSSS: The generalized big square small squae method for single facility location in the plane. published as: Plastria, F. "GBSSS: The generalized big square small square method for planar single-facility location," *EJOR* 62: 1992, 163-174.
B. Pelegrin, F.R. Fernandez	Determination of efficient solutions for point-objective locational decision problems. published as: Pelegrin, B.; Fernandex, F.R. "Determination of efficient solutions for point-objective locational decision problems," *Annals of Operations Research* 18: 1989, 93-102.

Friday a.m., session 3: On tree-location problems

E. Minieka	The delivery man problem on a tree network. published as: Minieka, E. "The delivery man problem on a tree network," A*nnals of Operations Research* 18: 1989, 261-266.
G.C. Moore	Solving the maximal covering tree problem by learning to reduce search.
V.A. Hutson, C. ReVelle	Maximal covering tree problems. published as: Hutson, V.A.; ReVelle, C. "The maximal direct covering tree problem." *Transportation Science* 23: 1989, 288.

Friday a.m., session 4: Recent advances in covering location problems

M.S. Daskin, A.E. Haghani, M. Khanal, C. Mamandraki	Aggregation effects in maximum covering models. published as: Daskin, M.S.; Haghani, A.E.; khanal, m.; Mamandraki, C. "Aggregation effects in maximum covering models," *Annals of Operations Research* 18: 1989, 115-140.
K. Hogan, C. ReVelle	The maximum availability location problem. published as: Hogan, K.; ReVelle, C. "The maximum availability location problem," *Transportation Science 23*: 1989, 192-**??** ReVelle, C.; Hogan,K. "The maximum reliability location problem and reliable p-center problem: derivitives of the probabilistic location set **??** problem," *Annals of Operations Research 18*: 1989, 155-173.
I.D. Moon, S.S. Chaudhry	Unweighted conditional covering: hybrid heirustics and computational results.
D.A. Schilling,	The capacitated maximal covering location problem with backup

H. Pirkul	service. published as: Pirkul, H.; Schilling, D.A. "The capacitated maximal covering loation problem with backup service," *Annals of Operations Research* 18: 1989, 141-154.

Friday p.m., session 1: Recent advances in covering location problems, continued

A.H.K. Rinnooy Kay	Heuristics and uncertainty. published as: Rinnooy Kan, A.H.G.; Stougie, L. "On the relation between complexity and uncertainty," *Annals of Operations Research* 18: 1989, 17-23.

Friday p.m., session 2: On discrete location models

P. Hansen, M. Labbé, M. Minoux	The p-center sum and p-median max location problems. published as: Hansen, P; Labbé, M.; Minoux, M. "The p-center sum location problem," *Cahiers du C.E.R.O* 36: 1994, 203-220.
A. Tamir	Improved complexity bounds for center location problems on networks by using dynamic data structures. published as: Tamir, A. "Imporved complexity bounds for center location problems on networks by uning dynamic data structures,: *SIAM Journal on Discrete Mathematics* 1: 1988, 377-396.
J.S. Martinich, L.A. Madeo	Computational performance of a vertex closing p-center algorithm.
P.M. Dearing, P.L. Hammer, B. Simeone	Boolean, set covering, and set packing formulations of the simple plant location problem. published as: Dearing, P.M.; Hammer, P.L.; Simeone, B. "Boolean and graph theoretic formulations of the simple plant location problem." *Transportation Science* 26: 1992, 138-148.
R.D. Galvao, L.A. Raggi	A method for solving to optimality large uncapacitated location problems. published as: Galvao, R.D.; Raggi, L.A. "A method for solving to optimality uncapacitated locational problems." *Annals of Operations Research* 18: 1989, 225-244.

Saturday a.m., session 1: New results in continuous location theory II

M. Labbé, J.F. Thisse, R.E. Wendell	Sensitivity analysis in minisum facility location problems. published as: Labbé, M.; Thisse, J.F.; Wendell, R.E. "Sensitivity analysis in minisum facility location problems," *Operations Research* 39: 1991, 961-969.
R.F. Love, P.D. Dowling	A generalized bounding method for facilities location models. published as: Love, R.F.; Dowling, P.D. "A generalized bounding

	method for facilities location models," *perations Research 37*: 1989, 653-657, and Love, R.F.; Dowling, P.D. "A new bounding method for single facility location models," *Annals of Operations Research 18*: 1989, 103-112.
C. Michelot, O. Lefebvre	Duality for constrained multifacility location problems with mixed norms and applications. published as: Idrissi, H.; Lefebvre, O.; Michelot, C. "Duality for consrained multifacility location problems with mixed norms and applications," *Annals of Operations Research* 18: 1989, 103-112.
M. O'Kelly	Solutions foe some minimax hub location problems. published as O'Kelly, M.E.; Miller, H.J. "Solution srategies for the single facility minimax hub location problem," *Papers in Regional Science 70*: 1991, 367-380.

Saturday a.m., session 2: Location and planning models

S.S. Chiu, M. Brandeau	Queuing location models: average performance-equity tradeoffs. published as: Chiu, S.S.; Brandeau, M. "A unified family of queuing-location models," *Operations Research 38*: 1990, 1034-1044 and Chiu, S.S.; Brandeau, M. "A center location problem with congestion," A*nnals of Operations Research 40*: 1992, 17-32.
M. Frantzeskakis, C.D.T. Watson-Gandy	The use of state space relaxation in dynamic depot location. published as: Frantzeskakis, M.; Watson-Gandy, C.D.T. "The use of state space relaxation for the dynamic facility location problem," *Annals of Operations Research* 18: 1989, 189-211.
Z. Zhu, C. ReVelle	Plant location with economies of scale in processing and transport cost. published as: Zhu, Z.P.; ReVelle, C.S.; Rosing, K. "Adaptation of the plant location model for regional environmental facilities and cost allocation strategy." *annals of Operations Research* 18: 1989, 279-302.
T.G. Crainic, P. Dejax, L. Delorme	Models for multimode multicommodity location problems with interdepot balancing requirements. published as: Crainic, T.G.; Dejax, P.; Delorme, L. "Models for multimode multicommodity location problems with interdepot balancing requirements," *Annals of Operations Research* 18: 1989, 279-302.
J.G. Klincewicz, H. Luss, C.S. Yu	A large-scale multilocation capacity planning model. published as: Klincewics, J.G.; Luss, H.; Yu, C.S. "A large-scale multilocation capacity planning model," *European Journal of Operational Research* 34: 1988, 178-190.

Saturday a.m., session 3: Axiomatic approaches to network location modelling

T.E. Smith	Distances in spatial analysis: an axiomatic appraoch.
T.U. Kim, T.J. Lowe, J.E. Ward, R.L. Francis	Structure location problems on networks. published as: Kim, T.U.; Lowe, T.J.; Ward, J.E.; Francis,R.L. "A minimim length covering subgraph of a network," *Annals of Operations Research* 18: 1989, 245-259.
R. Holzman	An axiomatic approach to location on networks. published as: Holzman, F. "An axiomatic approach to lacation on networks," Mathematics of Operations Research 15: 1990, 533-563.
R. Batta, U.S. Palekar	Mixed planar/network facility location problems. published as: Batta, R.; Palekar, U.S. "Mixed planar/network facility location problems," *Computers and Operations Research* 15: 1988, 61-67.

Monday a.m., session 1: Location problems in various economic environment

S.L. Hakimi, C.C. Kuo	A network location problem involving costs, prices, profits and competition. published as: Hakimi,S.L.; Kuo, C.C. "On a general network location-production-allocation problem," *EJOR* 55: 1991, 31-45.
D. Erlenkotter	Market area models. published as: Erlenkotter, D. "The general optimal market area model," *Annals of Operations Research* 18: 1989, 45-70.
H.A. Eiselt, G. Laporte	Maximizing trading areas by relocation. publishedas: Eiselt, H.A.; Laporte, G. "Location of a new facility on a linear market in the presence of weights," *Asia-Pacific Journal of Operational Research* 5: 1988, 160-165. and "Trading areas of facilities with different sizes," *RAIRO (Recerche Operationelle)* 22: 1988, 33-44.
T.L. Friesz, T. Miller, R. Tobin	Algorithms and existence theorems for competitive facility location on networks. published as: Friesz, T.L.; Miller, T.; Tobin, R. "Algorithms and existence theorems for competitive facility location on networks,"*Environment and Planning B* 15: 1988, **Pages???** and Frisz, T.L.; Miller, T.; Tobin, R.L. "Existence theory for spatially competitive network facility location models," *annals of Operations Research* 18: 1989, 267-276.

Monday a.m., session 2: Location problems in various economic envorinment

P. Lederer	Network competition.
C. F. Adams, Jr., J.E. Storbeck	Optimization models for entry deterring equilibrium in a loschian economy.
J.R. Current, J.E. Storbeck	A bicritereon approach to franchise locations.
M. Kuby	Objectives for dispersing facilities: variants of the p-dispersion problem. published as Kuby, R. "Programming models for facility dispersion: the p-dispersion and maximum dispersion problems," *Geographical Analysis* 19: 1987, 315-329.
V.F. Dökmeci	Multi-plant location with respect to price elastic demand.

Monday p.m., session 1: Location problems in various economic environment, continued

G. Rushton	Applications of location models. published as: Rushton, G. "Applications of location models," *Annals of Operations Research* 18: 1989, 25-42.

Monday p.m., session 2: Location modelling in geography

J. Lee, M.F. Goodchild	The coverage problem and visibility regions on topographic surfaces. published as: Lee,J.; Goodchild, M.F. "Coverage problems and visibility regions on topographic surfaces," *Annals of Operations Research* 18: 1989, 175-186.
.K. Jacobsen	On heuristics for some entropy maximizing location models.not published.
K.E. Rosing	Integer programming for cluster analysis in regional analysis. published as: Rosing, K.E. "Optimal clustering," *Environment and Planning A* 18: 1986, 1463-1476.
S. B. Park	Performance of principles for making locational decisions: the effect of the spatial structure of environments. published as: Park, S.B. "Performance of successively complex rules for locational decision-making," *Annals of Operations Research* 18: 1989, 323-343.
V.K. Tewari	Improving accessibility to school facilities in rural india: an application of location-allocation models.

Tuesday a.m., session 1: Applications of location-allocation models I

J.P. Osleeb, S.J. Ratick	Solving the just-in-time manufacturing problem as interperiod network storage location-allocation (INSLA) problem. published as: osleeb, J.P.; Ratick,S.J. "A dynamic location-allocation model for evaluating the spacial inputs of just-in-time planning." *Geographical Analysis* 22: 1990, 50-69.
E.L. Hillsman, D.W. Jones	Locating generating facilities to extend electric power supplies into unserved territories.
I. Thomas	Optimal location of public services: an application and its extensions. published as: Thomas, I. "La localisation optimale des services publics. Une méthode opérationelle et son application au service postal." Louvain-la-Neuve, Cabay, Revue des Théses, n°11, 269p.
A.M. de Kerchove	The location of swimming pools in mons district.

Tuesday a.m., session 2: Applications of location-allocation models II

M. Heller, J. Cohon, C. ReVelle	The use of simulation in validating a multiobjective EMS location model. published as: Heller, M.; Cohon, J.L.; reVelle, C.S. " the use of simulation in vailidation a multiobjective EMS location model," *Annals of Operations Research* 18: 1989, 303-322.
B. Fleischmann, J.N. Paraschis	Application of a planar transportation location model to a large scale districting problem: a case report. published as: Fleischmann, B.; Paraschis, J.N. "Solving a large scale districting problem: a case report," *CONR* 15; 1988, 521-533.
J.J. Van Dijk	Heuristic clustering in a p-median model.
S.C. Wirasinghe, U. Vandebona	Some aspects of the locationof subway stations and routes.

Tuesday p.m.: Hierarchical location-allocation models

Y. Eitan, S.C. Narula, J.M. Tien	A generalized model for hierarchical facilities location-allocation problem. published as: Eitan, Y.; Narula, S.C.; Tien, J.M. "A generalized approach to modelling the hierarchical location-allocation problem," *IEEE Transactions on SMC* 21: 1991, 39-46.
R.L. Church, J.R. Weaver	New structures and reformulations for the hierarchical and nonhierarchical covering location models.
M.J. Hodgson	Hierarchical facility location models for primary health care delivery in developing areas.