

## **VERÖFFENTLICHUNGEN BÜCHER**

G. Haag: Modelling with the Master Equation - Solution Methods and Applications in Social and Natural Sciences, (Springer, 2017)

A. Beivers, G. Haag, G.P. Steidel, N.F. Wittig: Geomarketing. Vernetzung im Gesundheitswesen, (Medizinisch Wissenschaftliche Verlagsgesellschaft, 2017)

G. Haag: Sprawling cities in Germany (FrancoAngeli, 2002)

W. Weidlich, G. Haag: An Integrated Model of Transport and Urban Evolution (Springer, 1999)

G. Haag, U. Mueller, K. Troitzsch (eds.): Economic Evolution and Demographic Change: Formal Models in Social Sciences, (Springer, 1993)

G. Haag: Dynamic Decision Theory. Applications to Urban and Regional Topics, (Kluwer, 1989)

W. Weidlich, G. Haag (eds.): Interregional Migration, Dynamic Theory and Comparative Analysis, (Springer, 1988)

W. Weidlich, G. Haag: Concepts and Models of a Quantitative Sociology, The Dynamics of Interaction Populations, Springer Series of Synergetics, Vol. 14 (Springer, 1983)

## **VERÖFFENTLICHUNGEN IN HANDBÜCHERN**

G. Haag: Decision-based modelling of complex spatial systems, in A. Reggiani, L. Schintler, D. Czamanki (Ed.): Handbook on Entropy, Complexity and Spatial Dynamics (Edward Elgar 2018)

G. Haag, K. Müller: Kollektivverhalten in N. Braun, N.J. Saam (Hrsg.): Handbuch Modellbildung und Simulation in den Sozialwissenschaften (Springer 2014)

G. Haag, K. Grützmann: Die Entstehung von Konventionen in Handbuch der Evolutorischen Ökonomik, Bd. 2 (Springer, 2002)

G. Haag, K. Grützmann: Wanderungsdynamik in U. Mueller (Hrg.): Handbuch der Demographie 1 und 2 (Springer 2000)

## **Ausgewählte Veröffentlichungen und Projekte aus dem Bereich Migration, Wirtschaftsentwicklung, Demographie und Beschäftigung**

Veröffentlichungen im Bereich technischer Anwendungen und Patente sind nicht ausgewiesen

DAREFFORT: Danube River Basin Enhanced Flood Forecasting Coopeation. EU Community Initiative INTERREG III B (2018-2021)

RAIRDev: Regional Airports' Interaction for Regional Development. EU Community Initiative INTERREG III B CADSES (2006-2008)

SCATTER: Sprawling Cities and Transport: from Evaluation to Recommendations, European Commission, Key Action 4: City of Tomorrow and Cultural Heritage, EVK4-CT-2001-00063 RS (2005)

TRANSECON: Urban Transport and local Socio-Economic Development, European Commission, GMA1-2000-27049 (2004)

G. Haag, P. Liedl: Knowledge, Capital Formation and Innovation Behaviour in a Spatial Context, in: H. L. F. de Groot, P. Nijkamp, R. R. Stough (eds.): Entrepreneurship and Regional Economic Development (Edward Elgar Publishing, 2004)

S. Gayda, F. Boon, M. Batty, E. Besussi, N. Chin, G. Haag, J. Binder, K. Lautso, A. Martino, C. Noël, R. Dormois: The SCATTER project - Sprawling Cities and Transport: from Evaluation to Recommendations. Paper presented at the European Transport Conference 2003, Strasbourg, October 2003

J. Binder, G. Haag, G. Rabino: Analysis and Modelling of Commuter Flows - Application to the regions of Stuttgart and Turin, Jahrbuch für Regionalwissenschaften, 23, 117 – 139 (2003)

J. Binder, G. Haag, M. Koller: Modelling and Simulation of Migration, Regional Development and Regional Gross Wage Payment in Germany: The Bottom-up Approach, in: Uddevalla Symposium 2001, Regional Economies in Transition, 2002

G. Haag: New Frontier Concepts in Spatial and Social Sciences – Towards Nested Theories, in A. Reggiani (Ed.): Spatial Economic Science: New Frontiers in Theory and Methodology (Springer 2000)

G. Haag: Erprobung und Evaluierung von Modellen der Statistik und der Künstlichen Intelligenz als Instrumente zur Analyse des Mobilitätspansels, Pilotstudie, Bundesministerium für Verkehr, Bau und Stadtentwicklung (FE-Nr. 70.594/98). Vergleich zwischen statistisch-ökonomischen Panelmodellen und neuronalen Netzen (1999/2000)

G. Haag: Modellierung agglomerationsbedingter Einflüsse auf wegebauinduzierte Beförderungsprozesse für die Bundesverkehrswegeplanung (BVWP), Bundesministerium für Verkehr, Bau und Stadtentwicklung (FE-Nr. 96546/98)

EUROSIL, European Strategic Intermodal Links, EU-Projekt. Entwicklung, Anwendung und Bewertung von Modellen zur Beschreibung von Modal-Split, "Intermodality", "Interoperability" und "Multimodality" (1997/98)

G. Haag, T. Hagel, T. Sigg: Active Stabilization of a Chaotic Urban System, Discrete Dynamics in Nature and Society, Vol. 1, 127-134 (1997)

J. Holyst, T. Hagel, G. Haag: Destructive Role of Competition and Noise for Control of Micro economical Chaos, in Chaos, Solitons and Fractals, 8, 9, 1489 - 1505 (1997)

J. Holyst, T. Hagel, G. Haag: Competition and Control in a Chaotic Micro economical Model, Journal of Technical Physics, 38, 2, 385 - 388 (1997)

G. Haag: Kann man Chaos kontrollieren? in G.K. Küppers (Hrg.): Über den Wandel eines wissenschaftlichen Weltbilds (Reklam, 1996)

J.A. Holyst, T. Hagel, G. Haag, W. Weidlich: How to Control a Chaotic Economy, Journal of Evolutionary Economics, 6, 31-42 (1996)

K. Brandt, G. Haag: Frequency Dependence and its Significance for Regional Science, Schriften des Vereins für Sozialpolitik, Gesellschaft für Wirtschafts- und Sozialwissenschaften, Band 195/III, Studien zur Evolutorischen Ökonomik III (1995)

J. Holyst, T. Hagel, G. Haag: Competition and Control in a Chaotic Microeconomical Model, in Proceedings of the International Conference on Nonlinear Dynamics, Chaotic and Complex Systems (Zakopane, Poland, 1995)

G. Haag, A. Wagner, K. Brandt: Towards Evolutionary Spatial Economics, in Proceedings of the "International Conference on Complexity and Self-Organisation in Socioeconomic Systems", Beijing (Springer, 1995)

K. Brandt, G. Haag: Modelling and Simulation of Regional Dynamic Processes in the Economy, Journal of Regional Science (1994)

G. Haag, H. Max: Rank-Size-Distribution of Settlement Systems: A Stable Attractor in Urban Growth, Papers of the Regional Science Association (1994)

G. Haag, K. Grützmann: A New Theory of Nested Decision Processes with Memory Effects, Papers in Regional Science, 72, 3, 313-335 (1993)

G. Haag, M. Hilliges, K. Teichmann: Towards a Dynamic Disequilibrium Theory of Economy, in P. Nijkamp, A. Reggiani (eds.): Nonlinear Evolution of Spatial Economic Systems (Springer, 1993)

G. Haag: The Rank-Size-Distribution of Settlements as a Dynamic Multifractal Phenomenon, Chaos, Solitons and Fractals (1993)

G. Haag, M. Munz, D. Pumain, L. Sanders, Th. Saint-Julien: Inter-Urban Migration and the Dynamics of a System of Cities. Part 1: The Stochastic Framework with an Application to the French Urban System, Environment and Planning A, 24, 181-198 (1992)

G. Haag: Organisation und Synergetik, Newsletter der Deutschen Gesellschaft für Systemforschung 3, 1, 4-7 (1992)

G. Haag: Chaotic Behaviour in Spatial Systems and Forecasting, Revue d'Economie Régionale et Urbaine, 5, 735-751 (1992)

G. Haag, S. Lombardo: Innovation in Information Technology and Spatial Organization of Urban Systems, Sistemi Urbani, 1-2-3, 109-124 (1991)

D. Pumain, G. Haag: Urban and Regional Dynamics - Towards an Integrated Approach, Environment and Planning A, 23, 1301-1313 (1991)

G. Mensch, G. Haag, and W. Weidlich: The Schumpeter Clock. A Micro-Macro Model of Economic Change, Including Innovation, Strategic Investment, Dynamic Competition, and Short and Long Swings in Industrial Transformation. Applied to United States and German Data, in OECD: Technology and Productivity, The Challenge for Economic Policy (OECD Publication Service, 1991)

G. Haag: Towards an Integrated Urban Model, in D. Pumain (ed.): Spatial Analysis and Population Dynamics (John Libbey Eurotext, 1991)

G. Haag: A Master Equation Formulation of Aggregate and Disaggregate Economic Decision Making, Sistemi Urbani, 1, 65-81 (1990)

G. Haag: Housing - A Master Equation Approach, and Services - A Master Equation Approach, and Labor Market, A Master Equation Approach for Labour Mobility, in C.S. Bertuglia, G. Leonardi, A.G. Wilson (eds.): Urban Systems: Design for an Integrated Dynamic Model (Routledge, 1990)

G. Haag: Die Beschreibung sozialwissenschaftlicher Systeme mit der Master Gleichung, in Ökonomie und Gesellschaft, Jahrbuch 8: Individuelles Verhalten und kollektive Phänomene (Campus, 1990)

G. Haag, S. Lombardo: Information Technologies and Spatial Organization of Urban Systems: A Dynamic Simulation Model, in Proceedings of MOSES: "Models of Selforganization in Complex Systems", Berlin, 5.-8. November, 1990 (Academie Verlag, Vol.64)

G. Haag, P. Frankhauser: A Stochastic Model of Intraurban Supply and Demand Structures, in J.Hauer et. al. (eds): Urban Dynamics and Spatial Choice Behaviour, 219 – 246 (Kluwer, 1989)

G. Haag: Spatial Interaction Models and their Micro-Foundations, in A. Andersson, D. Batten, B. Johansson and P. Nijkamp (eds.): Advances in Spatial Theory and Dynamics (North Holland, 1989)

M.M. Fischer, G. Haag, M. Sonis, W. Weidlich: Account of Different Views in Dynamic Choice Processes, in Proceedings of the Symposium of the IGU-Working Group on Mathematical Models, Canberra (1988)

G. Haag, P. Wunderle: Quality Improvement and Self-Reinforcing Mechanisms in Economy, Proceedings of the 13. Symposium on Operations Research, Paderborn (1988)

W. Weidlich, G. Haag: A Dynamic Phase Transition Model for Spatial Agglomeration Processes, Journal of Regional Science, 27, 529-569 (1987)

G. Mensch, W. Weidlich, G. Haag: Outline of a formal Theory of Long-Term Economic Cycles, in T. Vasko (ed): The Long-Wave Debate, Selected Papers (Springer, Berlin, Heidelberg, New York 1987)

G. Haag, W. Weidlich, G. Mensch: The Schumpeter Clock, Proc. of Invited Sessions on Economic Evolution and Structural Change, 5th International Conference on Mathematical Modelling at the University of California, Berkeley, USA, July 29-31. (1985), Lecture Notes in Economics and Mathematical Systems, 293 (Springer, Berlin, Heidelberg, New York, 1987)

R. Reiner, M. Munz, G. Haag, W. Weidlich: Chaotic Evolution of Migratory Systems, Sistemi Urbani, 2/3, 285-308 (1986)

G. Haag: A Stochastic Theory on Sudden Urban Growth, Konzepte SFB 230, Heft 25, 255-271 (1986)

G. Haag, W. Weidlich: A Dynamic Migration Theory and its Evaluation for Concrete Systems, Regional Science and Urban Economics, 16, 57-80 (1986)

W. Weidlich, G. Haag: Stochastic Migration Theory and Migratory Phase Transitions, in D.A. Griffith and R.P. Haining (eds.): Transformations Through Space and Time, NATO ASI Series D, 29 (Martinus Nijhoff, 1986)

G. Haag: A Stochastic Theory for Residential and Labour Mobility including Travel Networks, in P.Nijkamp (ed.): Technological Change, Employment and Spatial Dynamics, Lecture Notes in Economics and Mathematical Systems, 270 (Springer, Berlin, Heidelberg, New York 1986)

G. Haag, A.G. Wilson: A Dynamic Service Sector Model - A Master Equation's Approach with Prices and Land Rents, Working Paper 447, University of Leeds (1986)

G. Haag: The Macroeconomic Potential, in G. Bianchi, T. Vasko, J. Delbeke, G. Bruckmann (eds.): Long Waves Depression and Innovation: Implications for National and Regional Economic Policy, Proc. of the Siena/Florenz Meeting (26-30 Oct. 1983), Collaborative Paper, CP-85-9, Laxenburg (1985)

G. Haag, W. Weidlich, G. Mensch: A Macroeconomic Potential Describing Structural Change of the Economy, Theory and Decision, 19, 279-299 (1985)

G. Haag, W. Weidlich: Model Construction in Dynamic Spatial Theory, Proceedings of the Task Force Meeting in Dynamic Analysis of Spatial Development, IIASA, Laxenburg, Oct. 29-31 (1984)

D.S. Dendrinos, G. Haag: Towards a Stochastic Theory of Location: Empirical Evidence, Geographical Analysis, 16, 287-300 (1984)

G. Haag, W. Weidlich: A Stochastic Theory of Interregional Migration, Geographical Analysis 16, 331-357 (1984)

G. Mensch, W. Weidlich, G. Haag: Short-Term Fluctuations in Industry, Working Paper No. 58, Weatherhead School of Management, Case University, Cleveland, Ohio (1983)

G. Haag, W. Weidlich: A Nonlinear Dynamic Model for the Migration of Human Populations, in D.A. Griffith, A.C. Lea (eds.): Evolving Geographical Structures, NATO ASI Series D, 15, 24 (1983)

G. Haag, W. Weidlich: An Evaluable Theory for a Class of Migration Problems, Collaborative Paper, CP-83-58, IIASA, Laxenburg (1983)

G. Haag, D.S. Dendrinos: Towards a Stochastic Theory of Location: A Nonlinear Migration Process, Geographical Analysis, 15, 269-286 (1983)

W. Weidlich, G. Haag: Migration of Mixed Population in a Town, Collective Phenomena, 3, 89 (1980)

W. Weidlich, G. Haag: Dynamics of Interacting Groups with Application to the Migration of Populations, Lect. and Tutorials, Bd. 11, Oldenburg Verlag München (1980)

G. Haag, P. Hänggi: Continued Fraction Solutions of Discrete Master Equations not Obeying Detailed Balance, Z. Physik B 39, 269-279 (1980)

G. Haag, P. Hänggi: Exact Solution of Discrete Master Equations in Terms of Continued Fractions, Z. Physik B 34, 411-417 (1979)

G. Haag: Transition Factor Method for Discrete Master Equations and Application to Chemical Reactions, Z. Physik B 29, 153-159 (1978)

G. Haag, W. Weidlich, P. Alber: Approximation Methods for Stationary Master Equations, Z. Physik B 26, 207-215 (1977)