

1. Record Nr.	UNINA9910136949203321
Autore	Wilson Alan
Titolo	Global dynamics : approaches from complexity science // edited by Alan Wilson
Pubbl/distr/stampa	Chichester, West Sussex, England : , : Wiley, , 2016 ©2016
ISBN	1-118-93747-3
Edizione	[First edition]
Descrizione fisica	1 online resource (407 pages)
Collana	Wiley Series in Computational and Quantitative Social Science. THEi Wiley ebooks.
Disciplina	910/.01511352
Soggetti	Geography - Mathematical models International trade - Mathematical models Emigration and immigration - Mathematical models
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references at the end of each chapters and index.
Nota di contenuto	Title Page; Copyright; Table of Contents; Notes on Contributors; Acknowledgements; Part One: Global Dynamics and the Tools of Complexity Science; Chapter 1: Global Dynamics and the Tools of Complexity Science; Reference; Part Two: Trade and Economic Development; Chapter 2: The Global Trade System and Its Evolution; 2.1 The Evolution of the Shipping and Ports' System; 2.2 Analyses of the Cargo Ship Network; 2.3 A Complex Adaptive Systems (CASs) Perspective; 2.4 Conclusions: The Benefits of a Systems Perspective; References; Appendix A.1 Complexity Science and Complex Adaptive Systems: Key Characteristics Chapter 3: An Interdependent Multi-layer Model for Trade; 3.1 Introduction; 3.2 The Interdependent Multi-layer Model: Vertical Integration; 3.3 Model Layers; 3.4 The Workings of the Model; 3.5 Model Calibration; 3.6 Result 1: Steady State; 3.7 Result 2: Estimation and Propagation of Shocks in the IMM; 3.8 Discussion and Conclusions; References; Chapter 4: A Global Inter-country Economic Model Based on Linked Input-Output Models; 4.1 Introduction; 4.2 Existing Global Economic Models; 4.3 Description of the Model

4.4 Solving the Model 4.5 Analysis; 4.6 Conclusions; Acknowledgements; References; Appendix; A.1 Modelling the 'Rest of the World'; A.2 Services Trade Data; Part Three: Migration; Chapter 5: Global Migration Modelling: A Review of Key Policy Needs and Research Centres; 5.1 Introduction; 5.2 Policy and Migration Research; 5.3 Conclusion; References; Appendix; A.1 United Kingdom; A.2 Rest of Europe; A.3 Rest of the World; Chapter 6: Estimating Inter-regional Migration in Europe; 6.1 Introduction; 6.2 The Spatial System and the Modelling Challenge; 6.3 Biproportional Fitting Modelling Methodology 6.4 Model Parameter Calibration 6.5 Model Experiments; 6.6 Results; 6.7 Conclusions and Comments on the New Framework for Estimating Inter-regional, Inter-country Migration Flows in Europe; References; Chapter 7: Estimating an Annual Time Series of Global Migration Flows - An Alternative Methodology for Using Migrant Stock Data; 7.1 Introduction; 7.2 Methodology; 7.3 Results and Validation; 7.4 Discussion; 7.5 Conclusions; References; Part Four: Security; Chapter 8: Conflict Modelling: Spatial Interaction as Threat; 8.1 Introduction; 8.2 Conflict Intensity: Space-Time Patterning of Events 8.3 Understanding Conflict Onset: Simulation-based Models 8.4 Forecasting Global Conflict Hotspots; 8.5 A Spatial Model of Threat; 8.6 Discussion: The Use of a Spatial Threat Measure in Models of Conflict; References; Chapter 9: Riots; 9.1 Introduction; 9.2 The 2011 Riots in London; 9.3 Data-Driven Modelling of Riot Diffusion; 9.4 Statistical Modelling of Target Choice; 9.5 A Generative Model of the Riots; 9.6 Discussion; References; Chapter 10: Rebellions; 10.1 Introduction; 10.2 Data; 10.3 Hawkes model; 10.4 Results; 10.5 Discussion; References Chapter 11: Spatial Interaction as Threat: Modelling Maritime Piracy

Sommario/riassunto

A world model: economies, trade, migration, security and development aid. This book provides the analytical capability to understand and explore the dynamics of globalisation. It is anchored in economic input-output models of over 200 countries and their relationships through trade, migration, security and development aid. The tools of complexity science are brought to bear and mathematical and computer models are developed both for the elements and for an integrated whole. Models are developed at a variety of scales ranging from the global and international trade through a European model of inter-sub-regional migration to piracy in the Gulf and the London riots of 2011. The models embrace the changing technology of international shipping, the impacts of migration on economic development along with changing patterns of military expenditure and development aid. A unique contribution is the level of spatial disaggregation which presents each of 200+ countries and their mutual interdependencies – along with some finer scale analyses of cities and regions. This is the first global model which offers this depth of detail with fully work-out models, these provide tools for policy making at national, European and global scales. Global dynamics: Presents in depth models of global dynamics. Provides a world economic model of 200+ countries and their interactions through trade, migration, security and development aid. Provides pointers to the deployment of analytical capability through modelling in policy development. Features a variety of models that constitute a formidable toolkit for analysis and policy development. Offers a demonstration of the practicalities of complexity science concepts. This book is for practitioners and policy analysts as well as those interested in mathematical model building and complexity science as well as advanced undergraduate and postgraduate level students.
