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Version: Supplemental Material

| | Real-time flood emergency management | | | Study area |
|---|---|---|---|---|
| Flood exposure assessment | 2011 | Dawson, et al. | An agent-based model for risk-based flood incident management | UK |
| | 2016 | Bhamidipati, et al. | A layered approach to model interconnected infrastructure and its significance for asset management | Netherlands |
| | 2018 | Yang, et al. | Assessment of Flood Losses with Household Responses: Agent-Based Simulation in an Urban Catchment Area | China |
| | 2019 | Zhu, et al. | Modeling the high-resolution dynamic exposure to flooding in a city region | China |
| | 2020 | Dai, et al. | A hazard-human coupled model (HazardCM) to assess city dynamic exposure to rainfall-triggered natural hazards | China |
| Flood evacuations and emergency management | 2016 | Liu and Lim | Integration of spatial analysis and an agent-based model into evacuation management for shelter assignment and routing | Australia |
| | 2016 | Wang and Zlatanova | Multi-agent based path planning for first responders among moving obstacles | Netherlands |
| | 2017 | Higo, et al. | Cooperative survival principles for underground flooding: Vitae System based multi-agent simulation | Japan |
| | 2017 | Solis and Gazmuri | Evaluation of the risk and the evacuation policy in the case of a tsunami in the city of Iquique, Chile | Chile |
| | 2018 | Lumbroso and Davison | Use of an agent-based model and Monte Carlo analysis to estimate the effectiveness of emergency management interventions to reduce loss of life during extreme floods | UK |
| | 2018 | Liu and Lim | An agent-based evacuation model for the 2011 Brisbane City-scale riverine flood | Australia |
| | 2018 | Inan, et al. | Agent-Based Knowledge Analysis Framework in Disaster Management | Australia |
| | 2019 | Li, et al. | Flood evacuation simulations using cellular automata and multiagent systems -a human-environment relationship perspective | China |
| | 2019 | Yamamoto and Takizawa | Partitioning Vertical Evacuation Areas in Umeda Underground Mall to Minimize the Evacuation Completion Time | Japan |
| | 2019 | Nakanishi and Suenaga | Investigating the flood evacuation behaviour of older people: A case study of a rural town in Japan | Japan |
| | 2019 | Eivazy and Malek | Flood Management in Aqala through an Agent-Based Solution and Crowdsourcing Services in an Enterprise Geospatial Information System | Iran |
| | 2019 | Ghavami, et al. | A multi-agent assisted approach for spatial Group Decision Support Systems: A case study of disaster management practice | Iran |
| | 2020 | Subasinghe, et al. | Real-time mapping of natural disasters using citizen update streams | USA |
| Flood warning system | 2017 | Du, et al. | Exploring the Role of Social Media and Individual Behaviors in Flood Evacuation Processes: An Agent-Based Modeling Approach | Synthetic scenes |
| | 2017 | Du, et al. | Impacts of Human Behavioral Heterogeneity on the Benefits of Probabilistic Flood Warnings: An Agent-Based Modeling Framework | Synthetic scenes |
| Interaction of transportation-flood systems | 2013 | Zidi, et al. | Distributed Genetic Algorithm for Disaster Relief Planning | Synthetic scenes |
| | 2018 | Zhu, et al. | Indirect Damage of Urban Flooding: Investigation of Flood-Induced Traffic Congestion Using Dynamic Modeling | China |
| | 2018 | Saadi, et al. | Investigating the impact of river floods on travel demand based on an agent-based modeling approach: The case of Liege, Belgium | Belgium |
| | 2019 | Suh, et al. | Transportation Infrastructure Protection Planning against Sea Level Rise: Analysis Using Operational Landscape Units | USA |
| | 2019 | Pyatkova, et al. | Assessing the knock-on effects of flooding on road transportation | Spain |
| | Long-term flood adaptation planning | | | |
| Sustainable Drainage Systems (SUDS), property level protection measures and flood insurance scheme | 2017 | Jenkins, et al. | Assessing surface water flood risk and management strategies under future climate change: Insights from an Agent-Based Model | UK |
| | 2017 | Dubbelboer, et al. | An Agent-Based Model of Flood Risk and Insurance | UK |
| | 2018 | Crick, et al. | Strengthening insurance partnerships in the face of climate change - Insights from an agent-based model of flood insurance in the UK | UK |
| Flood adaptation investment | 2014 | O'Connell and O'Donnell | Towards modelling flood protection investment as a coupled human and natural system | UK |
| Water drainage system and urban planning policies | 2017 | Lowe, et al. | Assessment of urban pluvial flood risk and efficiency of adaptation options through simulations - A new generation of urban planning tools | Australia |
| Households' risk perception, insurance policies, and local flood mitigation measures | 2018 | Magliocca and Walls | The role of subjective risk perceptions in shaping coastal development dynamics | USA |
| | 2019 | Han and Peng | The integration of local government, residents, and insurance in coastal adaptation: An agent-based modeling approach | USA |
| Flood prevention measures | 2017 | Becu, et al. | Participatory simulation to foster social learning on coastal flooding prevention | France |
| Land development | 2009 | Fontaine and Rounsevell | An agent-based approach to model future residential pressure on a regional landscape | UK |
| | 2017 | Tesfatsion, et al. | An agent-based platform for the study of watersheds as coupled natural and human systems | USA |
| | 2018 | Mustafa, et al. | Effects of spatial planning on future flood risks in urban environments | Belgium |
| Integrated micro- (e.g., household) and macro (government) systems | 2017 | Berger, et al. | Can smallholder farmers adapt to climate variability, and how effective are policy interventions? Agent-based simulation results for Ethiopia | Ethiopia |
| | 2019 | Haer, et al. | Advancing disaster policies by integrating dynamic adaptive behaviour in risk assessments using an agent-based modelling approach | European Union |
| | 2019 | Abebe, et al. | Flood risk management in Sint Maarten - A coupled agent-based and flood modelling method | Netherlands |
| | 2019 | Abebe, et al. | A coupled flood-agent-institution modelling (CLAIM) framework for urban flood risk management | Netherlands |
| Different adaptive behaviours | 2005 | Valkering, et al. | Simulating stakeholder support in a policy process: An application to river management | Netherlands |
| | 2016 | Dressler, et al. | Towards thresholds of disaster management performance under demographic change: exploring functional relationships using agent-based modeling | Germany |
| | 2018 | Erdlenbruch and Bonte | Simulating the dynamics of individual adaptation to floods | France |
| | 2019 | Coates, et al. | Agent-based modeling and simulation to assess flood preparedness and recovery of manufacturing small and medium-sized enterprises | UK |
| | 2019 | Baeza, et al. | Operationalizing the feedback between institutional decision-making, socio-political infrastructure, and environmental risk in urban vulnerability analysis | Mexico |
| Community flood risks - policies and individual decisions | 2018 | Tonn and Guikema | An Agent-Based Model of Evolving Community Flood Risk | USA |
| | 2020 | Tonn, et al. | Simulating Behavioral Influences on Community Flood Risk under Future Climate Scenarios | USA |
| Risk communications | 2016 | Haer, et al. | The effectiveness of flood risk communication strategies and the influence of social networks-Insights from an agent-based model | Netherlands |
| | 2017 | Haer, et al. | Integrating Household Risk Mitigation Behavior in Flood Risk Analysis: An Agent-Based Model Approach | Netherlands |
| Hazard migration | 2012 | Hassani-Mahmooei and Parris | Climate change and internal migration patterns in Bangladesh: an agent-based model | Bangladesh |
| | 2014 | Naqvi and Rehm | A multi-agent model of a low income economy: simulating the distributional effects of natural disasters | Pakistan |
| | 2017 | Husby and Koks | Household migration in disaster impact analysis: incorporating behavioural responses to risk | Synthetic scenes |
| Flood impacts on local economics | 2009 | Filatova, et al. | Land Market Interactions between Heterogeneous Agents in a Heterogeneous Landscape-Tracing the Macro-Scale Effects of Individual Trade-Offs between Environmental Amenities and Disamenities | Netherlands |
| | 2018 | Walls, et al. | Modeling coastal land and housing markets: Understanding the competing influences of amenities and storm risks | USA |
| | 2020 | Chandra-Putra and Andrews | An integrated model of real estate market responses to coastal flooding | USA |
| Used as a educational tool | 2018 | Taillandier and Adam | Games Ready to Use: A Serious Game for Teaching Natural Risk Management | France |
| | 2018 | Shelton, et al. | Managing household socio-hydrological risk in Mexico city: A game to communicate and validate computational modeling with stakeholders | Mexico |
| | 2018 | Dare, et al. | Problemshed or Watershed? Participatory Modeling towards IWRM in North Ghana | Ghana |
| | Hydrological modelling | | | |
| Mapping runoff source and flow paths | 2008 | Reaney | The use of agent based modelling techniques in hydrology: determining the spatial and temporal origin of channel flow in semi-arid catchments | Spain |
| Drainage flow path | 2014 | Sanchez, et al. | An integrated cellular automata evolutionary-based approach for evaluating future scenarios and the expansion of urban drainage networks | UK |
| Manage drainage system | 2017 | Garofalo, et al. | A distributed real-time approach for mitigating CSO and flooding in urban drainage systems | Italy |