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managing resources of a limited planet

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Managing Resources of a Limited Planet

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Carolina Massmann, Hubert Holzmann
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Jiri Nossent and Willy Bauwens
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Ch. Fischer, S. Kralisch, P. Krause, W.A. Flügel
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D2. Distributed environmental modelling

Organizers: Ari Jolma, Karl Aberer, Phillip C. Dibner, Kostas Karatzas, Mike Sips

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Lubos Matejcek
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Patrick Maué, Marcell Roth
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Exploration of spatial and temporal signatures in multiple components of a Geodetic Earth System Model
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Fusion of Environmental Information for the Delivery of Orchestrated Services for the Atmospheric Environment in the PESCaDO project
Victor Epitropou, Lasse Johansson, Kostas D. Karatzas, Anastasios Bassoukos, Ari Karppinen, Jaakko Kukkonen, Mervi Haakana
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Eco Evidence Database: a distributed modelling resource for systematic literature analysis in environmental science and management
J. Angus Webb, Siobhan C. de Little, Kimberly A. Miller, Michael J. Stewardson
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D3.1 Advances in software engineering for IEM - methods and approaches
Organizers: Olaf David, Sven Kralisch, James C. Ascough II, Peter Krause

Classification of Quality Attributes For Software Systems in the Domain of Integrated Environmental Modelling
Naeem Muhammad, Stijn Van Hoey, Piet Seuntjens, Wesley Boenne
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Tushar Gupta, Richard Jones, Lucy Bastin and Dan Cornford
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Model representation, parameter calibration and parallel computing - the JAMS approach
Sven Kralisch and Christian Fischer
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Enhancing Model Reuse via Component-Centered Modeling Frameworks: the Vision and Example Realizations

Marcello Donatelli, Iacopo Cerrani, Davide Fanchini, Davide Fumagalli, Andrea Emilio Rizzoli
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Comparing Modelling Solutions At Submodel Level: A Case On Soil Temperature Simulation

Simone Bregaglio, Marcello Donatelli, Roberto Confalonieri, Marco Acutis
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Olaf David, Wesley Lloyd, James C. Ascough II, Timothy R. Green, Kevin Olson, George H. Leavesley, Jack Carlson
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The Cloud Services Innovation Platform - Enabling Service-Based Environmental Modelling Using Infrastructure-as-a-Service Cloud Computing

W. Lloyd, O. David, J.C. Ascough II, T.R. Green, J.R. Carlson
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Vanessa Watson, Kym Watson
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A Multi-Approach Framework to Couple Independent Models for Simulating the Interaction between Crop Growth and Unsaturated-Saturated Flow Processes

S. Peña-Haro, J. Zhou, G.F. Zhang, C. Chen, F. Stauffer, W. Kinzelbach
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D3.2 Advances in software engineering for IEM - applications and use cases

Organizers: Olaf David, Sven Kralisch, James C. Ascough II, Peter Krause

Parallel implementation to support large spatial simulations

R. Wieland, W. Mirschel and D. Deumlich
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Karsten Rink, Lars Bilke, Benny Selle and Olaf Kolditz
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Coupling the ExtendSim platform with HEC-HMS for modeling irrigation strategies
M. Lample, D. Bailly, J. Ballé-Béganton
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Daniel Waldmann, Markus Muerth, Wolfram Mauser
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Jean-Michel Perraud, Biao Wang, Jai Vaze
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Gaofeng Zhang, Jian Zhou, Qingguo Zhou, Guodong Cheng, Xin Li
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G. Formetta, A. Antonello, S. Franceschi, O. David and R. Rigon
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D4. Characterising environmental modelling paradigms (Bayesian networks, system dynamics, agent based models, coupled complex models and expert systems)

Organizers: Tony Jakeman, Olivier Barreteau, Mark Borsuk, Carlo Giupponi, Rebecca Kelly, Andrea Rizzoli, Barbara Robson, Sondoss El Sawah, Alexey Voinov

Agent-based Modelling in the Agricultural Economics Tradition of Recursive Farm Modelling and Adaptive Micro-Systems
Thomas Berger, Christian Troost
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Water Quality Assessment in the Venice Lagoon Watershed with Multiple Modelling Approaches
Carlo Giupponi, Arianna Azzellino, Roberta Salvetti, Paolo Parati, Marta Carpani
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Modelling the spread of an invasive crayfish population with fuzzy cellular automata
S. Marsili-Libelli, E. Giusti, F. Gherardi
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M.D. Gerst, P. Ding, R.B. Howarth, M.E. Borsuk
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Thomas Murphy

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Integration of Bayesian inference techniques with mathematical modelling

George B. Arhonditsis

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Using system dynamics for environmental modelling: Lessons learnt from six case studies

Sondoss ElSawah, Dagmar Haase, Hedwig van Delden, Suzanne Pierce, Amgad ElMahdi, Alexey A. Voinov, Anthony J. Jakeman

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D6. Geographic Information Systems and geoprocessing workflows for environmental modelling

Organizers: Daniel P. Ames, Robert Argent, Susan Cuddy, Nigel W.T. Quinn, Raul Zurita-Milla

GIS-based procedure for evaluation of performances of the Italian atmospheric modelling system simulated data versus observed measurements

Antonio Piersanti, Gaia Righini, Giuseppe Cremona, Luisella Ciancarella, Irene Cionni, Massimo D'Isidoro, Mihaela Mircea, Lina Vitali

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Automatic modelling and continuous map generation from georeferenced species census data in an interoperable GIS environment

Lluís Pesquer, Ester Prat, Ricardo Díaz-Delgado, Joan Masó, Javier Bustamante and Xavier Pons

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Breathing new life into legacy integrated surface groundwater models using GIS-based adaptive mesh, hydrology refinement and data mapping tools

Nigel W.T. Quinn, Thomas J. Heinzer, M. Diane Williams

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A Logic-based Model for uncertainty reduction: parallel processing

Omar Doukari, Robert Jeansoulin

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Steve Kopp, Dean Djokic, Nawajish Noman

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Developing a GIS-based Spatial Decision Support System for Automated Tree Crop Management to Optimize Irrigation Inputs

Aviva Peeters, Alon Ben-Gal, Amots Hetzroni and Manuela Zude

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Lubos Matejcek, Rudolf Pribil

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Raul Zurita-Milla, Connie Blok, and Vasilios Retsios
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Lale Balas, Asli Numanoglu Genç and Asu Inan
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A. Taliun, M. Böhlen, A. Bracher and F. Cafagna
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Cuitlahuac Hernandez-Santiago, Martin Volk
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Morten Fuglsang, Bernd Münier, Henning Sten Hansen
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Michael Schulz, Jon Olav Skøien, Lydia Gerharz, Grégoire Dubois, Edzer Pebesma
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Yang Cao and Daniel P. Ames
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Tiffany C. Vance and Kyle Wilcox
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The AgESGUI Geospatial Simulation System for Environmental Model Application and Evaluation
James C. Ascough II, Olaf David, Shilpa V. Murthy
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An Extensible Inverse Modeling Software Architecture for Parameter Distribution Estimation
Carlos Osorio, Matthew Over, Daniel P. Ames, Yoram Rubin
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The Demeter Framework for Model and Data Interoperability
Eric Fritzingler, Sergiu M. Dascalu, Daniel P. Ames, Karl Benedict, Ivan Gibbs, Michael J. McMahon, Jr.,
Frederick C. Harris, Jr.
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D7. Third session on data mining as a tool for environmental scientists (S-DMTES-2012)

Organizers: Karina Gibert, Miquel Sanchez Marre, Joaquin Izquierdo, Ignasi Rodriguez-Roda, Geoff Holmes, Serena Chen, Antonio Ciampi, Ioannis Athanasiadis

An approach based on ranking elements to form supply clusters in water supply networks as a support to vulnerability assessment
J.A. Gutiérrez-Pérez, M. Herrera, J. Izquierdo, R. Pérez-García
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A multi-level spectral clustering process to ascertain sensor location for mitigating effects of a potential contamination in a water supply network
M. Herrera a, J.A. Gutiérrez-Pérez, J. Izquierdo, and R. Pérez-García
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Markov-based approaches to support policies makers in environment and healthcare
Antonio Candelieri, Francesco Archetti, Ilaria Giordani, Gaia Arosio
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Assessing variation in biofilms development in a drinking water distribution system by an object oriented Bayesian network approach
E. Ramos-Martínez, M. Herrera, J. Izquierdo, R. Pérez-García
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An application of data mining to fruit and vegetable sample identification using Gas Chromatography-Mass Spectrometry
G. Holmes, D. Fletcher and P. Reutemann
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Knowledge Discovery for Biodiversity: from Data Mining to Sign Management
Noel Conruyt, David Grosser, Régine Vignes Lebbe
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A picture on Environmental Data Mining Real Applications. What is done and how?
Karina Gibert, Miquel Sànchez Marrè
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A method for comparing data splitting approaches for developing hydrological ANN models
Wenyan Wu, Robert May, Graeme C. Dandy and Holger R. Maier
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D8. Comparison of and guidelines for environmental modelling paradigms

Organizers: Tony Jakeman, Olivier Barreteau, Mark Borsuk, Andrea Rizzoli, Alexey Voinov

Bioeconomic modelling: Integrating economic and environmental systems?
Marit E. Kragt
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D11. Ecological modelling and networks

Organizers: Brian Fath, Caner Kazanci, Ursula Scharler

Modelling of ecosystem with different types of components aggregation
Evgeniya Giricheva
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Oksana Zhdanova and Efim Frisman
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Oksana Zhdanova, Alexander Abakumov
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Mathematical model for number dynamics of populations with varying reproductive age
Galina Neverova, Efim Frisman
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Matvey Kulakov, Oksana Revutskaya, Efim Frisman
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Oksana Revutskaya, Efim Frisman
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A Stochastic Trout Population Model for Supporting Fish Management
C. Siegenthaler-Le Drian, L. Indermaur, A. Peter and P. Reichert
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Ecological Flow Analysis of Network Collapse I: New methodology to investigate network collapse dynamics

Brian D. Fath, Elena Rovenskaya, Victoria Veschinskaya, Ulf Dieckmann, Ake Brannström
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Ecological Flow Analysis of Network Collapse II: Indicators of ecosystem level vulnerability
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Ursula M. Scharler, Brian D. Fath

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Automatic population counts for improved wildlife management using aerial photography

B. Sirmacek, M. Wegmann, A.D.P. Cross, J.G.C. Hopcraft, P. Reinartz and S. Decha

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Blueprint for a unifying framework for synthesis of aquatic ecodynamics

Matthew R. Hipsey, David P. Hamilton, Paul C. Hanson, Justin D. Brookes, Dennis Trolle, Louise C. Bruce

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D12. First joint workshop on data mining and intelligent decision support systems for environmental scientists (IV W-DMTES-2012 and IEDSS-2012)

Organizers: Karina Gibert, Joaquin Izquierdo, Miquel Sànchez-Marrè, Ignasi Rodriguez-Roda, Rick Sojda, Geoff Holmes, Antonio Ciampi, Ioannis Athanasiadis, Joaquim Comas

Tools for Environmental Data Mining and Intelligent Decision Support

Karina Gibert, Miquel Sànchez-Marrè, Beatriz Sevilla

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Organizers: Johannes Halbe, Dominik Reusser, Claudia Pahl-Wostl, Jan Sendzimir

A concept for the development of model indicators for policy makers to adapt German inland waters to climate change

Annette Stosius, Sebastian Kofalk, Michael Schleuter

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Marjolijn Haasnoot, Willem P.A. van Deursen, Hans Middelkoop, Eelco van Beek, Nanda Wijermans

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Kristine Hammel, Thorsten Arnold
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Örjan Svane, Per Lundqvist, Josefin Wangel, Daniel K. Jonsson, Aleh Kliatsko
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Wibke Avenhaus, Dagmar Haase
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Jonathan Busch, David Dawson, Katy Roelich, Julia Steinberger, Philip Purnell
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Jan Kwakkel, Marjolijn Haasnoot
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E2. Understanding human-environment interactions through modelling and stakeholder participation

Organizers: Jörg Krywkow, Pieter Valkering, Francois Bousquet, Geeske Scholz, Alexey Voinov, Heleen Vreugdenhil

Modelling human-environment systems in transdisciplinary processes
R. Seidl, Q.B. Le
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Johanna Ballé-Béganton, Denis Bailly, Michel Lample, Rémi Mongruel, Jean Prou, Harold Réthoret, Cédric Bacher, José A. Pérez Agúndez, Alice Vanhoutte-Brunier, Julien Neveu
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Raffaele Giordano, Marcela Brugnach, Michele Vurro
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Eliciting farming decisions of smallholders in response to water availability conditions in Chingale, Southern Malawi
J. Krywkow, S. P. Kam, C. T. Hoanh and A. D. G. Chijere
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Developing and integrating a simulation model of water resources supply and demand within an on-going governance building process: a case study in Thau Catchment, South of France
Géraldine Abrami, Audrey Richard-Ferroudji, Sylvain Barone, Olivier Barreteau and Camille Tessier
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Wat-A-Game, a toolkit for building role-playing games about integrated water management
Geraldine Abrami, Nils Ferrand, Sylvie Morardet, Clément Murgue, Albena Popova, Heleen De Fooij, Stefano Farolfi, Derick Du Toit, Wanda Aquae-Gaudi
pp. 1912-1919

Modelling farmers' choice of miscanthus allocation in farmland: a case-based reasoning model
Laura Martin, Florence Le Ber, Julie Wohlfahrt, Géraldine Bocquého, Marc Benoît
pp. 1920-1927

Using a fuzzy-logic approach to model a reservoir and transfer system under climate change conditions

Josef Schmid, Ralf Ludwig, Markus Muerth
pp. 1928-1935

Bridging the gap between modellers and model users, why does this gap exist and what can we do about it?

Onno Roosenschoon, Stefan Reis, John Turnpenny, Camilla Adele, Klaus Jacob, Dirk Wascher, Sabine Weiland, Katharina Helming, Aranka Podhora, Jan-Erik Wien
pp. 1936-1943

Working together with managers to upgrade a tool for Integrated Coastal Zone Management of a Greek mussel-farming area

Zoi I. Konstantinou, Yannis N. Krestenitis
pp. 1944-1951

Transdisciplinary research for supporting environmental management

Meike Düspohl, Sina Frank, Tuck-Fatt Siew, Petra Döll
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Participatory Analysis of the Sustainability of Livelihoods in the Agro-ecosystem of Abesard, Iran
Hadi Veisi and Sahar Bagheri Toulabi

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Stream F – Resource Management and Sustainability

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F1. Land-use and land-cover modelling: dealing with complexity

Organizers: Daniel Rutledge, Guy Engelen, Alexander Herzig, Jean-Luc de Kok, Fraser Morgan, Brendan Williams

Land-use scenario modelling based on human decisions - Combining system dynamics and cellular automata

Steffen Lauf, Dagmar Haase, Birgit Kleinschmit
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Carsten Marohn, Pepijn Schreinemachers, Dang Viet Quang, Prakit Siripalangkanont, Simon Hörhold, Thomas Berger, Georg Cadisch
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Spatial-dynamic visualization of long-term scenarios for demographic, social-economic and environmental change in Flanders

Jean-Luc de Kok, Lien Poelmans, Guy Engelen, Inge Uljee, Leen van Esch
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Social Structure-Land Use-Water Flows: Modelling Relationships using Discrete Bayesian Networks

Rosa Fernández, Bárbara A. Willaarts, Antonio Fernández, Rafael Rumí, Pedro A. Aguilera
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Development of an Activity-based Cellular Automata Land-use Model: the case of Flanders, Belgium
Tomas Crols, Roger White, Inge Uljee, Guy Engelen, Frank Canters, Lien Poelmans
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Sensitivity of Spatially Explicit Land-use Logistic Regression Models to the Errors Land-use Change Maps
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The choice of crop rotations as an important model input - a case study from Saxony
Marco Lorenz, Enrico Thiel, Martin Schönhart
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Modelling land use change and its spatial variability for ecosystem services assessments
Marie Castellazzi, Iain Brown, Laura Poggio, Alessandro Gimona
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Land Systems Modelling: An Atomistic Approach to Improve Handling of Complexity in Land-use and Land-cover Change Modelling
Daniel T. Rutledge, Robbie Price, Alexander Herzig
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F2. Sustainability assessment: quantitative indicators, models and techniques

Organizers: Marina G. Erechtkoukova, Peter A. Khaiteer

Utilization of OpenMI for Calculation of Material Flows in the Tool for Sustainability Impact Assessment (ToSIA)
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Gunnar Dressler, Birgit Mueller, Karin Frank
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Maximilian Morio, Sebastian Schädler and Michael Finkel
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Developing a Composite Risk Index for Secondary Soil Salinization Based on the PSR Sustainability Framework
De Zhou, Zhulu Lin, Liming Liu
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An Integrated Modeling and Data Management Strategy for Cellulosic Biomass Production Decisions
Joshua Koch, David Muth, Kenneth Bryden
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F3. Simulating environmental change - quality, quantity and validation

Organizers: Jörg Priess, Subhashree Das, Christian Schweitzer

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Otto Richter and Wenkui He
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Land Use Change and Suitability Assessment in the Upper Blue Nile Basin Under Water Resources and Socio-economic Constraints: A Drive Towards a Decision Support System
Seleshi Yalew, Ermias Teferi, Ann van Griensven, Stefan Uhlenbrook, Marloes Mul, Johannes van der Kwast, Pieter van der Zaag
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An agent-based modelling approach to project future habitat suitability for Northern Spotted Owl in Central Oregon
Jennifer Koch, James M. Sulzman, John P. Bolte, Robert J. Pabst, Thomas A. Spies, Tim Sheehan, Keith A. Olsen, Jeffrey D. Kline
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Representation of environmental dynamics in models of socio-environmental systems
Joerg A. Priess and Christian Schweitzer
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J. Koch, F. Wimmer, R. Schaldach, J. Onigkeit, and C. Folberth
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Philipp Kraft, Edwin Haas, Steffen Klatt, Ralf Kiese, Klaus Butterbach-Bahl, Hans-Georg Frede, Lutz Breuer
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Assessing land-cover/land-use change and its impacts on surface water quality in the Ziarat Catchment, Golestan Province-Iran
Mojtaba Zamani, Amir Sadoddin, Arash Zare Garizi
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AgroEcoSystem-Watershed (AgES-W) Model Evaluation for Streamflow and Nitrogen/Sediment Dynamics on a Midwest Agricultural Watershed
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