Oral Programme

Tuesday 1 October 2019				
09:00-17:00	**Workshop 1: Network Analysis** Room: Paracelsus Hall – 2nd Floor 9 am - 5 pm	**Workshop 2: UNIGIS - Utilising GIS for ecological modelling** Room: Trakl Hall – 3rd Floor 11 am - 5 pm	**Workshop 3: Agent-Based modelling for theory development** Room: Doppler Hall – 4th floor 10 am - 5 pm	**Workshop 4: How dynamic energy budget theory can help your research** Room: Trapp Hall – 5th Floor 9 am - 1 pm
16:00-18:00	**Registration** Foyer 2 – 2nd Floor			
18:00-19:30	**Welcome drinks reception** Foyer 2 – 2nd Floor			
Wednesday 2 October 2019				
07:30-09:00	**Registration** Foyer 2 – 2nd Floor			
09:00-09:30	**Welcome and introductions** Europa Hall – 2nd Floor Gudrun Wallentin, Conference Host Brian Fath, ISEM General Secretary Tarzan Legović, ISEM President			
09:30-09:40	**ISEM Best Young Research Award announcement**			
09:40-10:20	**[KN01] Rupert Seidl,** *University of Natural Resources and Life Sciences, Austria* Modeling natural disturbances Europa Hall – 2nd Floor			
10:20-10:50	**Refreshment Break** Exhibition foyer – 1st Floor			
10:50-12:30	**Symposium 1: Modelling integrated systems** Europa Hall – 2nd Floor	**Symposium 2: Spatial simulation - Individual-based models** Karajan Hall 1 – 1st Floor	**Symposium 3: Emergy and Environmental Accounting Models** Karajan Hall 2 – 1st Floor	**Symposium 4: Dynamics of social-ecological systems** Karajan Hall 3 – 1st Floor	**Symposium 5: Spatiotemporal Methods for Aquatic Systems** Wolf Dietrich Hall 1 – 1st Floor
	Chair: Hsiao-Hsuan (Rose) Wang	**Chair: Gudrun Wallentin**	**Chair: Pier Paolo Franzese**	**Chair: Martin Schultze**	**Chair: Elizabeth Duskey**
10:50-11:10	**[O1.01] Some reflections on integrated (physical-ecological-social) modelling from the perspective of a systems ecologist**	**[O2.01] Stable territory formation as a stochastic process in ecology** S. Nagano, *Ritsumeikan University, Japan*	**[O3.01] The rules of emergy accounting and the role of time in determining emergy** D.E. Campbell, *Center for Emergy Accounting and Finance, USA*	**[O4.01] The societal dimension in socioecological models: Modelling the modelling process** R. Bialozyt*[1], J. Jetzkowitz[2], M. Roß-Nickoll[3], R. Ottermanns[3],	**[O5.01] A spatial and state-space stock assessment model for American Plaice off the east coast of Canada** N. Cadigan, R. Kumar*, *Fisheries and Marine Institute of Memorial*

				[1]Northwest German Forest Research Institute, Germany, [2]Natural History Museum Berlin, Germany, [3]RWTH Aachen University, Germany	University of Newfoundland, Canada
11:10-11:30	**[O1.02] Moving from theory to practice: The challenges of developing realistic models with inadequate data** M.R. Evans, *University of Hong Kong, Hong Kong*	**[O2.02] Spatial exploratory data analysis and visualization for ecological hypothesis generation and modelling** V. Mose*, D. Western, *African Conservation Centre, Kenya*	**[O3.02] Emergy evaluation of 'value added' by ecosystem functions** M.T. Brown*[1 ,3], D.J. Lee[1], G. Liu[3], S. Ulgiati[2 ,3], S. Viglia[2 ,3], Q. Yang[3], *[1]University of Florida, USA, [2]Parthenope University, Italy, [3]Beijing Normal University, China*	**[O4.02] Using geo-data: Opportunities and data gaps in modelling social-ecological dynamics in Sub-Saharan Africa** N.C. Calò*, M. Schultze, C. Fürst, *Martin Luther Universität, Germany*	**[O5.02] Spatiotemporal modeling of size distributions with incomplete survey data in a flat fish** J. Gao*[1], N. Cadigan[1], L. Wheeland[2], B. Rogers[2], *[1]Memorial University of Newfoundland, Canada, [2]Fisheries and Oceans Canada, Canada*
11:30-11:50	**[O1.03] Integrating physical, ecological, and social system components in a model representing impacts of wind-borne pests on producers of cereal grain crops in the Great Plains of the USA** H-H. Wang*, W.E. Grant, *Texas A&M University, USA*	**[O2.03] Growing cyberforest using remote sensing data: Linking the spatially-explicit individual-based forest model with 3D point clouds** N. Strigul*[1], D. Gatziolis[1], *[1]Washington State University, USA, [2]Pacific Northwest Research Station, USA*	**[O3.03] Emergy and eco-exergy environmental accounting models to assess natural capital value in marine protected areas** P.P. Franzese*, G.F. Russo, E. Buonocore, *Parthenope University of Naples, Italy*	**[O4.03] Urban expansionand vulnerability of forest ecosystems in the Andes** S. Bonilla-Bedoya*[1], A. Estrella[2], M.A. Herrera[2], *[1]Universidad Tecnológica Indoamérica, Ecuador, [2]Universidad de Córdoba, Spain*	**[O5.03] Implementing mixotrophy into an aquatic ecosystem model of the Southern North Sea** L.K. Schneider*[1], W. Stolte[1], T.A. Troost[1], K.J. Flynn[2], *[1]Deltares, The Netherlands, [2]Swansea University, UK*
11:50-12:10	**[O1.04] An agro-ecological model coupling plant growth and pest population: Highlights on the role of fertilization and irrigation** M. Zaffaroni, D. Bevacqua*, *INRA, France*	**[O2.04] Making space matter for individual-based models of sessile organisms** L. Harris*[1], J. Testa[1], K. Kahover[1], J. Foley[2], L. Sanford[1], *[1]University of Maryland Center for Environmental Science, USA, [2]Ramboll, USA*	**[O3.04] Using eco-exergy to assess the ecological complexity of lake ecosystems in the Tuchola Forest Biosphere Reserve (Poland)** A. Piernik*[1], D. Kaminski[1], A. Nienartowicz[1], E. Buonocore[2], G.F. Russo[2], P.P. Franzese[2], *[1]Nicolaus Copernicus University, Poland, [2]Parthenope University of Naples, Italy*	**[O4.04] Integrated assessment and modelling of agro-ecological practices on water flow at catchment level: Which interactions between diversification and water shortage** L. Casal*[1 ,2], R. Misslin[3], J. Constantin[1], M. Willaume[1 ,2], O. Therond[3], *[1]INRA, UMR 1248 AGIR, France, [2]Université Toulouse, INPT ENSAT, UMR 1248 AGIR, France, [3]UMR LAE, INRA,*	**[O5.04] Quantifying copepod characteristics that emerge from interactions of individual and environmental variability** W.C. Gentleman*[1], A.B. Neuheimer[2 ,3], F. Maps[4], C.J. Johnson[5], C.E. Brennan[5], *[1]Dalhousie University, Canada, [2]Aarhus University, Denmark, [3]University of Hawaii at Manoa, USA, [4]Laval University, Canada, [5]Bedford*

				Université de Lorraine, France	*Institute of Oceanography, Canada*
12:10-12:30	**[O1.05] Does the variation in food concentration is the key for maturity of *Artemia* sp.?** S. Kundu*[1], N. Dasgupta[2], B. Chakraborty[3], S. Ray[1], S. Bhattacharya[4], *[1]Visva-Bharati University, Santiniketan, India, [2]Indian Statistical Institute, Giridih, India, [3]Lady Brabourne College, Kolkata, India, [4]Indian Statistical Institute, Kolkata, India*	**[O2.05] Eco-evolutionary models for biodiversity dynamics on oceanic islands** J. Sarmento Cabral*[1], L. Leidinger[1], D. Vedder[1], K. Wiegand[2], R.J. Whittaker[3], H. Kreft[2], *[1]University of Würzburg, Germany, [2]University of Göttingen, Germany, [3]University of Oxford, UK*	**[O3.05] Emergetic assessment of marine phytoplankton primary production** F. Mattei*[1,2], M. Scardi[1,2], *[1]University of Rome, Italy, [2]CoNISMa, Piazzale Flaminio, Italy*	**[O4.05] Literature review: Resilience metrics for complex socio-ecological systems** P. Steinmann*, H. Tobi, G. van Voorn, *Wageningen University & Research, The Netherlands*	**[O5.05] A delay differential equation model for the episodic collapse of a marine population** S. Subbey[1], M. Kobras*[1], *[1]Institute of Marine Research, Norway, [2]Technical University of Munich, Germany*
12:30-14:00	**Lunch and Poster session 1** Exhibition foyer – 1st Floor				
14:00-15:40	**Symposium 6: Modelling integrated systems** Europa Hall – 2nd Floor	**Symposium 7: Spatial simulation - CA and movement models** Karajan Hall 1 – 1st Floor	**Symposium 8: Emergy and Environmental Accounting Models** Karajan Hall 2 – 1st Floor	**Symposium 9: Dynamics of social-ecological systems** Karajan Hall 3 – 1st Floor	**Symposium 10: Spatiotemporal Methods for Aquatic Systems** Wolf Dietrich Hall 1 – 1st Floor
	Chair: William E. Grant	**Chair: George Perry**	**Chair: Pier Paolo Franzese**	**Chair: Martin Schultze**	**Chair: Elizabeth Duskey**
14:00-14:20	**[O6.01] Integration of qualitative and quantitative methods for assessing the sustainability of hop production** T. Dergan*, A. Trajanov, M. Debeljak, *Institut Jožef Stefan, Slovenia*	**[O7.01] EwE-F 2.0: Ecopath with Ecosim in Fortran with spatial dynamics** E. Akoglu, *Middle East Technical University, Turkey*	**[O8.01] Different modelling approaches to address sustainability with emergy accounting** E. Grönlund, *Mid Sweden University, Sweden*	**[O9.01] Identification and mapping of socio-ecological systems (SESs) in the Central Himalaya** P. Kumar*[1,2], P.K. Joshi[1], C. Fürst[2], R. Pandey[3], *[1]Jawaharlal Nehru University, India, [2]Martin Luther Universität Halle, Germany, [3]Forest Research Institute, India*	**[O10.01] Interannual environmental variability versus inter-individual variability: Relative contribution to Arctic krill production** D. Benkort*[1], F. Maps[2], W.C. Gentleman[3], *[1]Helmholtz-zentrum Geesthacht, Germany, [2]Université Laval, Canada, [3]Dalhousie University, Canada*

14:20-14:40	**[O6.02] Maelia-OWM: An integrated assessment and modelling tool for territorial management of organic resources** R. Misslin*[1], F. Levavasseur[1], J-C. Soulié[2], J. Villerd[1], T. Wassenaar[2], S. Houot[1], O. Thérond[1], [1]*INRA, France,* [2]*CIRAD, France*	**[O7.02] Optimal landscapes for both animals and humans: maximising living conditions in large-scale coupled habitat and settlement networks** M.J. van Strien*[1], A. Khiali-Miab[1], D.O. Ortiz-Rodríguez[2,1], R. Holderegger[2,1], A. Grêt-Regamey[1], [1]*ETH Zurich, Switzerland,* [2]*WSL Swiss Federal Research Institute, Switzerland*	**[O8.02] Land teleconnections and equality of ecological exchange: An emergy approach** S-L. Huang*, H-W. Chiu, *National Taipei University, Taiwan*	**[O9.03] Analyzing social network structures to better understand land management practices in Sub-Saharan Africa** M. Schultze*, C. Fürst, *Martin Luther University, Germany*	**[O10.02] A spatiotemporal von Bertalanffy growth model and its estimation when data are collected through length-stratified sampling** N. Zheng*[1], N. Cadigan[1], M.J. Morgan[2], [1]*Fisheries and Marine Institute of Memorial University of Newfoundland, Canada,* [2]*Fisheries and Oceans Canada, Canada*
14:40-15:00	**[O6.03] Integrated modelling to link terrestrial and riverine interfaces accounting for biodiversity and ecosystem services: Project ALICE** A. Fonseca[1], J. Santos[1], J. Cabral[1], R. Cortes[1], M. Santos[1], S. Varandas[1], S. Monteiro[1], M. Lourenço[2], J. Aranha[1], E. Cabecinha*[1], [1]*UTAD/CITAB, Portugal,* [2]*UTAD, Portugal*	**[O7.03] Geographic network automata for simulating complex ecological systems** T. Anderson*, S. Dragicevic, *Simon Fraser University, Canada*	**[O8.03] The water footprint of the naturalization of the cities. Evaluation of the water balance of the city garden** R. Ruiz-Pérez*, M. Marrero, *University of Seville, Spain*	**[O9.04] Communicating social-ecological resilience using serious games** W. Liu, *International Institute for Applied Systems Analysis (IIASA), Austria*	**[O10.03] Defining constraints to spatial distribution of marine species through a synthesis of multi-dimensional physical oceanographic data** S. Subbey*[1], S. Frøyen[1,2], T. Kårstad Nes[1,2], H. Soleim[2], A.B. Geitung[2], B. Ådlandsvik[1], K. Michalsen[1], [1]*Institute of Marine Research, Norway,* [2]*Western Norway Univ. of Applied Sciences, Norway*
15:00-15:20	**[O6.04] Forward looking rewilding: Europe as a socioecological system stressed by a dynamic climate** D. Alagador*[1], M.B. Araújo[1,2], [1]*CIBIO, University of Évora, Portugal,* [2]*National Museum of Natural Sciences, CSIC, Spain,* [3]*University of Copenhagen, Denmark*	**[O7.04] Simulating western corn rootworm adaptation to crop rotation and mitigation options on landscape level** M. Szalai*[1], S. Toepfer[1,2], J. Kiss[1], [1]*Szent Istvan University, Hungary,* [2]*CABI-Europe, Switzerland*	**[O8.04] Investigating the range of indicator methods and models in sustainability assessments** Simone Bastianoni*, Federico M. Pulselli, *University of Siena, Italy*	**[O9.05] Participatory system dynamics modelling for sustainable small-scale fishery management: A comparative analysis from livelihood perspectives** H. Trung Thanh*, P. Tschakert, M. Hipsey, *The University of Western Australia, Australia*	**[O10.04] Defining species migration patterns using Lagrangian coherent structures** K. Kirschbaum*[1], S. Subbey[2], L. Angheluta-Bauer[3], [1]*Technical University of Munich, Germany,* [2]*Institute of Marine Research, Norway,* [3]*University of Oslo, Norway*

Time					
15:20-15:40	**[O6.05] Non-compliance and biased management decisions predict population trends of harvested species** J.J. Cusack[1], A.B. Duthie*[1], R.A. Pozo[1], S. Redpath[2], N. Bunnefeld[1], [1]*University of Stirling, UK*, [2]*University of Aberdeen, UK*	**[O7.05] What stochastic geometry methods can tell about interspecific interactions in forest ecosystems** P. Grabarnik*[1], V. Shanin[1],[2], M. Shashkov[1],[3], N. Ivanova[1],[3], M. Myllymäki[4], [1]*Institute of Physicochemical and Biological Problems in Soil Science RAS, Russia*, [2]*Center for Forest Ecology and Productivity RAS, Russia*, [3]*Institute of Mathematical Problems of Biology, Russia*, [4]*Natural Resources Institute Finland (Luke), Finland*		**Final Discussion**	**[O10.05] Linking fish migration patterns to change in the marine environment - A review of concepts and mathematical models** S. Alrabeei*[1],[2], S. Subbey[2], A. Barbaro[3], B. Birnir[4], T. Rahman[1],[2], [1]*Western Norway Univ. of Applied Sciences, Norway*, [2]*Institute of Marine Research, Norway*, [3]*Case Western Reserve University, USA*, [4]*University of California (UCSB), USA*
15:40-16:10	**Refreshment Break** Exhibition foyer – 1st Floor				
16:10-17:50	**Symposium 11: Modelling integrated systems** Europa Hall – 2nd Floor	**Symposium 12: Spatial simulation - Ecological Niche Models** Karajan Hall 1 – 1st Floor	**Symposium 13: Emergy and Environmental Accounting Models** Karajan Hall 2 – 1st Floor	**Symposium 14: Ecological Applications of Hybrid Models** Karajan Hall 3 – 1st Floor	**Symposium 15: Spatiotemporal Methods for Aquatic Systems** Wolf Dietrich Hall 1 – 1st Floor
	Chair: Matthew R. Evans	**Chair: Gudrun Wallentin**	**Chair: Dan Campbell**	**Chair: Christian Vincenot**	**Chair: Elizabeth Duskey**
16:10-16:30	**[O11.01] Potential impacts of ocean acidification on provisioning services: A food web model application.** S. Zunino*, S. Libralato, D. Melaku Canu, C. Solidoro, *National Institute of Oceanography and Applied Geophysics - OGS, Italy*	**[O12.01] AgentSeal: Movement of harbour seals: An individual-based modelling framework as a reliable management tool to study multiple stressors** M. Chudzinska*, S. Smout, B. McConnell, *University of St Abdrews, UK*	**[O13.01] Emergy-based ternary valuation theory of ecosystem services and its application in ecological compensation** G.Y. Liu*[1], Q. Yang[1], Z.F. Yang[1], Y. Hao[1],[2], M.T. Brown[1], [1]*Beijing Normal University, China*, [2]*Beijing Engineering Research Center for Watershed Environmental Restoration & Integrated Ecological Regulation, China*	**[O14.01] Hybrid modelling: Flavours and recipes** C.E. Vincenot, *Kyoto University, Japan*	**[O15.01] The effect of ocean environmental conditions on the distribution of summer flounder (*Paralichthys dentatus*): Spatio-temporal modelling comparisons using R-INLA** V. Jauss*, S. Deen, P.J. Sullivan, *Cornell University, USA*
16:30-16:50	**[O11.02] A hybrid service simulation model for circular**	**[O12.02] Process-based vs. occurrence-based species distribution**	**[O13.02] Tourism and urban sustainability: An emergy approach**	**[O14.02] Participatory modelling to support environmental**	**[O15.02] 2D dynamic model for simulating anaerobic processes in**

	economy implementation in a food bank E. Guevara-Rivera*, R. Osorno-Hinojosa, V. Zaldívar-Carrillo, *ITESO University, Mexico*	models: Comparing performance under common data and modelling scenarios T. Szewczyk*, M. Petrik, J. Allen, *University of New Hampshire, USA*	Y-C. Lee*[1], P-T. Liao[1], *[1]National Chung Hsing University, Taiwan, [2]National Taipei University, Taiwan*	conservation in large landscapes L. Parrott, *The University of British Columbia, Canada*	surface flow constructed wetlands subjected to a continuous laminar flow S. Brito-Espino*, A. Ramos-Martín, S. Pérez-Báez, C. Mendieta-Pino, *Universidad de Las Palmas de Gran Canaria, Spain*
16:50-17:10	**[O11.03] The urban Natural Capital Model of the Netherlands and its application** M.J. Paulin*[1], R.P. Remme[2], A.M. Breure[1], M. Rutgers[1], T. De Nijs[1], *[1]RIVM, The Netherlands, [2]Stanford University, USA, [3]Radboud University, The Netherlands*	**[O12.03] Remotely sensed temperature predictors for Habitat Suitability Models** P. Schwager*[1], G. Wallentin[2], C. Berg[1], *[1]University of Graz, Austria, [2]University of Salzburg, Austria*	**[O13.03] Emergy-based analysis of the energy security of China** H.F. Lu*[1], F.Y. Xu[2], H.X. Liu[1], J. Wang[1], D.E. Campbell[3], H. Ren[1], *[1]South China Botanical Garden, CAS, China, [2]South China Agricultural University, China, [3]Atlantic Ecology Division, US EPA, USA*	**[O14.03] Combining individual-based population models and ecosystem lake models: Another step towards increasing the realism of modelling plankton dynamics** T. Strauss, *Gaiac Research Institute, Germany*	**[O15.03] Evaluation of spatio-temporal variations of water availability by using process-based eco-hydrology model in arid and semi-arid regions of Mongolia** T. Nakayama*, Q. Wang, T. Okadera, E. Deni, *National Institute for Environmental Studies, Japan*
17:10-17:30	**[O11.04] Assessing dynamics, interactions and feedbacks of urban ecosystem services and society by social-ecosystem model** X. Luo*, P. Jiang, J. Yang, *Tsinghua University, China*	**[O12.04] Broad-scale species distribution models applied to data-poor areas** C. Guillaumot*[1],[2], J. Artois[1], T. Saucède[2], B. Danis[1], *[1]Université Libre de Bruxelles, Belgium, [2]Univ. Bourgogne Franche-Comté, France*	**Final Discussion**	**[O14.04] Scenario analysis of cascading population dynamics of phyto- and zooplankton in Lake Müggelsee (Germany) between 2002 and 2012 by an ensemble of complementary inferential models** F. Recknagel*[1], R. Adrian[1], *[1]University of Adelaide, Australia, [2]Leibniz Institute of Freshwater Ecology and Inland Fisheries (IGB), Germany*	**[O15.04] Use of current statistics to identify aggregation zones of discharges** G. Alendal*[1], A. Oleynik[1], H. Avlesen[2], K. Gundersen[1], J. Berntsen[1], H.G.A. Moreira[1], *[1]University of Bergen, Norway, [2]NORCE Norwegian Research Centre, Norway*
17:30-17:50	**[O11.05] How to integrate human adaptive behaviour in ecological models? An attempt to include goal oriented action planning for firewood**	**Final Discussion**		**[O14.05] Co-modeling of flood caused by a dam failure and consequent evacuation of a small ward of the city of Hanoi** K. Chapuis*[1], Q.N. Huynh[2], T.A. El waqoudi[3], *[1]Institue*	**[O15.05] Spatial tug-of-war: Kriging spline model residuals in a Bayesian framework** E. Duskey*[1], P.J. Sullivan[1], S. Subbey[2], *[1]Cornell University, USA,*

	collection in an agent-based savanna tree model U.A. Lenfers*, F.J. Ocker, T. Clemen, *Hamburg University of Applied Sciences, Germany*			*of research for the development, France,* *[2]Can Tho University, Viet Nam,* *[3]University of Montpelier, France*	*[2]Norwegian Institute of Marine Research, Norway*

<table>
<tr><td colspan="6" align="center">Thursday 3 October 2019</td></tr>
<tr><td>09:00-09:40</td><td colspan="5">[KN02] Next generation agent-based vegetation models account for theory development, first principles AND predictions
Uta Berger, Technische Universität Dresden, Germany
Europa Hall – 2nd Floor</td></tr>
<tr><td>09:40-10:20</td><td colspan="5">[KN03] Using spatial simulation to understand ecosystem dynamics of the past and their legacies for the future
George Perry, The University of Auckland, New Zealand
Europa Hall – 2nd Floor</td></tr>
<tr><td>10:20-10:50</td><td colspan="5">Refreshments break
Exhibition foyer – 1st Floor</td></tr>
<tr><td>10:50-12:30</td><td>Symposium 16: Modelling integrated systems
Europa Hall – 2nd Floor</td><td>Symposium 17: Spatial simulation - System dynamics and movement
Karajan Hall 1 – 1st Floor</td><td>Symposium 18: Ecological Network Analysis
Karajan Hall 2 – 1st Floor</td><td>Symposium 19: Modelling the multi-functionality of landscapes
Karajan Hall 3 – 1st Floor</td><td>General session 1: Marine ecology and fisheries - physical processes
Wolf Dietrich Hall 1 – 1st Floor</td></tr>
<tr><td></td><td>Chair: Diogo Alagador</td><td>Chair: George Perry</td><td>Chair: Caner Kazancı</td><td>Chair: Reimund Rötter</td><td>Chair: Miguel Pais</td></tr>
<tr><td>10:50-11:10</td><td>[O16.01] System dynamics modelling as a tool for green urban growth: Case study of urban wetlands in Bogota, Colombia
G. Gonzalez-Angarita[1], L. Vlassova*[2], C. Henriquez[3], O. Rosero-Vlasova[4], [1]University Libre of Colombia, Colombia, [2]Technical State University of Quevedo, Ecuador, [3]Pontificia Universidad Católica de Chile,</td><td>[O17.02] Optimal stock enhancement activities for a spatially distributed renewable resource
T. Upmann*[1], H. Uecker[2], L. Hammann[2], B. Blasius[2 ,1], [1]Helmholtz-Institute for Functional Marine Biodiversity at the University of Oldenburg (HIFMB), Germany, [2]University of Oldenburg, Germany</td><td>[O18.01] Gaia and Janus: Match for a Planetary Superorganism
B. Patten, University of Georgia, USA</td><td>[O19.01] Coupling crop and vegetation modelling to quantify impact of cattle and crop management on ecosystem services in southern African landscapes
M. Hoffmann*[1 ,3], S. Scheiter[2], M. Pfeiffer[1], W. Nelson[3], M. Koch[3], J. Isselstein[3], K. Ayisi[4], J. Odhiambo[6], G. Bracho Mujica[3], R. Rötter[3], [1]Leibniz Centre for Agricultural Landscape Research, Germany, [2]Senckenberg Biodiversity and Climate Research Centre (SBiK-F), Germany, [3]University Goettingen, Germany,</td><td>[GEN01.01] Pharmaceuticals on estuarine fish populations: Modelling potential effects from the organism to the ecosystem
M.P. Pais*[1], P. Reis-Santos[1], I.A. Duarte[1], N. Vaz[2], G.M. Marques[3], V.F. Fonseca[1], [1]MARE – Marine and Environmental Sciences Centre, Portugal, [2]CESAM, Aveiro, Portugal, [3]MARETEC, IST, Lisbon, Portugal</td></tr>
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Time					
	Chile, [4]University of Zaragoza, Spain			*[4]University of Limpopo, South Africa, [5]University of Venda, South Africa*	
11:10-11:30	**[O16.02] Reconciling human development and giant panda preservation goals in Wolong national reserve: Post-earthquake relocation options and their socio-economic and ecological implications** L. Xu*, Y. Chen, X. Zhang, *Peking University, China*	**[O17.03] Modeling social vulnerability to malaria - a (spatially explicit) system-dynamics approach** L. Menk, C. Neuwirth*, S. Kienberger, *Paris Lodron University Salzburg, Austria*	**[O18.02] Indirect flows decentralize throughflow centrality in food webs** S.R. Borrett*[1,2], J. Gribble[1], *[1]University of North Carolina Wilmington, USA, [2]Duke University, USA*	**[O19.02] Modelling land use as a driver of phenology shifts in the Lowveld Region of South Africa** Y. Ernst*, B. Erasmus, *University of the Witwatersrand, South Africa*	**[GEN01.02] Spatio-temporal fishing effort dynamics and the adaptive capacity of the socio-ecological system of the North Sea to tipping points** J. Letschert*[1], R. Diekmann[1], B. Blanz[2], V. Stelzenmüller[1], *[1]Thünen Institute of Sea Fisheries, Germany, [2]University of Hamburg, Germany*
11:30-11:50	**[O16.03] Habitat selection is strongly linked with behavioral association networks in matrics habitats** M.A. Rasool*[1], W. Li[2,1], G. Lei[1], *[1]Beijing Forestry University, China, [2]Water Wetlands and Coast Science, Scientific Division, Water and Wetlands, Australia*	**[O17.04] Satellite telemetry and bio-logging: Tools for studying movement ecology in elusive marine species** L. Riekkola*[1], A. Zerbini[2,3], V. Andrews-Goff[4], A. Friedlaender[5], R. Constantine[1], *[1]University of Auckland, New Zealand, [2]National Oceanic and Atmospheric Administration, USA, [3]Cascadia Research Collective, USA, [4]Australian Antarctic Division, Australia, [5]University of California - Santa Cruz, USA*	**[O18.03] Effect of river-lake connectivity on food web's structure in Xiong'an New Area, China** X.T. Fu*, W. Yang, *Beijing Normal University, China*	**[O19.03] Climate change and land use impacts on vegetation – using dynamic vegetation models to understand multi-functionality in savanna rangelands** S. Scheiter*[1], C. Martens[1], C. Gaillard[1], J. Schulte[2], B.F.N. Erasmus[3], W.C. Twine[3], M. Pfeiffer[1], *[1]Senckenberg Biodiversity and Climate Research Centre, Germany, [2]Carl von Ossietzky University Oldenburg, Germany, [3]University of the Witwatersrand, South Africa*	**[GEN01.03] Carrying capacity of fish culture** T. Legović, *R.Bošković, Zagreb, Croatia*
11:50-12:10	**[O16.04] Multi-agent system for integrating ecological processes at multiple scales with human decision-making: Solutions and lessons learned from a modelling framework applied in different landscape ecosystems**	**[O17.05] Landscape correlates of space use in the critically endangered African wild dog *Lycaon pictus*** M.E. Pretorius*[1], N. Seoraj-Pillai[1,2], *[1]University of the Witwatersrand, South Africa, [2]Tshwane University*	**[O18.04] Algebraic and numerical network environ analysis exploration of the effects of model currency: How system retentiveness and topology combine to produce system level properties**	**[O19.04] Developing spatio-temporally realistic representations of agricultural landscapes for assessing the impacts of landscape management on population dynamics** E. Ziolkowska*[1], C.J. Topping[2], A. Bednarska[3,1], R. Laskowski[1], *[1]Jagiellonian*	**[GEN01.04] Modelling the life cycles of harmful diatoms and its application to the benthic-pelagic coupled ecosystem model, to reveal the mechanisms of the bleaching in aquacultured nori**

	Q.B. Le*[1], G.B. Villamor[2], B.A. Thiombiano[3], *[1]International Center for Agricultural Research in Dry Areas (ICARDA), Egypt, [2]Scion, New Zealand, [3]University Nazi Boni, Burkina Faso*	*of Technology, South Africa*	S. Whipple*, C. Kazanci, *University of Georgia, USA*	*University, Poland, [2]Arhus University, Denmark, [3]Polish Academy of Sciences, Poland*	A. Sohma*[1], R. Imada[1], T. Nishikawa[2], H. Shibuki[3], *[1]Osaka City University, Japan, [2]Hyogo Prefectural Technology Center for Agriculture, Forestry and Fisheries, Japan, [3]Mizuho Information and Research Institute, Inc, Japan*
12:10-12:30	**[O16.05] Cross-scale decision support with MARS for integrated elephant and tourist management in Kruger National Park, South Africa** T. Clemen*, U.A. Lenfers, J. Weyl, *Hamburg University of Applied Sciences, Germany*	**Final discussion**	**[O18.05] Eigenvector-based algorithm detect the most detrimental deletion sequence in both topological and dynamical networks extinctions analysis** M.I. Avila-Thieme*[1], D. Corcoran[1], A. Perez-Matus[1], P.A. Marquet[1,2], S.A. Navarrete[1,3], F.S. Valdovinos[4], *[1]Pontificia Universidad Catolica de Chile, Chile, [2]Instituto de Ecologia y Biodiversidad, Chile, [3]Center for Applied Ecology and Sustainability, Chile, [4]University of Michigan, USA*	**[O19.05] Agent-based modelling for integrated land use systems analysis in Southern Africa** J. Feil*, S. Yazdan Bakhsh, *Georg-August-University Göttingen, Germany*	**[GEN01.05] Information inventory in ecological networks** A. Ludovisi*[1], U.M. Scharler[2], *[1]Biologia e Biotecnologie Università degli Studi di Perugia, Italy, [2]University of KwaZulu-Natal, South Africa*
12:30-14:00	**Lunch and Poster Session 2** Exhibition foyer – 1st Floor				
14:00-15:40	**Symposium 20: Modelling integrated systems** Europa Hall – 2nd Floor	**Symposium 21: Individual-based modelling - Theory and methods** Karajan Hall 1 – 1st Floor	**Symposium 22: Ecological Network Analysis** Karajan Hall 2 – 1st Floor	**General session 2: Ecosystem services** Karajan Hall 3 – 1st Floor	**General session 3: Marine ecology and fisheries - food webs** Wolf Dietrich Hall 1 – 1st Floor
	Chair: Thomas Clemen	**Chair: Volker Grimm**	**Chair: Brian Fath**	**Chair: João David**	**Chair: Miguel Pais**
14:00-14:20	**[O20.01] Predicting human populations from ecological theory, geostatistical**	**[O21.01] Theory development with agent-based modelling** V. Grimm*[1], I. Lorscheid[2], M. Meyer[3], U. Berger[4],	**[O22.01] How ecosystem networks reveal resilience** A.L. Shurety*, U.M. Scharler, *University of*	**[GEN02.01] SWAT model for ecosystem services and global change scenarios in the headwaters of Cantareira**	**[GEN03.01] Object-based modeling of marine bottom seaweeds**

	modelling and big data D.J. Clarke*, A. Tatem, *University of Southampton, UK*	[1]*Helmholtz Centre for Environmental Research-UFZ, Germany,* [2]*University of Applied Sciences Europe, Germany,* [3]*Hamburg University of Technology, Germany,* [4]*Technische Universität Dresden, Germany*	*KwaZulu-Natal, South Africa*	**water supply system, Brazil** D. Taffarello*[1], M.S. Bittar[1], G.S. Mohor[2], E.M. Mendiondo[1], [1]*University of Sao Paulo, Brazil,* [2]*University of Potsdam, Germany*	E. Vasechkina*, T. Filippova, *Marine Hydrophysical Institute of RAS, Russia*
14:20-14:40	**[O20.02] Integrated modeling and long-term predictability of lakes and watersheds** E. Komatsu*[1],[4], T. Fukushima[2], Y. Sato[3], [1]*Meiji University, Japan,* [2]*Ibaraki Kasumigaura Environmental Science Center, Japan,* [3]*Lake Biwa Environmental Research Institute, Japan,* [4]*LERCS Inc., Japan*	**[O21.02] Antagonistic evolutionary scenarios in microbial communities are played out under ecological stratification fostered by spatial gradients** A.I. Klimenko*[1],[2], Y.G. Matushkin[1],[2], N.A. Kolchanov[1],[2], S.A. Lashin[1],[2], [1]*Institute of Cytology and Genetics SB RAS, Russia,* [2]*Novosibirsk State University, Russia*	**[O22.02] Constructing ecosystem networks: A comprehensive methodology that considers ecological variability** U.M. Scharler*, C. Waspe, *University of KwaZulu-Natal, South Africa*	**[GEN02.03] Fire-landscape dynamic model to assess future trade-offs between preventive fire management, nature conservation and sustained supply of ecosystem services** A. Regos*[1],[2], N. Aquilué[3],[4], S. Pais[5], A. Sil[5],[6], B. Marcos[2], L. Brotons[3],[7], J. Honrado[2],[5], [1]*University of Santiago de compostela, Spain,* [2]*Research Center in Biodiversity and Genetic Resources (CIBIO/InBIO), Portugal,* [3]*CTFC-CREAF, InForest Joint Research Unit, CSIC-CTFC-CREAF, Spain,* [4]*Université du Québec à Montréal, Canada,* [5]*Universidade do Porto, Portugal,* [6]*Universidade de Trás-os-Montes e Alto Douro, Portugal,* [7]*CSIC, Spain*	**[GEN03.03] Using a coupled ecosystem modelling approach to evaluate effects of reductions in nutrients and hypoxia on living marine resources** K. de Mutsert*[1], A. Laurent[2], K. Lewis[3], J. Steenbeek[4], [1]*George Mason University, USA,* [2]*Dalhousie University, Canada,* [3]*University of Central Florida, USA,* [4]*Ecopath International Initiative, Spain*
14:40-15:00	**[O20.03] A multimedia box model for mercury (Hg) pollution in the Venice Lagoon: Past dynamics and future scenarios**	**[O21.03] Machine learning and data science ABMs: How to build cognitive, spatially aware, adaptive agents from limited data**	**[O22.03] Efficient construction of ecosystem models using a flow importance index**	**[GEN02.04]**	**[GEN03.04] The analysis of a phytoplankton state and the assessment of ecosystems bioproductivity for seas**

	G. Rosati*, C. Solidoro, D. Melaku Canu, *National Institute of Oceanography and Experimental Geophysics - OGS, Italy*	M. Cenek*[1], M. Franklin[2], C. Shaeffer[3], H. Morgan-Thomas[1], *[1]University of Portland, USA, [2]General Communications Inc, USA, [3]University of Alaska Anchorage, USA*	C. Kazanci*, M.R. Adams, A. Al Basheer, K.J. Black, S.J. Whipple, *University of Georgia, USA*		**in north-west pacific by a mathematical modelling with use of the satellite data** A. Abakumov*, S. Park, *Institute of Automation and Control Processes, FEB RAS, Russia*
15:00-15:20	**[O20.04] Impact of environmental factors and assemblage pattern of fish in lower Ganges** J. Mukherjee*[1],[2], S. Ray[1], *[1]Krishna Chandra College, India, [2]Visva- Bharati University, India*	**[O21.04] Using agent-based modelling and self-evolving traits to understand extinction risk** F. Chichorro*[1], L. Correia[1],[2], P. Cardoso[1], *[1]Finnish Museum of Natural History, Finland, [2]University of Lisbon, Portugal*	**[O22.04] Keystone species complexes in food webs** F. Jordán*[1], A. Endrédi[1], J. Pereira[2], *[1]MTA Centre for Ecological Research, Hungary, [2]Central European University, Hungary*	**[GEN02.05] From land-use changes to ecosystem services: A case study for Portugal** J. David*, F. Campos, S. Martins, L. Roque, B. Silva, A. Ramos, P. Cabral, *NOVA IMS Information Management School, Portugal*	**[GEN03.05] Using ecopath with ecosim to model the effects of the Fukushima nuclear accident on Japan's coastal marine ecosystem** S. Booth*[1], J. Steenbeek[2], D. Tsumune[3], Y. Tateda[3], W. Walters[4], S. Charmasson[1], V. Christensen[5], *[1]Institut de Radioprotection et de Sûreté Nucléaire, France, [2]Central Research Institute of Electric Power Industry, Japan, [3]Ecopath International Initiative, Spain, [4]Pennsylvania State University, USA, [5]University of British Columbia, Canada*
15:20-15:40	**[GEN09.02] Predicting the community structure of *Syrphidae* auxiliary species using multi-objective regression** M. Debeljak*[1],[2], V. Tosser[3], V. Sarthou[4], V. Kuzmanovski[1], A. Trajanov[1],[2], *[1]Jozef Stefan Institute,*	**[O21.05] A theoretical individual-based modelling approach to the mechanisms of habitat fragmentation** J. Chetcuti*[1],[2], W.E. Kunin[2], J.M. Bullock[1], *[1]Centre for Ecology & Hydrology, UK, [2]University of Leeds, UK*	**[O22.05] A graph theoretic approach for modelling Tiger Corridor Networks in Terai Arc landscape complex, India** N. Rautela*[2], S. Shanu[1], A. Roy[2], S. Bhattacharya[3], *[1]University of Petroleum and Energy Studies,*	**Final discussion**	**[GEN12.03] Foreseeing the potential habitat suitability for intertidal seagrass restoration with a numerical modelling approach** A. Azevedo*[1], A. Ribeiro[1], J. Lencart e Silva[2], A.I. Sousa[1], A.I. Lillebø[1], J.M. Dias[1], *[1]University of Aveiro,*

	Slovenia, [2]Jozef Stefan International Postgraduate School, Slovenia, [3]ARVALIS-Institut du végétal, France, [4]SYRPHYS Agro Environment, France		*India, [2]Indian Institute of Remote Sensing, India, [3]Shiv Nadar University, India*		*Portugal, [2]Longline Environment, UK*
15:40-16:10	**Refreshment break** Exhibition foyer – 1st Floor				
16:10-17:50	**Symposium 23: Cross scale approaches in ecological modeling** Europa Hall – 2nd Floor	**Symposium 24: Individual-based modelling - Communities** Karajan Hall 1 – 1st Floor	**Symposium 25: Ecological Network Analysis** Karajan Hall 2 – 1st Floor	**General session 4: Ecosystem services** Karajan Hall 3 – 1st Floor	**General session 5: Marine ecology and fisheries - fisheries** Wolf Dietrich Hall 1 – 1st Floor
	Chair: Werner Rammer	**Chair: Uta Berger**	**Chair: Ursula Scharler**	**Chair: João David**	**Chair: Miguel Pais**
16:10-16:30	**[O23.01] Simulating bark beetle outbreak at a global scale: Integrating an up-scaled landscape model (LANDCLIM) into a land surface model (ORCHIDEE)** G. Marie*[1], G. Petter[1], S. Luyssaert[2], *[1]VU Amsterdam University, The Netherlands, [2]ETH, Zurich, Switzerland*	**[O24.01] Individual and trait-based models as a tool for revealing plant community drivers in deserts** L. Zakharova*[1], M. Seifan[2], K.M. Meyer[1], *[1]University of Goettingen, Germany, [2]Ben-Gurion University of the Negev, Israel*	**[O25.01] Cross-scale connectivity of macrobenthic communities in a patchy network of habitats: The mesophotic biogenic habitats of the Northern Adriatic Sea** V. Bandelj*[1], C. Solidoro[1], C. Laurent[1], S. Kaleb[2], A. Falace[2], *[1]OGS - Istituto Nazionale di Oceanografia e di Geofisica Sperimentale, Italy, [2]Università degli Studi di Trieste, Italy*	**[GEN04.01] Unveiling synergies and trade-offs of marine and coastal cultural ecosystem services in Japan** M. Matsuba, *Japan Agency for Marine-Earth Science and Technology, Japan*	**[GEN05.01] Pooling fishery-dependent and -independent data to model species spatio-temporal dynamics: A framework for data boosting and multiple bias correction** M.C. Rufener*, K. Kristensen, J.R. Nielsen, F. Bastardie, *Technical University of Denarmk, Denmark*
16:30-16:50	**[O23.02] Modelling biodiversity in agricultural landscapes - spatial integration of various species and farmland biodiversity models on different scales**	**[O24.02] Perspectives and challenges of an individual-based grassland model** F. Taubert*[1], J. Hetzer[1], J.S. Schmid[1], A. Huth[1 ,2], *[1]Helmholtz Centre for Environmental Research – UFZ, Germany,*	**[O25.02] Inferring causation and interaction in interconnected land systems** Q. Wang, *Guangdong Key Laboratory of Integrated Agro-environmental Pollution*	**[GEN04.02] Modelling the economic benefits of different management strategies for insect pest control in agricultural landscapes: Comparisons across temporal and spatial scales**	**[GEN05.02] Catch prediction of demersal fish from environmental data with random forest** S. Suzuki*[1], S. Tabeta[1], D. Sasaki[2], T. Maruyama[2], K. Mizuno[1], *[1]The University of Tokyo, Japan, [2]Mie Prefecture*

	S. Kay*, F. Herzog, *Agroscope, Switzerland*	[2]*German Centre for Integrative Biodiversity Research (iDiv), Germany,* [3]*University Osnabrück, Germany*	*Control and Management, Guangdong Institute of Eco-environmental Science & Technology, China*	H.R. Parry, *CSIRO, Australia*	*Fisheries Research Institute, Japan*
16:50-17:10	**[O23.03] A deep learning based tool for scaling vegetation dynamics** W. Rammer*, R. Seidl, *University of Natural Resources and Life Sciences, Austria*	**[O24.03] Untangling the mechanisms of cryptic coexistence in a nematode community through individual-based modelling** A.J. Daly*, N. De Meester, J.M. Baetens, T. Moens, B. De Baets, *Ghent University, Belgium*	**[O25.03] Exploring interactions of physical, chemical and biological variables of an urban river with network analysis** C. Medupin*, C. Bannister, J. Schwartz, *The University of Manchester, UK*	**[GEN04.03] The mango tree - blossom gall midge system: *in-silico* assessment of its functioning and management** I. Grechi*[1],[3], B. Reyne[1],[3], L. Saint-Criq[1],[3], M.M. Memah[2], A. Ratnadass[1],[3], F. Normand[1],[3], F. Boudon[1],[3], [1]*Cirad, France,* [2]*INRA, France,* [3]*Université Montpellier, France*	**[GEN05.03] A multi-model assessment of biogeochemical status, ecosystem health and ecosystem services in the Mediterranean Sea under contemporary and future climate** C. Solidoro*, G. Cossarini, P. Lazzari, S. Libralato, S. Salon, D. Melaku Canu, *National Institute of Oceanography and Experimental Geophysics-OGS, Italy*
17:10-17:30	**[O23.04] Modeling risks and mitigation options for the chronic wasting disease (CWD) in Scandinavia** O. Franklin*[1], E. Moltchanova[1],[2], A. Krasovskii[1], D. Schepaschenko[1], F. Kraxner[1], [1]*IIASA, International Institute for Applied Systems Analysis, Austria,* [2]*University of Canterbury, New Zealand*	**[O24.05] Investigating the functioning of microbial communities using physiologically explicit, individual-based ecological modelling** A. Bogdanowski*[1],[2], T. Banitz[2], L. Muhsal[1], C. Kost[1], K. Frank[2],[1], [1]*Osnabrück University, Germany,* [2]*Helmholtz Centre for Environmental Research - UFZ, Germany*	**[O25.04] Ecological network analysis reveals that climate change disrupted the ecological succession of a northern Apennine lake (Italy)** M. Scotti*[1], C. Bondavalli[2], G. Rossetti[2], A. Bodini[2], [1]*GEOMAR Helmholtz Centre for Ocean Research Kiel, Germany,* [2]*University of Parma, Italy*	**[GEN04.04] Developing a conceptual framework for restoring ecological function through rewilding: The Guam case study** H. Thierry*, H. Rogers, *Iowa State University, USA*	**[GEN05.04] Sensitivity analyses in different environmental management strategies for sustainable oyster production in Hiroshima Bay, Japan** P.S. Wahyudin*, T. Yamamoto, *Hiroshima University, Japan*
17:30-17:50	**[O23.05] How forest structure influences temperature sensitivity of forests**	**Final Discussion**	**[O25.05] Withdrawn**	**Final Discussion**	**[GEN05.05] Adapting a hidden Markov model for geolocation of Pacific spiny dogfish in the North Pacific Ocean**

	F.J. Bohn[1,2], A. Huth*[1], [1]*Helmholtz Centre for Environmental Research - UFZ, Germany*, [2]*Institute of Meteorology and Climate Research (IMK-IFU) – KIT, Germany*, [3]*Institute for Environmental Systems Research – iDiv, Germany*, [4]*University of Osnabrück, Germany*				J. Nielsen*[1], C. Tribuzio[1,2], [1]*Kingfisher Marine Research, LLC, USA*, [2]*NOAA NMFS Alaska Fisheries Science Center, USA*
18:00–18:30	**ISEM General Meeting** Europa Hall – 2nd Floor				

<table>
<tr><td colspan="6" align="center">Friday 4 October 2019</td></tr>
<tr><td>09:00-09:40</td><td colspan="5">[KN04] Complexities in the Anthropocene era models: Getting a human actor on board
Tatjana Filatova, <i>University of Twente, the Netherlands & University of Technology Sydney, Australia</i>
Europa Hall – 2nd Floor</td></tr>
<tr><td>09:40-10:20</td><td colspan="5">[KN05] Connecting by Location
Josef Strobl, <i>University of Salzburg, Austria</i>
Europa Hall – 2nd Floor</td></tr>
<tr><td>10:20-10:50</td><td colspan="5">Refreshments break
Exhibition foyer – 1st Floor</td></tr>
<tr><td>10:50-12:30</td><td>Symposium 26: Ecological Network Analysis
Europa Hall – 2nd Floor</td><td>Symposium 27: Individual-based modelling - mixed
Karajan Hall 1 – 1st Floor</td><td>Symposium 28: Modelling Forest Ecosystems
Karajan Hall 2 – 1st Floor</td><td>Symposium 29: Biomonitoring and environmental stress
Karajan Hall 3 – 1st Floor</td><td>General session 6: Freshwater systems
Wolf Dietrich Hall 1 – 1st Floor</td></tr>
<tr><td></td><td>Chair: Ursula Scharler</td><td>Chair: Gudrun Wallentin</td><td>Chair: Juan A. Blanco</td><td>Chair: Tae-Soo Chon</td><td>Chair: Brenda Rashleigh</td></tr>
<tr><td>10:50-11:10</td><td>[O26.02] Nutrient flow modelling for assessing the resource criticality of heterogeneous agricultural systems: A case study in Southwestern Burkina Faso
G. Meylan[2], B.A. Thiombiano[3], Q.B. Le*[1], [1]<i>International</i></td><td>[O27.01] An individual-based model to assess the impact of insect pollinator flower-constancy on pollen transfer in flowering plant communities
A. Dorin*[1], T. Taylor[1], M. Shrestha[1], A.G. Dyer[2,1], [1]<i>Monash University, Australia</i>, [2]<i>RMIT University, Australia</i></td><td>[O34.04] Mapping abundance distributions for allergenic tree species in Belgium using citizen science data
S. Dujardin*[1], M. Stas[2], R. Aerts[2,3], M. Hendrickx[3], T.S. Nawrot[2,4], J. Van Orshoven[2], J-M. Aerts[2], B. Somers[2], N. Dendoncker[1], C.</td><td>[O29.01] Spatial and temporal variability of benthic macroinvertebrates in streams responding to disturbances
T.S. Chon*[1,2], K. Lee[1], N. Jung[1], G.S. Kwak[1], Y.H. Jang[1], J.B. Leem[1], Y.S. Park[1], [1]<i>Ecology and Future Research Association, Republic of</i></td><td>[GEN06.01] Estimating of methane production pathway and homoacetogenic bacteria activity in incubation experiments with peat samples from various types of West Siberian fens through modeling of ^{13}C-CO_2 and ^{13}C-CH_4 isotope signature dynamics</td></tr>
</table>

	Center for Agricultural Research in the Dry Areas (ICARDA), Egypt, [2]Zurich University of Applied Sciences (ZHAW), Switzerland, [3]University Nazi Boni (UNB), Burkina Faso	Linard[1], [1]*University of Namur, Belgium, [2]KULeuven, Belgium, [3]Sciensano (Belgian Institute of Health), Belgium, [4]University of Hasselt, Belgium, [5]Royal Meteorological Institute of Belgium, Belgium*	*Korea, [2]Pusan National University, Republic of Korea*	L. Lokshina[1], V. Vavilin*[1], Y. Litti[1 ,2], O. Kotsyurbenko[1 ,5], A. Sabrekov[1 ,4], M. Glagolev[1 ,3], [1]*Water Problems Institute, Russia, [2]Winogradsky Institute of Microbiology, Russia, [3]Moscow State University, Russia, [4]Institute of Forest Science, Russia, [5]Yugra State University, Russia*
11:10-11:30	**[O26.03] Foundations for sustainability** B.D. Fath*[1 ,2], D.A. Fiscus[1], [1]*Towson University, USA, [2]IIASA, Austria, [3]Western Maryland Food Council, USA*	**[O27.02] Modeling mason bee (*Osmia bicornis*) in agricultural landscapes: Development and testing of an agent-based model** C.J. Topping[1], E. Ziolkowska*[2], J. Sravanthi Mokkapati[2], A. Bednarska[3 ,2], R. Laskowski[2], [1]*Arhus University, Denmark, [2]Jagiellonian University, Poland, [3]Polish Academy of Sciences, Poland*	**[O28.02] A trait-based model to predict functional responses to global change in the understorey of temperate forests** D. Landuyt*[1], M.P. Perring[1 ,2], H. Blondeel[1], K. Verheyen[1], [1]*Ghent University, Belgium, [2]The University of Western Australia, Australia*	**[O29.02] Application of the stress-gradient hypothesis to managing forest invasion by giant bamboo in Japan** R. Spake*[1], M. Soga[4], J. Catford[2], F. Eigenbrod[1], [1]*University of Southampton, UK, [2]Kings College London, UK, [3]University of Tokyo, Japan*	**[GEN06.02] Bridging the gap between mechanistic and empirical modelling approaches: Examples for macroinvertebrates in streams** N. Schuwirth, *Eawag: Swiss Federal Institute of Aquatic Science and Technology, Switzerland*
11:30-11:50	**[O26.04] Effects of exploitative competition on the topology, species abundance, and nestedness of mutualistic networks** S.E. Maeng, J.W. Lee, D-S. Lee*, *Inha University, Republic of Korea*	**[O27.03] Agent based modelling of snakebites in Sri Lanka** E. Goldstein*[1], J. James[1], G. Martin[1], K. Murray[2], T. Iwamura[1], [1]*Tel Aviv University, Israel, [2]Imperial college London, UK*	**[O28.03] Approaches to integration of simulation models for assessment of synergies and trade-offs between forest ecosystem services supply** P. Grabarnik[1], S. Chumachenko[2], V. Shanin[1 ,3], L. Khanina[4], M. Bobrovsky[1 ,4], S. Bykhovets[1], P. Frolov*[1], [1]*Institute of Physico-*	**[O29.03] Spatial patterning of chlorophyll a and water quality measurements in characterizing environmental thresholds for local eutrophication in the Nakdong River basin in Korea** H.G. Kim*[1], S. Hong[1], T-S. Chon[1 ,2], G-J. Joo[1], [1]*Pusan National University, Republic of*	**[GEN06.03] An ecohydrological modelling cascade to assess the factors responsible for the catchment scale distribution of Freshwater Pearl Mussel *Margaritifera margaritifera*** D. Baldan*[1 ,4], A. Funk[1 ,4], C. Hauer[1], M. Piniewski[2], B. Mehdi[1], C.

			Chemical and Biological Problems in Soil Science RAS, Russia, [2]Bauman Moscow State Technical University, Russia, [3]Center for Forest Ecology and Productivity, Russia, [4]Institute of Mathematical Problems of Biology RAS – a branch of the Institute of Applied Mathematics, Russia	*Korea, [2]Ecology and Future Research, Republic of Korea*	Gumpinger[3], S. Höfer[3], T. Hein[1], [1]*University of Natural Resources and Life Sciences, Vienna (BOKU), Austria, [2]Warsaw University of Life Sciences (SGGW), Poland, [3]Consultants in Aquatic Ecology and Engineering - Blattfisch, Austria, [4]Wassercluster Lunz - Inter University Centre for Water Research Lunz, Austria*
11:50-12:10	**[O26.05] Structure of aqatic food webs: A large-scale comparative study** A. Endrédi*, F. Jordán, *MTA Centre for Ecological Research, Hungary*	**[O27.05] Can land use adaption help grassland insects cope with climate change? Predictions from a stage-based simulation model using high-resolution climate data** J.A. Leins*[1], M. Drechsler[1], C. Gerling[2], K. Radtke[2], T. Banitz[1], V. Grimm[1], [1]*Helmholtz Centre for Environmental Research - UFZ, Leipzig, Germany, [2]Brandenburg University of Technology Cottbus - Senftenberg, Germany*	**[O28.04] Understorey identification through the generation of canopy base height models based on LiDAR data** S. Martín-García[1], I. Balenovic[2], L. Jurjevic*[2], I. Lizarralde[1], S. Bujan[3], R. Alonso-Ponce[1], [1]*Föra Forest Technologies SLL, Spain, [2]Croatian Forest Research Institute, Croatia, [3]University of Santiago de Compostela, Spain*	**[O29.04]**	**[GEN06.04] Prediction of dredging impact on fish habitat using DHABSIM** M. Sekine*, S. Matsunaga, *Yamaguchi University, Japan*
12:10-12:30	**Final discussion**	**[O27.04] Demersal fishing patterns: A simulated agent-based approach** M.J. Cruz[1], E. Giacomello[2],[3], A. Ressurreição[3],[4], A. Mendes[1],[6], P. Trigo[5],[7], T. Morato[2],[3], T. Dentinho[1], J. Cascalho*[1],[5], [1]*Universidade dos Açores, Portugal, [2]MARE – Marine and Environmental Sciences Centre, Portugal,*	**[O28.05] Importance of edge-tree detection when modelling tree and forest characteristics** A. Pascual, *University of Lisboa / Institute of Agronomy, Spain*	**[O29.05] Exploring behavioural interactions of aquatic organisms in three-dimensional space by visual sensing** C. Xia, *Yantai Institute of Coastal Zone Research, China*	**[GEN06.05] Intermediate-complexity models for landscape effects on fish communities in river networks** B. Rashleigh*[1], J. Ebersole[1], A. Brookes[1], M. Snyder[1], B. Waller[1], J. Massie[2], G. Boxall[3], [1]*U.S. Environmental Protection Agency,*

	[3]OKEANOS Centre, Portugal, [4]CCMAR Centre of Marine Sciences, Portugal, [5]Universidade de Lisboa, Portugal, [6]Universidade do Minho, Portugal, [7]Instituto Superior de Engenharia de Lisboa, Portugal			USA, [2]Florida International University, USA, [3]Amnis Opes Institute, USA
12:30-14:00	**Lunch and Poster Session 3** Exhibition foyer – 1st Floor **Editor Speed Review Session** Karajan Hall 1 - First floor			
14:00-15:40	**General session 7: Resilience and Sustainability** Europa Hall – 2nd Floor	**Symposium 30: Individual-based modelling - Aquatic and fish** Karajan Hall 1 – 1st Floor	**Symposium 31: Modelling Forest Ecosystems** Karajan Hall 2 – 1st Floor	**Symposium 32: Bioenergetics and ecological effects of stressors** Karajan Hall 3 – 1st Floor	**General session 8: Freshwater systems** Wolf Dietrich Hall 1 – 1st Floor
	Chair: Brian Fath	**Chair: Uta Berger**	**Chair: Aitor Ameztegui**	**Chair: Tin Klanjscek**	**Chair: Brenda Rashleigh**
14:00-14:20	**[GEN07.01] Multi-lake and long-term evidence for regime shifts of Yangtze subtropical shallow lakes** H.J. Wang*, H.Z. Wang, *Institute of Hydrobiology, Chinese Academy of Sciences, China*	**[O30.01] Eco-evolutionary dynamics in an individual-based multispecies model of marine ecosystems and its application to the North Sea** A. Morell*[1], N. Barrier[2], M. Travers-Trolet[1], Y.J. Shin[2], B. Ernande[1 ,3], *[1]IFREMER, France, [2]IRD, France, [3]IIASA, Austria*	**[O31.01] Modeling defoliation as a proxy for tree health: Comparison of feature-selection methods across multiple feature sets derived from hyperspectral data** P. Schratz*[1], J. Muenchow[1], E. Iturritxa[3], B. Bischl[2], A. Brenning[1], *[1]Friedrich-Schiller-University Jena, Germany, [2]LMU Munich, Germany, [3]NEIKER, Spain*	**[O32.01] Bioenergetic and ecological consequences of organismal damage** R. Nisbet, *University of California, Santa Barbara, USA*	**[GEN08.01] Cyanobacteria Assessment Network (CyAN) An API for dissemination of cyanobacteria satellite data & imagery** M. Galvin, B. Schaeffer, R. Parmar, K. Wolfe, J. Johnston*, *US EPA, USA*
14:20-14:40	**[GEN07.02] Additivity of pairwise perturbations in food webs: A step towards multi-species MSY assessment**	**[O30.02] Sustainable tourism in protected areas: A game theoretical approach** K.H. Pham Do, *Massey University, New Zealand*	**[O31.02] Forest management strategies for mitigation and adaptation to climate change: Modelling responses for forest's**	**[O32.02] Metabolic scaling of response to toxic stress** T. Klanjscek*[1 ,2], R.M. Nisbet[2], E.B. Muller[3], *[1]Rudjer Boskovic Institute,*	**[GEN08.02] A conceptual model for explaining the decadal change in tripton and its influences on**

	A. Móréh*[1], A. Endrédi[1], S. Piross[1], F. Jordán[1,2], *[1]MTA Centre for Ecological Research, Hungary, [2]Stazione Zoologica, Italy*		**production dynamics, carbon balances, and ecological, economical and disturbance indicators** B. Poudel*, J. Bergh, *Linnaeus University, Department of Forest and Wood technology, Sweden*	*Croatia, [2]University of California Santa Barbara, USA, [3]Norwegian University of Science and Technology, Norway*	**limnological processes in a shallow lake** T. Fukushima*[1,2], S. Komuro[1], T. Kitamura[1], Y. Nagahama[1], B. Matsushita[2], *[1]Ibaraki Kasumigaura Environmental Science Center, Japan, [2]University of Tsukuba, Japan*
14:40-15:00	**[GEN07.03] Prototype of social-ecological systems resilience using system dynamics modelling** B. Oliveira*[1], B. Fath[2,3], W. Liu[2], J. Harari[1], *[1]University of São Paulo, Brazil, [2]International Institute for Applied System Analysis, Austria, [3]Towson University, USA*	**[O30.03] Climate warming is predicted to enhance the negative effects of harvesting on high-latitude lake fish populations** A. Smalås*[1], J.F. Strøm[1], P-A. Amundsen[1], U. Dieckmann[2], R. Primicerio[1], *[1]UiT-The Arctic University of Norway, Norway, [2]International Institute for Applied Systems Analysis, Austria*	**[O31.03] Natural forest dynamics has more influence than climate change on the net ecosystem production of a mixed Mediterranean forest** G. Simioni*, G. Marie, H. Davi, N. Martin-Saint Paul, R. Huc, *INRA, France*	**[O32.03] Calibration and validation of the AQUATOX risk assessment model using the General Unified Threshold model of Survival (GUTS) framework** E. Blancher*[1], R. Park[2], J. Clough[1], B. Rashleigh[1], *[1]Moffatt & Nichol, USA, [2]Eco Modeling, USA, [3]Warren Pinnacle Consulting, USA*	**[GEN08.03] Simulating the effects of aquatic avifauna on wetland phosphorous dynamics** S. Adhurya*[1], S. Das[1], A. Banerjee[2], J. Mukherjee[3], S. Ray[1], *[1]Visva-Bharati University, India, [2]Jadavpur University, India, [3]Krishna Chandra College, India*
15:00-15:20	**[GEN07.04] Eco-evolutionary feedback under fisheries and predation pressures: Implications for population recovery and resilience** D. Jusufovski*[1], A. Kuparinen[2], *[1]Univeristy of Helsinki, Finland, [2]University of Jyväskylä, Finland*	**[O30.04] A physiologically inspired agent-based approach to model upstream passage of invasive fish at a lock-and-dam** D. Zielinski*[1], V. Voller[2], P. Sorensen[2], *[1]Great Lakes Fishery Commission, USA, [2]University of Minnesota, USA*	**[O31.04] Simulating tropical forest management under future climate change** U. Hiltner*[1,2], A. Huth[2,3], A. Bräuning[1], R. Fischer[2], *[1]Friedrich-Alexander-University Erlangen-Nuremberg, Germany, [2]Helmholtz-Centre for Environmental Research, Germany, [3]University of Osnabruck, Germany*	**[O32.04] Bioenergetics and disease ecology** C.J. Briggs*, F. Pfab, R.M. Nisbet, G.V. DiRenzo, *University of California, Santa Barbara, USA*	**[GEN08.04] Watershed scale urban runoff bifenthrin modeling using spatial and screening models** S. Sinnathamby*[1], M. Muche[2], Y. Yuan[2], J. Minucci[1], S.T. Purucker[2], *[1]Oak Ridge Institute for Science and Education (ORISE) Postdoctoral Research Participant at U.S. Environmental Protection Agency, USA, [2]U.S. Environmental Protection Agency*

| 15:20-15:40 | **[GEN07.05] Identifying ecological-memory patterns in drylands using remote sensing and state-of-the-art climate-reanalysis products** E. Kusch*[1],[3], A. Seddon[1], R. Davy[2], *[1]Universitetet i Bergen, Norway, [2]Nansen Environmental and Remote Sensing Center, Norway, [3]Universität Leipzig, Germany* | **[O30.05] Modelling impact of climate change and harvesting on freshwater fish populations** R. Primicerio*[1], D. Boukal[2],[3], S. Dijoux[2], A. Smalås[1], A. Sousa[3], M. Zucchetta[4], *[1]UiT The Arctic University of Norway, Norway, [2]University of South Bohemia, Czech Republic, [3]Czech Academy of Sciences, Czech Republic, [4]University Ca' Foscari, Italy* | **[O31.05] Development of climate sensitive growth functions for western North America's boreal tree species** F.O. Oboite*, P.G. Comeau, *University of Alberta, Canada* | **[O33.03] Ecological effects of temperature and reduced energy intake in sea turtles** N. Marn[1], M. Jusup[2], T. Legovic[1], S.A.L.M. Kooijman[3], T. Klanjscek*[1], *[1]Institute Rudjer Boskovic, Croatia, [2]Tokyo Institute of Technology, Japan, [3]Vrije Universiteit (VU), The Netherlands* | *Office of Research and Development, USA*
 [GEN08.05] Functional and statistical analysis as a powerful decision-making tool to prevent deterioration of water bodies: A real case of study at the Miño-Sil river basin (Northwest Spain) J. Martínez Torres*[1], M. Araújo[1],[2], E. Bocos[1], C. García Mata[1], J. Taboada Castro[2], *[1]Universidad Internacional de La Rioja, Spain, [2]Universidad de Vigo, Spain* |
| 15:40-16:10 | **Refreshment break**
 Exhibition foyer – 1st Floor | | | | |

16:10-17:50	General session 9: Community models Europa Hall – 2nd Floor	Symposium 33: Individual-based modelling - Energy budget models Karajan Hall 1 – 1st Floor	Symposium 34: Modelling Forest Ecosystems Karajan Hall 2 – 1st Floor	Symposium 35: Bioenergetics and ecological effects of stressors Karajan Hall 3 – 1st Floor	Symposium 36: Natural disturbance modelling Wolf Dietrich Hall 1 – 1st Floor
	Chair: Christelle Suppo	Chair: Volker Grimm	Chair: Juan A. Blanco	Chair: Marko Jusup	Chair: Alexander Peringer
16:10-16:30	**[GEN09.01] An ecologist's guide to infer drivers of community assembly using ABC** E. Barthelemy*[1], P. Denelle[2], G. Blanchard[3], C. Violle[2], F. Munoz[1], [1]*Université Grenoble Alpes, LECA, France,* [2]*CNRS, CEFE, France,* [3]*Institut Agronomique Calédonien, New Caledonia*	**[O33.01] Modelling population dynamics in mesocosms using an individual-based model coupled to a bioenergetics model** V. David*, R. Beaudouin, *INERIS, France*	**[O34.01] Understanding the climate change vulnerability and degradation of forest ecosystems in Nepal** V. Chitale*[1], S. Thapa[1], M. Matin[1], S. Adhikari[2], R. Maharjan[3], [1]*International Centre for Integrated Mountain Development, Nepal,* [2]*REDD IC, Ministry of Forests and Environment, Nepal,* [3]*Ministry of Forests and Environment, Nepal*	**[O35.01] Organism performance in variable environments -A plea for the full complexity in dynamic energy budget models** A. Gergs*[1], K. Rakel[2], T.G. Preuss[1], [1]*Bayer AG, Germany,* [2]*Research Institute gaiac, Germany*	**[O36.01] Disturbance modelling of plant community dynamics in managed grasslands** F. Gillet*, T. Moulin, C. Nicod, *Université Bourgogne Franche-Comté, France*
16:30-16:50		**[O33.02] Modelling the impacts of anthropogenic disturbances on marine populations** J. Nabe-Nielsen*[1], F.M. van Beest[1], V. Grimm[2], R.M. Sibly[3], J. Teilmann[1], [1]*Aarhus University, Denmark,* [2]*Helmholtz Centre for Environmental Research - UFZ, Germany,* [3]*University of Reading, UK*	**[O34.02] Hazard assessment for invasive species, citrus flatid planthopper (*Metcalfa pruinosa*), in South Korea** D-S. Lee, Y-S. Park*, *Kyung Hee University, Republic of Korea*	**[O35.02] Predicting post-natal energy intake of lesser black-backed gull chicks by Dynamic Energy Budget modeling** J. van der Meer*[1], S. van Donk[1], A. Sotillo[2], L. Lens[2], [1]*NIOZ, The Netherlands,* [2]*Ghent University, Belgium*	**[O36.02] Temporal dynamics of grasslands as sources of soil-dwelling insect pests: Implications for landscape-scale pest management strategies** S. Poggi*[1],[6], M. Sergent[1],[6], Y. Mammeri[3],[5], M. Plantegenest[2],[1], R. Le Cointe[1],[6], Y. Bourhis[4], [1]*INRA, France,* [2]*Agrocampus Ouest, France,* [3]*CNRS, France,* [4]*Rothamsted Research, UK,* [5]*Université de Picardie Jules Verne, France,* [6]*Université de Rennes 1, France*

16:50-17:10	[GEN09.03] Redundancy, extinction and robustness in rocky intertidal food webs L. Tralma[1], M.I. Ávila-Thieme*[2,3], S.A. Navarrete[2,4], P.A. Marquet[2,3], F.S. Valdovinos[6], P.A. Camus[1,7], [1]Universidad Catolica de la Santisima Concepcion, Chile, [2]Pontificia Universidad Catolica de Chile, Chile, [3]Instituto de Ecología y Biodiversidad (IEB), Chile, [4]Estación Costera de Investigaciones Marinas (ECIM), Chile, [5]Center for Applied Ecology and Sustainability (CAPES), Chile, [6]University of Michigan, USA, [7]Centro de Investigación en Biodiversidad y Ambientes Sustentables (CIBAS), Chile	[O32.05] Thermodynamic constraints and the evolution of parental provisioning in vertebrates M. Jusup*[1], M. Beekman[2], M. Thompson[2], [1]Tokyo Institute of Technology, Japan, [2]The University of Sydney, Australia	[O34.03] Modelling the impacts of climate change on the growth of deciduous forest species in India using a combination of process-based 3-PG model and high-resolution satellite data R. Gupta*, L.K. Sharma, Central University of Rajasthan, India	[O35.03] Modelling BPA effects on the three-spined stickleback population dynamics in mesocosms to better understand the populational effects R. Beaudouin*[1,2], V. David[1], [1]INERIS, METO, France, [2]UMR-I 02 SEBIO, France	[O36.05] Projections of future wilderness development in Central European forest ecosystems: Trophic rewilding as a requirement A. Peringer*[1], K-A. Schulze[1], [1]Nuertingen-Geislingen University, Germany, [2]Kassel University, Germany
17:10-17:30	[GEN09.04] A phenological model of the invasive box-tree moth *Cydalima perspectalis* C. Suppo*[1], A. Bras[2], C. Robinet[2], [1]University of Tours, France, [2]INRA, France	[O33.04] Investigating the seasonal effect of disturbance on the energetics and population dynamics of a marine predator C.A. Gallagher*[1], V. Grimm[2], J. Nabe-Nielsen[1], [1]Aarhus University,	[O28.01] A framework for predictive mapping of forest soil properties in mountain areas A. Simon*[1,2], C. Geitner[3], K. Katzensteiner[1], [1]University of Natural Resources and Life	[O35.04] Integrative parabola modeling for assessing recovery response action of melatonin in stressed fish M.C.S. Peter, ICEIB, University of Kerala, India	[O36.04] Self-regulating ecosystem dynamics in future wilderness development driven by large herbivore-wildfire-vegetation interactions - and relations to the megaherbivore theory

		Denmark, [2]Helmholtz-Centre for Environmental Research - UfZ, Germany	*Sciences Vienna, Austria, [2]Office of the Tyrolean Government, Austria, [3]University of Innsbruck, Austria*		K.A. Schulze*[1], G. Rosenthal[1], A. Peringer[2], *[1]Kassel University, Germany, [2]Nuertingen-Geislingen University, Germany*
17:30-17:50	**[GEN09.05] Theoretical and methodological grounds for spatial hierarchy assessment in geography and ecology** A. Krenke*, M. Puzachenko, *Institute of geography RAS, Russia*	**[O33.05] Fewer, fatter snail hosts make more human schistosome parasites than many, starved ones, says some people that built a bioenergetics individual-based transmission model** M. Malishev*, D.J. Civitello, *Emory University, USA*	**[O34.05] Climate model selection causes more uncertainty than ecological model complexity when estimating carbon pool trajectories in temperate pine forests in the Pyrenees** Y.H. Lo, J.A. Blanco*, E. González de Andrés, J.B. Imbert, F.J. Castillo, *Universidad Pública de Navarra, Spain*	**[O35.05] Effect of temperature and eutrophication on life history traits of the endemic bivalve *Pinna nobilis*: A dynamic energy budget approach** I. Haberle*, N. Marn, S. Geček, T. Klanjšček, *Ruder Boškovic Institute, Croatia*	**[O36.03] Synthesis on the contributions to natural disturbance modelling** A. Peringer, *Nuertingen-Geislingen University, Germany*
19:00-22:00	**Conference Dinner (ticketed event)** Stieglkeller Restaurant – Delegates attending will be walked from Salzburg Congress to the Stieglkeller				
Saturday 5 October 2019					
09:00-09:40	**[KN06] Xuehua Liu**, *Tsinghua University Beijing, China* Models for estimating wildlife distribution and assessing wildlife habitat Europa Hall – 2nd Floor				
09:40-10:10	**Refreshments break** Exhibition foyer – 1st Floor				
10:10-11:50	**General session 10: Biodiversity and conservation** Europa Hall – 2nd Floor	**Symposium 37: Individual-based modelling - Forest and plants** Karajan Hall 1 – 1st Floor	**General session 11: Agricultural systems** Karajan Hall 2 – 1st Floor	**Symposium 38: Applications of theoretical physics in ecology** Karajan Hall 3 – 1st Floor	**Symposium 39: Temporal aggregation of environmental data** Wolf Dietrich Hall 1 – 1st Floor
	Chair: Xuehua Liu	**Chair: Uta Berger**	**Chair: Madleine Barton**	**Chair: Sidney Gouveia**	**Chair: Svenia Behm**
10:10-10:30	**[GEN10.01] Honeybee colony model comparison for regulatory application** S.T. Purucker*[1], J.M. Minucci[2], R. Tornero-Velez[1], *[1]US EPA, USA, [2]ORISE, USA*	**[O37.01] New insights on the behaviour of alternative types of individual-based tree models for natural forests** A. Pommerening*[1], H. Häbel[2], M. Myllymäki[2], *[1]Swedish University of*	**[GEN11.01] Modelling population dynamics of an aphid pest and its parasitioid wasp across agricultural landscapes to inform management strategies**	**[O38.01] Towards ecophysica - challenges to model macroecological patterns from physical principles** S. Gouveia*[1], J. Rubalcaba[2], *[1]Federal*	**[O39.01] Probabilistic forecasting of an air quality index** J.W. Taylor*[1], J. Jeon[1,2], *[1]University of Oxford, UK, [2]University of Bath, UK*

Agricultural Sciences (SLU), Sweden, [2]Natural Resources Institute Finland (Luke), Finland

M. Barton*[1], H. Parry[1], M. Binns[1], T. Heddle[1], A. Hoffmann[1], J. Holloway[1], D. Severston[1], P. Umina[1], M. van Helden[1], S. Ward[1], *[1]CSIRO, Australia, [2]SARDI, Australia, [3]University of Melbourne, Australia, [4]DPI, Australia, [5]DPIRD, Australia, [6]cesar, Australia*

University of Sergipe, Brazil, [2]Montana University, USA

| 10:30-10:50 | **[GEN10.02] Earthworm stage structured population dynamic model: An ecological category approach** D. Hackenberger Kutuzovic, Z. Loncaric*, B. Hackenberger Kutuzovic, *Josip Juraj Strossmayer University of Osijek, Croatia* | **[O37.02] Modelling Mediterranean pine stands dynamics: A first functional approach with the RReShar model** M. Helluy*[1],[2], P. Balandier[2], N. Donès[3], N. Beudez[3], F. de Coligny[3], B. Prévosto[2], *[1]AgroParisTech, France, [2]Irstea, France, [3]INRA, France* | **[GEN11.02] Using a simulation model to help quantify the economic impact of Peristenus relictus establishment on host Lygus spp. Populations in California strawberries** E. Bick*[1],[4], D. Nieto[2], C. Pickett[3], *[1]University of California, Davis, USA, [2]Driscoll's Berries, USA, [3]California Department of Food and Agriculture, USA, [4]University of Copenhagen, USA* | **[O38.02] The size distribution of components in an ecosystem: Using a physical model of random matrices** V. Soukhovolsky, *V.N.Sukachev Institute of Forest SB RAS, Krasnoyarsk, Russia* | **[O39.02] Spatiotemporal estimation of roadside NO$_2$ levels with the use of non-linear autoregressive artificial neural networks with exogenous inputs** S.M. Cabaneros*[1], J.K. Calautit[2], B. Hughes[1], *[1]University of Strathclyde, UK, [2]University of Nottingham, UK* |

10:50-11:10	**[GEN10.03] Using GPS relocation data for exploring fission-fusion behavior of Sumatran Elephants (Elephas maximus spp sumatramus) in Bukit Tigapuluh landscape** M-A. Imron*[1], M-H. Fikriansyah[1], A-M. Mossbrucker[2], *[1]Universitas Gadjah Mada, Indonesia, [2]Frankfurt Zoological Society, Indonesia*	**[O37.03] Resources in individual-based plant population models - re-evaluating our concept of 'competition'** R. Peters*[1], J. Bathmann[2,1], M. Walther[2,1], U. Berger[1], *[1]TU Dresden, Germany, [2]UFZ Leipzig, Germany*	**[GEN11.03] Implementing ecological functions in a land use change model to assess impacts of crop expansion and overstocking in a Kenyan savanna** B. Warth*, C. Marohn, F. Asch, *University of Hohenheim, Inst. of Agricultural Sciences in the Tropics (Hans-Ruthenberg-Institute), Germany*	**[O38.03] Statistical mechanics for spatial modelling: Predicting the influence of microclimatic heterogeneity in ectotherm populations** J. Rubalcaba*[1], S. Gouveia[1], *[1]Universidad Rey Juan Carlos, Spain, [2]Federal University of Sergipe, Brazil*	**[O39.03] Semi- and nonparametric modeling of environmental time series distributions** H. Haupt*, J. Schnurbus, *University of Passau, Germany*
11:10-11:30	**[GEN10.04] Landscape stability and climatic factors change in the forest and grassland ecosystems in Tibetan Plateau** Z. Li*, B. Zhao, S. Wang, *Peking University, China*	**[O37.04] Compete or defend? The role of biotic factors during alien plant establishment assessed with an individual-based model** J. Radny, K.M. Meyer*, *University of Göttingen, Germany*	**[GEN11.04] Momentousness of timing: Vulnerability of semi-arid rangeland systems to increased variability in temporal patterns of rainfall events as predicted by future climate change** P. Fust*[1,2], E. Schlecht[1], *[1]Kassel University, Germany, [2]Leuphana University, Germany*	**[O38.04] Quantum physical theory applied to the analysis of species distribution and diversity** A.M. Barbosa*[1], J.W. Bull[2], R. Real[3], *[1]CICGE, Portugal, [2]Kent University, UK, [3]Malaga University, Spain*	**[O39.04] The impact of temporal aggregation on the assessment and prediction of air quality** S. Behm*, M. Fritsch, H. Haupt, *University of Passau, Germany*
11:30-11:50	**[GEN10.05] Predicting wolf expected dispersal routes through a lowland corridor merging ensemble models calibrated in different geographical areas** O. Dondina*[1], V. Orioli[1], F. Merli[1], L. Bani[1], A. Meriggi[2], *[1]University of Milano-Bicocca, Italy,*	**[O37.05] An individual-based model to assess the interplay between insect flower-constancy and flower patch arrangement on pollination** A. Dorin*[1], T. Taylor[1], A.G. Dyer[2,1], *[1]Monash University, Australia, [2]RMIT University, Australia*	**[GEN11.05] Connecting process-based modelling with remote sensing and in-situ measurements to better monitor and predict the dynamics of soil and plant properties** E. Wang*, D. He, *CSIRO, Australia*	**[O38.05] Dark biodiversity, the unobserved but detectable influence of the ecosystems on the species distribution** R. Real, *Universidad de Málaga, Spain*	**[O39.05] Time series diagnostics and forecasting of rainfall data** M. Fritsch[1], H. Haupt*[1], J. Schnurbus[1], P. Sibbertsen[2], K. Wenger[2], *[1]University of Passau, Germany, [2]University of Hannover, Germany*

	2University of Pavia, Italy				
11:50-13:00	**Lunch** Exhibition foyer – 1st Floor				
13:00-14:40	**General session 12: Biodiversity and conservation** Europa Hall – 2nd Floor	**Symposium 40: Individual-based modelling - Agriculture and land-use** Karajan Hall 1 – 1st Floor	**Symposium 41: Vegetation models and remote sensing** Karajan Hall 2 – 1st Floor	**Symposium 42: Web services and data infrastructures** Karajan Hall 3 – 1st Floor	**General session 13: Modelling global change** Wolf Dietrich Hall 1 – 1st Floor
	Chair: Xuehua Liu	**Chair: Uta Berger**	**Chair: Franziska Taubert**	**Chair: John M. Johnston**	**Chair: Patrick Schwager**
13:00-13:20	**[GEN12.01] Does positional error affect fine-scale species distribution models?** L. Gabor*[1], V. Moudry[1], V. Lecours[2], M. Malavasi[1], V. Bartak[1], T. Vaclavik[3,4], *1Czech University of Life Sciences Prague, Czech Republic, 2University of Florida, USA, 3Palacký University Olomouc, Czech Republic, 4UFZ – Helmholtz Centre for Environmental Research, Germany*	**[O40.01] Agent-based modelling of interactions between vertical greenery systems and air pollutants using a case study of Yerevan, Armenia** A.S. Akopov*[1,2], L.A. Beklaryan[1], A.K. Saghatelyan[3], *1National Research University Higher School of Economics, Russia, 2Central Economics and Mathematics Institute of Russian Academy of Science, Russia, 3Center for Ecological-Noosphere Studies of the National Academy of Sciences, Armenia*	**[O41.01] The dynamics of the Amazon forest and the role of forest structure - linking vegetation modelling and remote sensing** A. Huth*[1], E. Roedig[1], R. Fischer[1], F. Taubert[1], A. Rammig[2], *1Helmholtz Centre of Environmental Research - UFZ, Germany, 2Technical University Munich, Germany*	**[O42.01] Using web services to construct general workflows for simulating flow and environmental contaminants in streams** C.D. Knightes*[1], R. Parmar[1], J. Sitterson[2], B. Avant[2], D. Smith[3], J. Koblich[2], K. Wolfe[1], M. Galvin[1], T. Purucker[1], J. Johnston[1], *1US Environmental Protection Agency, USA, 2Oak Ridge Associated Universities (ORAU), USA, 3Independent Contractor, USA*	**[GEN13.01] A simple approach to simulate regional grassland dynamics with a process-based crop model** H.E. Ahrends, A. Enders, G. Kraus, A.K. Srivastava*, T. Gaiser, *University of Bonn, Germany*

13:20-13:40	**[GEN12.02] Ancient trees in English wood pastures: Discovering ancient legacies using zero-inflated regression models** V. Nolan*[1], T. Reader[1], F. Gilbert[1], N. Atkinson[2], [1]*University of Nottingham, UK,* [2]*Woodland Trust, UK*	**[O40.02] PeatFire: An individual-based model for fire ignition and spreading in a tropical peatland ecosystem** M.A. Imron[1], K. Widyastuti*[2], S.T. Pradopo[1], H. Suryatmojo[1], B.M. Sopha[1,3], A. Spessa[1,4], U. Berger[2], [1]*Universitas Gadjah Mada, Indonesia,* [2]*Technische Universität Dresden, Germany,* [3]*Swansea University, UK,* [4]*The Australian National University, Australia*	**[O41.02] Global patterns of tropical forest fragmentation** F. Taubert*[1], R. Fischer[1], J. Groeneveld[1,2], S. Lehmann[1], M. Müller[1], E. Rödig[1], T. Wiegand[1,3], A. Huth[1,4], [1]*Helmholtz Centre for Environmental Research – UFZ, Germany,* [2]*TU Dresden, Germany,* [3]*German Centre for Integrative Biodiversity Research (iDiv), Germany,* [4]*University Osnabrück, Germany*	**[O42.02] Watershed clustering for Eco-hydrologic assessment using machine learning** M. Muche*[1], S. Sinnathamby[2,1], J. Johnston[1], [1]*US Environmental Protection Agency, USA,* [2]*Oak Ridge Institute for Science and Education (ORISE), US EPA, USA*	**[GEN13.02] Global primate spatial distribution dynamics: The impacts of the climate change and it's implication to conservation** A.A. Condro*, L.B. Prasetyo, S.B. Rushayati, *IPB University, Indonesia*
13:40-14:00		**[O40.03] Ecological impacts of energy development and other human disturbances in a rangeland ecosystem** A. Cisneros-Pineda*, D. Aadland, J. Tschirhart, *University of Wyoming, USA*	**[O41.03] An analysis of forest biomass sampling strategies across scales** J. Hetzer*[1], R. Fischer[1], H-J. Dobner[2], A. Huth[1], [1]*Helmholtz Centre for Environmental Research GmbH, Germany,* [2]*Leipzig University of Applied Sciences, Germany*	**[O42.03] Data provisioning micro services and workflows for hydrological and water quality modelling** R. Parmar*[1], C. Knightes[1], D. Smith[2], K. Wolfe[1], M. Galvin[1], J. Koblich[3], J. Sitterson[3], J. Johnston[1], T. Purucker[1], [1]*United States Environmental Protection Agency, USA,* [2]*Independent Contractor, USA,* [3]*Oak Ridge Associated Universities, USA*	**[GEN13.03] Consensus modelling approach: Transferability and uncertainties for fire occurrence probability** M. Perrault-Hébert[1,2], F. Girard*[1,2], Y. Boucher[3,4], R. Fournier[2,5], N. Mansuy[6], [1]*Université de Montréal, Canada,* [2]*Centre d'étude de la Forêt, Canada,* [3]*Direction de la Recherche Forestière, Canada,* [4]*Université du Québec à Montréal, Canada,* [5]*Université de Sherbrooke, Canada,* [6]*Centre de foresterie du Nord, Canada*
14:00-14:20	**[GEN12.04] Management of estuarine restoration: Modelling species distribution as an integrative tool**	**[O40.04] Multi-agent modeling, a lab experiment for building sustainable management policies in coastal and marine**	**[O41.04] A generic regionally transferable model for analyzing the influence of different management on grasslands**	**[O42.04] PiSCES: Pi(scine) Stream Community Estimation System - A web-based toolkit** M. Cyterski*[1], M. Galvin[1], R. Parmar[1], J. Johnston[1],	**[GEN13.04] Carbon circulation in temperate coastal food webs exposed to heat waves** M. Ito*, M. Scotti, *GEOMAR Helmholtz*

	E. Ramos*, M. Recio, C. Galván, G. Aragón, A. García, A. Puente, *Universidad de Cantabria, Spain*	**socio-ecological systems** **Results from the SAFRAN project, a prospective exercise in the Marine Park of the Golfe du Lion** E. Mosseri*[1], C. Boemare[1], [1]*Centre National de la Recherche Scientifique, France,* [2]*Ecole des Hautes Etudes en Sciences Sociales, France*	J.S. Schmid*, F. Taubert, A. Huth, *Helmholtz Centre for Environmental Research - UFZ, Germany*	D. Smith[1], A. Ignatius[2,1], L. Prieto[1], C. Barber[1], K. Wolfe[1], [1]*US Environmental Protection Agency, USA,* [2]*University of North Georgia, USA*	*Centre for Ocean Research Kiel, Germany*
14:20-14:40	**[GEN12.05] Modelling habitat selection of the cave-dwelling edible-nest swiftlet on Baratang Island of the Andaman and Nicobar Islands, India** D. Kawalkar*, S. Manchi, *Sálim Ali Centre for Ornithology and Natural History, India*	**Final discussion**	**[O41.05] Linking forest modelling and remote sensing of canopy structure to estimate biomass stocks and dynamics** N. Knapp*, R. Fischer, A. Huth, *Helmholtz Centre for Environmental Research - UFZ, Germany*	**[O42.05] A reduced complexity model and online interface facilitate scenario analyses in coastal marine ecosystems** M.J. Brush, *Virginia Institute of Marine Science, USA*	**Final discussion**
14:40-15:00	**Refreshment break** Exhibition foyer – 1st Floor				
15:00 -15:30	**Poster awards and Conference closing address** Europa Hall – 2nd Floor				