

**GLOBAQUA Final Conference:
Water river management
under water scarcity
and multiple stressors**

17-19 December 2018, Barcelona (Spain)



Institute of Environmental Assessment
and Water Research (ID/EA)



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SPANISH COUNCIL OF SCIENTIFIC RESEARCH



RESIDÈNCIA D'INVESTIGADORS

FINAL PROGRAMME



GLOBAQUA Final Conference:

Water river management
under water scarcity and
multiple stressors

17-19 December 2018, Barcelona (Spain)

Scientific Committee:

- **Damià Barceló**, Institute of Environ. Assess. and Water Research (IDAEA-CSIC), Spain
- **Marianne Köck**, Institute of Environ. Assess. and Water Research (IDAEA-CSIC), Spain
- **Antoni Ginebreda**, Institute of Environ. Assess. and Water Research (IDAEA-CSIC), Spain
- **Ralf Ludwig**, Ludwig-Maximilians-Universität München (LMU), Germany
- **Alberto Bellin**, University of Trento (UNITN), Italy
- **Peter Grathwohl**, Tuebingen University (EKUT), Germany
- **Radmila Milačič**, Jožef Stefan Institute (JSI), Ljubljana, Slovenia
- **Isabel Muñoz**, University of Barcelona (UB), Barcelona, Spain
- **Arturo Elosegi**, University of the Basque Country (UPV-EHU), Spain
- **Vicenç Acuña**, Catalan Institute for Water Research (ICRA), Girona, Spain
- **Phoebe Koundouri**, Athens University of Economics and Business (ATHENA), Greece
- **Jochen Froebrich**, Stichting Dienst Landbouwkundig Onderzoek (Alterra), The Netherlands
- **Alberto Pistocchi**, Joint Research Centre (JRC-IES), Italy
- **Nick Volvoulis**, Imperial College London (IMPERIAL), UK
- **Gabriele Sacchetti**, AEI FORIA SL, Italy

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Springer



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Editors: Marianne Köck Schulmeyer and Damià Barceló Cullerés

With contributions of all conference participants

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▪ Preface

This conference is the final one of the project GLOBAQUA (Managing the effects of multiple stressors on aquatic ecosystems under water scarcity). The GLOBAQUA project is a five year's project and has assembled a multidisciplinary consortium in order to study the interaction of multiple stressors within the frame of strong pressure on water resources. GLOBAQUA assesses the effects of water scarcity on aquatic ecosystems by focusing on six river basins (Adige, Anglian, Ebro, Evrotas, Sava and Souss Massa). These basins encompass a rich set of socio-ecological conditions and a wide geographic coverage, and focus on a specific set of stressors to illustrate different management scenarios.

Following this context, this interdisciplinary conference untitled *Water river management under water scarcity and multiple stressors*, is a platform for exchange and discussion of innovative scientific findings and methods in aquatic ecosystems research. It focuses on the main results of the project after five years of comprehensive work. Results were generated under four topics: STRESSORS (understanding the mechanisms behind the multiple stressors acting in each case study), RECEPTORS (analysing the effects of the stressors on biodiversity and ecosystem functioning), IMPLICATIONS (studying the implications for ecosystem services and socio-economy) and MANAGEMENT & POLICY (dealing with relevant issues associated to the impact of multiple stressors on water quality, quantity, and ecosystems, as well as on the potential implementation of the major findings on European policy). We are delighted to invite anyone working on these topics in order to share knowledge in water resources management with the focus on a better implementation of the WFD under present and future climate change scenario.

That being said, we are very pleased to welcome you in Barcelona. We hope you will enjoy your participation at the GLOBAQUA conference and have an exciting and profitable experience. The coordination would like to thank all GLOBAQUA members for working hard during these five years, and also all speakers, participants and supporters for their contributions on this fruitful conference. We acknowledge the valuable support of the European Union's Seventh Programme, Elsevier and Springer for the awards and also your participation, otherwise this conference would not be either possible or successful.

Marianne Köck Schulmeyer & Damià Barceló

Barcelona, 17th December 2018

FINAL PROGRAMME

Monday 17th December 2018

09.15 – 21:00 GLOBAQUA 5th General Assembly (only for GLOBAQUA members)

Tuesday 18th December 2018

09.00 – 09.40 REGISTRATION

09.40 **Welcome**
Damià Barceló^{1,2}

¹ Institute of Environmental Assessment and Water Research (IDAEA-CSIC), Barcelona, Spain

² Catalan Institute for Water Research (ICRA), Girona, Spain

Session 1: Global change & Hydrology

Chairpersons: Gabriele Chiogna (TUM, Germany) & Grigory Nikulin (SMHI, Sweden)

10.00 – 10.20 **Keynote: Assessing global change impacts on stressors for aquatic ecosystems at the basin scale**

Ralf Ludwig¹, Alberto Bellin², David Gampe¹, Verena Huber Garcia¹, Stefanie Lutz³, Bruno Majone², Ralf Merz³, Grigory Nikulin⁴, Olga Vigiak^{1,5}, Janja Vrzel¹

¹ Ludwig-Maximilians-Universitaet Muenchen (LMU), Munich, Germany

² University of Trento (UNITN), Trento, Italy

³ Environmental Research Center (UFZ), Leipzig, Germany

⁴ Swedish Meteorological Hydrological Institute (SMHI), Norköpping, Sweden

⁵ Joint Research Center (JRC), Ispra, Italy

10.20 – 10.40 **Predicting biochemical oxygen demand in European freshwater.**

Olga Vigiak^{1,2}, Bruna Grizzetti¹, Angel Udias-Moinelo¹, Michela Zanni¹, Chiara Dorati¹, Faycal Bouraoui¹ and Alberto Pistocchi¹

¹ Joint Research Center (JRC), Ispra, Italy

² Ludwig-Maximilians-Universitaet Muenchen (LMU), Munich, Germany

10:40 – 11:00 **Water quality trends and drivers in European rivers**

Elena Diamantini¹, Stefanie R. Lutz², Stefano Mallucci³, Bruno Majone⁴, Ralf Merz², and Alberto Bellin⁴

¹ Autonomous Province of Trento, Trento, Italy

² Environmental Research Center (UFZ), Leipzig, Germany

³ University of Trento, Fondazione Edmund Mach, Center Agriculture Food Environment, Italy

⁴ University of Trento, Department of Civil, Environmental and Mechanical Engineering, Trento, Italy

Poster session: Session 1&2

Chairperson: Marianne Köck

11.00 – 11.20 Flash poster presentations Session 1+2: P1.2 / P1.3 / P2.1 / P2.2

11.00 – 11.45 Poster session / coffee break

Session 1: Global change & Hydrology

Chairpersons: Gabriele Chiogna (TUM, Germany) & Grigory Nikulin (SMHI, Sweden)

11.45 – 12.05 **ERT and DTS time-lapse for the monitoring of hyporheic zone**

G. Cassiani¹, J. Boaga¹, L. Busato¹, M.T. Perri¹, B. Majone², A. Bellin²

¹ Department of Geosciences, University of Padova (UNIPD), Italy

² Department of Environmental and Mechanical Civil Engineering, University of Trento (UNITN), Italy

- 12.05 – 12.25 **Understanding of groundwater and surface water as a single system in the Ljubljansko polje, Slovenia**
Janja Vrzel¹, Ralf Ludwig¹, Nives Ogrinc²
¹ Ludwig-Maximilians-Universitaet Muenchen (LMU), Munich, Germany
² Jozef Stefan Institute (JSI), Ljubljana, Slovenia
- 12.25 – 12.45 **ESPRES: Efficient Strategies for anthropogenic Pressure Reduction in European waterSheds**
Angel Udias¹, Alberto Pistocchi¹, Bruna Grizzetti¹, Olga Vigiak^{1,2}, Faycal Bouraoui¹, Emiliano Gelati¹ and Ad De Roo¹
¹ Joint Research Center (JRC), Ispra, Italy
² Ludwig-Maximilians-Universitaet Muenchen (LMU), Munich, Germany
- 12.45 – 13:45 Poster session / lunch
- Session 2: Fate & Risk assessment of pollutants**
 Chairpersons: Sandra Pérez (CSIC, Spain) & Sergi Sabater (ICRA, Spain)
- 13.45 – 14.05 **Keynote: Occurrence of emerging contaminants and microplastics in several hot spots of Saudi Arabia. Bioaccumulation and plant uptake from wastewaters used in agriculture.**
Yolanda Picó¹, Rodrigo Alvarez-Ruiz¹, Mohamed A. El-Sheikh², Ahmad H Alfarhan², Hamad O. Alshahrani² and Damia Barceló^{2,3,4}
¹ Desertification Research Centre (CIDE – SAMA-UV), Joint Research Centre CSIC-UV-GV, Moncada, Spain
² Department of Botany and Microbiology, College of Science, King Saud University, Saudi Arabia
³ Institute of Environmental Assessment and Water Research (IDAEA-CSIC), Barcelona, Spain
⁴ Catalan Institute for Water Research (ICRA), Girona, Spain
- 14.05 – 14.25 **Assessment of the regulated POPs in fish from the Sava River Basin against the legislated quality standard values.**
Manuela Ábalos¹, Damià Barceló¹, Jordi Parera¹, Marinel la Farré¹, Marta Llorca¹, Ethel Eljarrat¹, Monica Giulivo², Ettore Capri², Momir Paunović³, Radmila Milačič⁴, Esteban Abad¹
¹ Institute of Environmental Assessment and Water Research (IDAEA-CSIC), Barcelona, Spain
² Institute of Agricultural and Environmental Chemistry, UCSC di Piacenza, Piacenza, Italy
³ University of Belgrade, Faculty of Biology (IBISS), Belgrade, Serbia
⁴ Jožef Stefan Institute (JSI), Ljubljana, Slovenia
- 14.25– 14.45 **Potentially toxic elements in water and sediments of the Sava and Evrotas Rivers under variable water discharges**
Radmila Milačič^{1,2}, Tea Zuliani^{1,2}, Janja Vidmar^{1,2}, Ana Drinčić^{1,2}, Matic Bergant^{1,2}, Eleni Kalogianni³, Evangelia Smeti³, Nikolaos Skoulikidis³, Janez Ščančar^{1,2}
¹ Jožef Stefan Institute (JSI), Ljubljana, Slovenia
² Jožef Stefan International Postgraduate School, Ljubljana, Slovenia
³ Hellenic Centre for Marine Research (HCMR), Athens, Greece
- 14.45 – 15:05 **Pollutants in mussels and fish – The Sava River case study**
Tea Zuliani^{1,2}, Janja Vidmar¹, Doris Potočnik¹, Nives Ogrinc^{1,2}, Janez Ščančar^{1,2}, Radmila Milačič^{1,2}, Milena Horvat^{1,2}, Marina Piria³, Predrag Simonović⁴ and Momir Paunović⁵
¹ Jožef Stefan Institute (JSI), Ljubljana, Slovenia
² Jožef Stefan International Postgraduate School, Ljubljana, Slovenia
³ University of Zagreb, Faculty of Agriculture (UNIZG-FAZ), Zagreb, Croatia
⁴ University of Belgrade, Faculty of Biology, Belgrade, Serbia
⁵ University of Belgrade, Institute for Biological Research Siniša Stanković (IBISS), Belgrade, Serbia

- 15:05 – 15:25 **Pharmaceutical Uptake In Wild Fish**
Juan Manuel Peña-Herrera¹, Nicola Montemurro¹, Antoni Ginebreda¹, Mira Petrovic², Sandra Pérez¹, Damià Barceló^{1,2}
¹ Institute of Environmental Assessment and Water Research (IDAEA-CSIC), Barcelona, Spain
² Catalan Institute for Water Research (ICRA), Girona, Spain
- 15:25 – 15:45 **Sediment-associated pollutants: Transport mechanisms and factors governing river sediment vulnerability**
Marc Schwientek¹, Hermann Rügner¹, Bruno Majone², Alberto Bellin², Nikos T. Skoulidakis³, Eleni Kalogianni³, Radmila Milacic⁴, Momir Paunovic⁵, Miren López de Alda⁶, Ulrike Scherer⁷, Touraj Nasrabadi⁸, Peter Grathwohl¹
¹ Eberhard Karls University of Tübingen, Tübingen, Germany
² Department of Civil, Environmental and Mechanical Engineering, University of Trento, Italy
³ Hellenic Centre for Marine Research (HCMR), Anavyssos, Greece
⁴ Jožef Stefan Institute (JSI), Ljubljana, Slovenia
⁵ University of Belgrade, Institute for Biological Research Siniša Stanković (IBISS), Belgrade, Serbia
⁶ Institute of Environmental Assessment and Water Research (IDAEA-CSIC), Barcelona, Spain
⁷ Water Chemistry and Water Technology, Karlsruhe Institute of Technology (KIT), Karlsruhe, Germany
⁸ Graduate Faculty of Environment, University of Tehran, Tehran, Iran

Poster session: Session 3

Chairperson: Marianne Köck

16.00– 16.20 Flash poster presentations Session 3: P3.1 / P3.2 / P3.3 / P3.4

15:45 – 16.30 Poster session / coffee break

Session 3: Multiple stressors & Biological response

Chairpersons: Marina Piria (UNIZG-FAZ, Croatia) & Esteban Abad (CSIC, Spain)

- 16.30 – 16.50 **Keynote: Relationships of multiple stressors and biological responses in freshwaters: an analysis across scales and ecosystems**
Daniel Hering¹, Sebastian Birk¹
¹ University of Duisburg-Essen, Department of Aquatic Ecology, Essen, Germany
- 16.50 – 17:10 **Keynote: Biodiversity and ecosystem changes to multiple pressures: from basin to experimental approach**
I. Muñoz¹, N. de Castro-Català¹, A. Bellin², C. Borrego³, S. Dolédec⁴, A. Eloisei⁵, E. Kalogianni⁶, M. Paunovic⁷ and S. Sabater³
¹ University of Barcelona (UB), Barcelona, Spain
² University of Trento (UNITN), Trento, Italy
³ Catalan Institute for Water Research (ICRA), Girona, Spain
⁴ University Claude Bernard Lyon I, Villeurbanne, France
⁵ University of the Basque Country (UPV/EHU), Leioa, Spain
⁶ Hellenic Centre for Marine Research (HCMR), Athens, Greece
⁷ University of Belgrade, Institute for Biological Research Siniša Stanković (IBISS), Belgrade, Serbia

- 17:10 – 17:30 **Output of GLOBAQUA WP7 ECOSYSTEM: Incorporating ecosystem functioning into river monitoring and assessment**
Elosegi A¹, von Schiller D¹, Acuña V², Aristi I¹, Arroita M¹, Basaguren A¹, Bellin A³, Boyero L¹, Butturini A⁴, Ginebreda A⁵, Kalogianni E⁶, Larrañaga A¹, Majone B³, Martínez A¹, Monroy S¹, Muñoz I⁴, Paunovic M⁷, Pereda O¹, Petrovic M², Pozo J¹, Rodríguez-Mozaz S⁵, Rivas D⁵, Sabater S², Sabater F⁴, Skoulikidis N⁶, Smeti E⁶, Solagaistua L¹, Vardakas L⁶
¹ University of the Basque Country (UPV/EHU), Bilbao, Spain
² Catalan Institute for Water Research (ICRA), Girona, Spain
³ University of Trento (UNITN), Trento, Italy
⁴ University of Barcelona (UB), Barcelona
⁵ Institute of Environmental Assessment and Water Research (IDAEA-CSIC), Barcelona, Spain
⁶ Hellenic Centre for Marine Research (HCMR), Athens, Greece
⁷ University of Belgrade, Institute for Biological Research Siniša Stanković (IBISS), Belgrade, Serbia
- 17:30 – 17:50 **Complex responses of a biofilm to sewage outflow: a mesocosm experimental approach**
Laia Sabater-Liesa¹, Nicola Montemurro¹, Carme Font², Antoni Ginebreda¹, Juan David González-Trujillo², Natalia Mingorance², Sandra Pérez¹ and Damià Barceló^{1,2}
¹ Institute of Environmental Assessment and Water Research (IDAEA-CSIC), Barcelona, Spain
² Catalan Institute for Water Research (ICRA), Girona, Spain
- 17:50 – 18:10 **Instream wood structure use by fish in an intermittent river**
Eleni Kalogianni¹, Leonidas Vardakas¹, Aikaterini Vourka¹, and Nikolaos Th. Skoulikidis¹
¹ Hellenic Centre for Marine Research (HCMR), Anavyssos, Greece
- 18:10 – 18:30 **Lipid composition and metabolism in freshwater organisms under anthropic stressors, Part I: The metabolomic approach**
Lopez-Doval, J.C.¹, Serra-Compte, A.¹, Rodríguez-Mozaz, S.¹ Barceló, D.,^{1,2} Sabater, S.^{1,3}
¹ Catalan Institute for Water Research (ICRA), Girona, Spain
² Institute of Environmental Assessment and Water Research (IDAEA-CSIC), Barcelona, Spain
³ Institute of Aquatic Ecology, University of Girona (GRECO), Girona, Spain
- 18:30 – 18:50 **Multiple trait-based approaches in GLOBAQUA: what have we learned?**
Sylvain Dolédec¹
¹ LEHNA, University Claude Bernard Lyon 1, Villeurbanne, France
- 20.30 Social dinner

How to arrive
(11min walking
from the venue)



Wednesday 19th December 2018**Session 4: Assessment and prioritization of pollutants**

Chairpersons: Antoni Ginebreda (CSIC, Spain) & Federico Ferrari (AEIFORIA, Italy)

- 09.15 – 09.33 **Keynote: SOLUTIONS for monitoring, assessment and prioritization of micropollutants in European river basins**
Werner Brack^{1,2}, Rolf Altenburger^{1,2}, Jos van Gils³, John Munthe⁴ and Jaroslav Slobodnik⁵
¹ Helmholtz Centre for Environmental Research (UFZ), Leipzig, Germany
² RWTH Aachen University, Germany
³ Deltares Delft, The Netherlands
⁴ IVL Swedish Environmental Research Institute, Gothenburg, Sweden
⁵ Environmental Institute, Kos, Slovak Republic
- 09.35 – 09.55 **Keynote: Main issues to reach good chemical status in Catalan surface water bodies. Next challenges**
Antoni Munne¹, Carolina Solà¹, Mònica Flo¹, Mercè Figueras¹, Anna Terrats¹, Carme Serena¹ and Antoni Ginebreda²
¹ Catalan Water Agency (ACA), Barcelona, Spain
² Institute of Environmental Assessment and Water Research (IDAEA-CSIC), Barcelona, Spain
- 09.55 – 10.15 **Managing freshwater ecosystems to maintain and improve their functions and the benefits they deliver to us: The WFD Paradigm**
T. Giakoumis, N. Voulvoulis¹
¹ Centre for Environmental Policy, Imperial College London (IMPERIAL), United Kingdom
- 10.15 – 10.35 **Occurrence and prioritization of priority and emerging contaminants in three river basins studied within GLOBAQUA project**
M. Petrovic^{1,2}, A. Ginebreda³, R. Milacic⁴, N. Skoulikidis⁵, A. Bellin⁶, S. Sabater^{1,7}, D. Barcelo^{1,3}
¹ Catalan Institute for Water Research (ICRA), Girona, Spain
² ICREA, Barcelona, Spain
³ Institute of Environmental Assessment and Water Research (IDAEA-CSIC), Barcelona, Spain
⁴ Institut Jozef Stefan (JSI), Ljubljana, Slovenia
⁵ Hellenic Centre for Marine Research (HCMR), Athens, Greece
⁶ University of Trento (UNITN), Italy
⁷ University of Girona, Spain
- 10.35 – 10.55 **WaterProtect: a multi-actor approach to enable drinking water protection at the lower basin of the Llobregat River**
 Maria Vittoria Barbieri ¹, Cristina Postigo ¹, Raimon Roda ², Elena Isla ², Gemma Frances ², Anna Casanovas ², Enric Queral ³, Vinyet Sola ³, Jordi Martin ⁴, Agustina de la Cal ⁴, Maria Rosa Boleda ⁴, Antoni Ginebreda ¹, Damià Barceló ^{1,5}, Miren López de Alda ^{1*}
¹ Institute of Environmental Assessment and Water Research (IDAEA-CSIC), Barcelona, Spain
² Parc Agrari del Baix Llobregat, Barcelona, Spain
³ Comunitat d'Usuaris d'Aigües de la Vall Baixa i del Delta del Llobregat (CUADLL), El Prat de Llob., Spain
⁴ Aigües de Barcelona (AGBAR), Barcelona, Spain
⁵ Catalan Institute for Water Research (ICRA), Girona, Spain

Poster session: Session 4 & 5

Chairperson: Marianne Köck

11.10 – 11.30 Flash poster presentations Session 4 & 5: P4.1 / P5.1 / P5.2

10.55 – 11.40 Poster session / coffee break

Session 5: Ecosystem services & Water management

Chairpersons: Vicenç Acuña (ICRA, Spain) & Redouane Choukrallah (IAV, Marocco)

11.40 – 12.00 Keynote: Science Driven Implementation of Sustainable Development: Managing Multi-Stressed WaterPhoebe Koundouri^{1,2,3,4}¹ Athens University of Economics and Business, Athens, Greece² ATHENA Research and Innovation Center, Athens, Greece³ London School of Economics, London, UK⁴ ICRE8 Research and Innovation Center**12.00 – 12:20 Keynote: The future of water in Europe – challenges and opportunities for water smart societies**Jochen Froebrich¹¹ Wageningen Environmental Research, Wageningen, The Netherlands**12:20 – 12:40 Interreg project HyMoCARES - HydroMorphological assessment and management at basin scale for the Conservation of Alpine Rivers and related Ecosystem Services**Paolo Negri²,¹ Provincial Agency for the Protection of the Environment (APPA), Trento, Italy**12:40 – 13:00 An integrated strategy for the assessment of multiple freshwater-related ecosystem services under global change conditions**Dídac Jorda-Capdevila¹, Carme Font¹, Sergi Sabater^{1,2} and Vicenç Acuña¹¹ Catalan Institute for Water Research (ICRA), Girona, Spain² Institut d'Estudis Aquàtics, Universitat de Girona (UdG), Girona, Spain**13:00 – 13:20 Socio-economic assessment of multi-stressed rivers: An EU perspective to policy implications**Phoebe Koundouri^{1,2,3}, Egun Akinsete^{1,4}, Stella Tsani³¹ School of Economics, Athens University of Economics and Business, Greece² 2 Grantham Research Institute, London School of Economics and Political Science, UK³ Interational Center for Research on the Environment and the Economy (ICRE8), Athens, Greece.⁴ School of Applied Social Studies, Robert Gordon University, Aberdeen, UK**13:20 – 13:40 A three-countries model of the Zambezi river basin**Michael Rauscher¹¹ Universität Rostock and ifo-Institut, München, Germany**13:40 – 14:00 Knowledge integration for river basin management and the performance of GLOBAQUA on this challenge**Adriaan Slob^{1,2}, Tara Geerdink¹, Ingmar van Meerkerk²¹ TNO, Strategic Analysis & Policy, Den Haag, the Netherlands² Erasmus University Rotterdam, Governance of complex systems, Rotterdam, the Netherlands

14:00 – 15:00 Poster session / lunch

Round table

Chairperson: Antoni Ginebreda (IDAEA-CSIC; Spain)

15:00 – 15:45 **Integrating GLOBAQUA / MARS / SOLUTIONS outcomes into EC water policy; water and citizens; need for living labs.**

With Damià Barceló, Werner Brack, Antoni Munné, Daniel Hering, and all attendees.

Closing Ceremony

15.45 – 16.00 Closing Discussion with Damià Barceló

Award:

Best Oral presentation & Best Poster presentation



16.00 End of meeting

Session 1: Global change & Hydrology

- P1.2^(FP) **Hydrological modeling of Souss-Chtouka groundwater resources under water scarcity**
M. Malki¹, L. El Mezouary², ¹L. Bouchaou¹, B. El Mansoury², R. Choukr-Allah³
¹ Faculty of Sciences, Ibn Zohr University, Agadir, Morocco
² Faculty of Sciences Ibn Tofail University, Kenitra Morocco
³ Hassan II Institute of Agronomy and Veterinary Medicine, Agadir, Morocco
- P1.3^(FP) **Analysis and attribution of hydrological trends in the Adige River Basin (Italy)**
Stefano Mallucci¹, Bruno Majone², and Alberto Bellin²
¹ University of Trento, Fondazione Edmund Mach, Center Agriculture Food Environment, San Michele all'Adige, Italy
² University of Trento, Department of Civil, Environmental and Mechanical Engineering, Trento, Italy
- P1.4 **The 2017 drought in the Adige catchment, Italy: effects on groundwater resources and isotopic gradients**
Gabriele Chiogna^{1,2}
¹ Technical University of Munich (TUM), Munich, Germany
² University of Innsbruck, Innsbruck, Austria
- P1.5 **Assessing Water scarcity in the Ebro River Basin under scenarios of climate and land use change**
Verena Huber García¹, Stefanie Lutz², Raul Wood¹ and Ralf Ludwig¹
¹ Maximilians-Universität München (LMU), Munich, Germany
² Helmholtz Centre for Environmental Research (UFZ), Halle, Germany
- P1.6 **Assessing the effects of hydrological and chemical stressors on macroinvertebrate community in an Alpine river**
 Monica Giulivo¹, Elisa Stella², Ettore Capri¹, Amair Esnaola^{3,4}, Miren López de Alda⁵, Silvia Diaz-Cruz⁵, Ladislav Mandaric⁶, Isabel Muñoz³, Alberto Bellin²
¹ Institute of Agricultural and Environmental Chemistry, UCSC di Piacenza, Piacenza, Italy
² Department of Civil, Environmental and Mechanical Engineering, University of Trento (UNITN), Trento, Italy
³ University of Barcelona (UB), Barcelona, Spain
⁴ University of the Basque Country (UPV/EHU), Leioa, Spain
⁵ Institute of Environmental Assessment and Water Research (IDAEA-CSIC), Barcelona, Spain
⁶ Catalan Institute for Water Research (ICRA), Girona, Spain
- P1.7 **Simulation of agricultural land suitability evolution under climate change in an intensive agricultural area, case of Chtouka Ait Baha, Morocco**
 Seif-Ennasr Marieme¹, Hirich Abdelaziz⁴, El Morjani Zine El Abidine³, Beraaouz El Hassane¹, Lhoussaine Bouchaou¹, Choukr-Allah Redouane²
¹ Faculty of sciences, Ibn Zohr University, Agadir, Morocco
² Agronomic and Veterinary Medicine Hassan II Institute (IAV), Complex of Horticulture, Agadir, Morocco
³ Taroudant Polydisciplinary Faculty of Ibn Zohr University, Morocco
⁴ International Center for Biosaline Agriculture, Dubai, United Arab Emirates
- P1.8 **Testing the hydrological coherence of high-resolution gridded precipitation and temperature data sets**
Stefano Mallucci^{1*}, Lavinia Laiti², Sebastiano Piccolroaz², Alberto Bellin³, Dino Zardi³, Aldo Fiori⁴, Grigory Nikulin⁵ & Bruno Majone³
¹ University of Trento, Fondazione Edmund Mach, Center Agriculture Food Environment, San Michele all'Adige, Italy
² Autonomous Province of Trento, Trento, Italy
³ University of Trento, Department of Civil, Environmental and Mechanical Engineering, Trento, Italy
⁴ Department of Engineering, University Roma Tre, Rome, Italy
⁵ Swedish Meteorological and Hydrological Institute, Rossby Centre, Norrköping, Sweden

Session 2: Fate & Risk assessment of pollutants

- P2.1^(FP) **Organophosphorus flame retardants in high mountain lakes of the National Park of Aigüestortes**
Raimon M. Prats¹, Barend L. van Drooge¹, Pilar Fernandez¹, Joan O. Grimalt¹
¹ Institute of Environmental Assessment and Water Research (IDAEA-CSIC), Barcelona, Spain
- P2.2^(FP) **Occurrence of 52 pesticides in water, sediment and biota of the Adige River (Italy)**
Maria Vittoria Barbieri¹, Cristina Postigo¹, Nuria Guillem-Argiles¹, Simon Monllor-Alcaraz¹, Elisa Stella², Alberto Bellin², Damià Barceló^{1,3}, Miren López de Alda¹
¹ Institute of Environmental Assessment and Water Research (IDAEA-CSIC), Barcelona, Spain
² University of Trento, Department of Civil, Environmental and Mechanical Engineering, Trento, Italy
³ Catalan Institute for Water Research (ICRA), Girona, Spain
- P2.3 **Distinguishing between engineered and natural TiO₂NPs in the Sava River by single particle ICP-MS**
Janja Vidmar^{1,2}, Tea Zuliani^{1,2}, Radmila Milačič^{1,2}, Ana Drinčić^{1,2}, Janez Ščančar^{1,2}
¹ Jožef Stefan Institute (JSI), Ljubljana, Slovenia
² Jožef Stefan International Postgraduate School, Ljubljana, Slovenia
- P2.4 **Evaluation of the photodegradability of pharmaceuticals in Evrotas river**
Sandra Perez¹, Manuel García-Vara¹, Damià Barceló¹, Nicola Montemurro¹
¹ Institute of Environmental Assessment and Water Research (IDAEA-CSIC), Barcelona, Spain
- P2.5 **Assessing the impacts of anthropogenic activities on groundwater and surface water quality in the Sava River Basin: a stable isotope approach**
Nives Ogrinc¹, Samo Tamše¹, Janja Vrzel^{1,2}, Lixin Jin³
¹ Jožef Stefan Institute (JSI), Ljubljana, Slovenia
² Ludwig-Maximilians-Universität München (LMU), Munich, Germany
³ Department of Geological Sciences, University of Texas at El Paso, El Paso, USA
- P2.6 **From lotic to lentic status. Dissolved organic matter availability and fate in a small intermittent stream**
Verónica Granados¹, Rebeca Arias del Real¹, Cayetano Gutiérrez-Cánovas¹, Biel Obrador¹, Andrea Butturini¹
¹ University of Barcelona (UB), Barcelona, Spain.
- P2.7 **Occurrence and levels of contaminants mixtures in *Mytilus galloprovincialis* cultured at Ebro Delta (Spain)**
Diana Álvarez-Muñoz¹, Lluís Terrado¹, Mar Olmos¹, Maria Rambla-Alegre², Jorge Diogène² and Damià Barceló^{1,3}
¹ Institute of Environmental Assessment and Water Research (IDAEA-CSIC), Barcelona, Spain
² Institute of Agriculture and Food Research and Technology (IRTA), Tarragona, Spain
³ Catalan Institute for Water Research (ICRA) Girona, Spain
- P2.8 **Distribution of Gastropoda along the Sava River – the GLOBAQUA case study**
M. Paunović¹, M. Raković¹, T. Zuliani², M. Piria³, J. Tomović¹, M. Ilić¹, M. Kračun Kolarević¹, N. Marinković¹, J. Đuknić¹, Đurađ Milošević⁴
¹ Institute for Biological Research Siniša Stanković (IBISS), University of Belgrade, Serbia
² Institute Jožef Stefan (JSI), Ljubljana, Slovenia
³ University of Zagreb, Faculty of Agriculture (UNIZG-FAZ), Zagreb, Croatia
⁴ University of Niš, Faculty of Science, Department of Biology and Ecology, Niš, Serbia

- P2.9 **The Albufera Natural Park (Valencia, Spain): the impact of Pharmaceutical and Personal Care compounds**
 Daniele Sadutto, Rodrigo Alvarez-Ruiz, Marta Ballester, Yolanda Picó
 Food and Environmental Safety Research Group (SAMA-UV), Desertification Research Centre (CIDE-UV, GV, CSIC),
 Faculty of Pharmacy, University of Valencia, Valencia, Spain.

Session 3: Multiple stressors & Biological response

- P3.1^(FP) **Unravelling the interactive effects of multiple stressors on river biofilms**
Ferran Romero¹, Vicenç Acuña¹, Sergi Sabater^{1,2}.
¹ Catalan Institute for Water Research (ICRA), Girona, Spain
² Institute of Aquatic Ecology, University of Girona, Girona, Spain
- P3.2^(FP) **Psychoactive substances in mussels: Analytical method development and occurrence assessment**
Esther López-García¹, Cristina Postigo^{1*}, Damià Barceló^{1,2} and Miren López de Alda¹
¹ Institute of Environmental Assessment and Water Research (IDAEA-CSIC), Barcelona, Spain
² Catalan Institute for Water Research (ICRA), Girona, Spain
- P3.3^(FP) **Source matters! Effect of raw and treated wastewater on streambed bacterial communities**
Carles M. Borrego^{1,2}, Jessica Subirats¹, Xavier Triadó-Margarit^{2,3}, Ladislav Mandarić¹, Vicenç Acuña¹, José Luis Balcázar¹, Mira Petrovic¹ and Sergi Sabater^{1,4}
¹ Catalan Institute for Water Research (ICRA), Girona, Spain
² Group of Molecular Microbial Ecology, Institute of Aquatic Ecology, University of Girona (UdG), Girona, Spain
³ Integrative Freshwater Ecology Group, Centre d'Estudis Avançats de Blanes (CEAB-CSIC), Blanes Girona, Spain
⁴ Institute of Aquatic Ecology (GRECO), University of Girona, Girona, Spain
- P3.4^(FP) **Diet overlap among invasive Ponto-Caspian gobies and native fishes from the Sava River**
Marina Piria, Ivan Špelić
 University of Zagreb, Faculty of Agriculture (UNIZG-FAZ), Zagreb, Croatia
- P3.5 **Are the sediments of the Globaqua basins toxic for the midge *Chironomus riparius*?**
Núria De Castro-Català¹, Eleni Kalogianni², Nikolaos Th. Skoulidakis², Aida Viza¹, Jordi René Mor³, Isabel Muñoz¹
¹ University of Barcelona, Barcelona, Spain
² Hellenic Centre for Marine Research (HCMR), Athens, Greece
³ Catalan Institute for Water Research (ICRA), Girona, Spain
- P3.6 **Biodegradation of emerging contaminants by trichoderma strains**
Rayana Al Manasfi, Monica Brienza, Serge Chiron
 Hydrosiences Montpellier, Montpellier, France
- P3.7 **Lipid composition and metabolism in freshwater organisms under anthropic stressors, Part II: fatty acid composition approach**
Lopez-Doval, J.C.¹, Kainz, M.J.², Acuña, V.¹, Pijuan, M.¹, and Sabater, S.^{1,3}
¹ Catalan Institute for Water Research (ICRA), Girona, Spain
² WasserCluster Lunz, Lunz am See, Austria
³ Institute of Aquatic Ecology, University of Girona (GRECO), Girona, Spain

P3.8 Expression of catalase and glutathione-S- transferase in the liver of trout species as indication of stress in the Sava and Adige Rivers

Duško Blagojević¹, B. Majone², A. Bellin², T. Zuliani³, M. Piria⁴, S. Dinić¹, N. Grdović¹, A. Uskoković¹, J. Arambašić Jovanović¹, M. Mihailović¹, M. Vidaković¹, P. Simonović^{1,5}, M. Paunović¹

¹ Institute for Biological Research Siniša Stanković (IBISS), University of Belgrade, Serbia

² University of Trento (UNITN), Trento, Italy,

³ Institute Jožef Stefan (JSI), Ljubljana, Slovenia,

⁴ University of Zagreb, Faculty of Agriculture (UNIZG-FAZ), Zagreb, Croatia

⁵ University of Belgrade, Faculty of Biology, Belgrade, Serbia

P3.9 TOXMIC: TOXicants monitoring chamber for MICrocontaminants

Carafa Roberta¹, Marta Schuhmacher¹, Jordi Sierra Llopart¹, Nora Exposito Lorenzo¹, Antoni Munné², Mechthild Schmitt-Jansen³ and Tom Gallé⁴

¹ Universitat Rovira i Virgili, Tecnatox, Tarragona, Spain

² Catalan Water Agency (ACA), Barcelona, Spain

³ Environmental Research Center (UFZ), Leipzig, Germany

⁴ Luxembourg Institute of Science and Technology (LIST), Belvaux, Luxembourg

Session 4: Assessment and prioritization of pollutants

P4.1^(FP) Water resources in Libya
Jamal Ali Mohamed Ehdadan
 University of Pisa, Italy

Session 5: Ecosystem services & Water management

P5.1^(FP) Can treated wastewater pose a potential risk to human health as a result of irrigation of vegetable crops?

Nicola Montemurro¹, Damià Barcelò^{1,2}, Sandra Perez¹

¹ Institute of Environmental Assessment and Water Research (IDAEA-CSIC), Barcelona, Spain

² Catalan Institute for Water Research (ICRA), Girona, Spain

P5.2^(FP) E-learning tool to improve current EU water policies and practices for a sustainable freshwater management

G. Sacchetti^{1,2}, A. Tediosi¹, F. Ferrari¹

¹ Aeiforia srl, Gariga di Podenzano, Italy

² OpenTEA srl, Fidenza, Italy

^(FP) Selected for flash presentation

VENUE and ACCOMODATION

Venue of the event

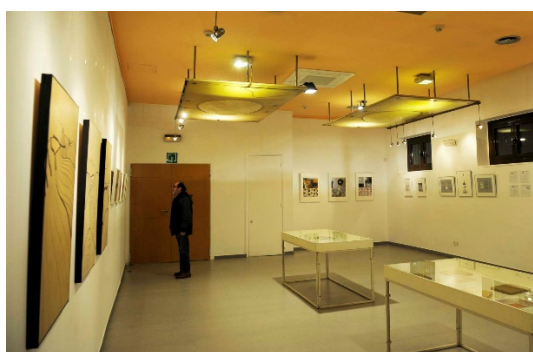
The Globaqua Workshop will be held at:



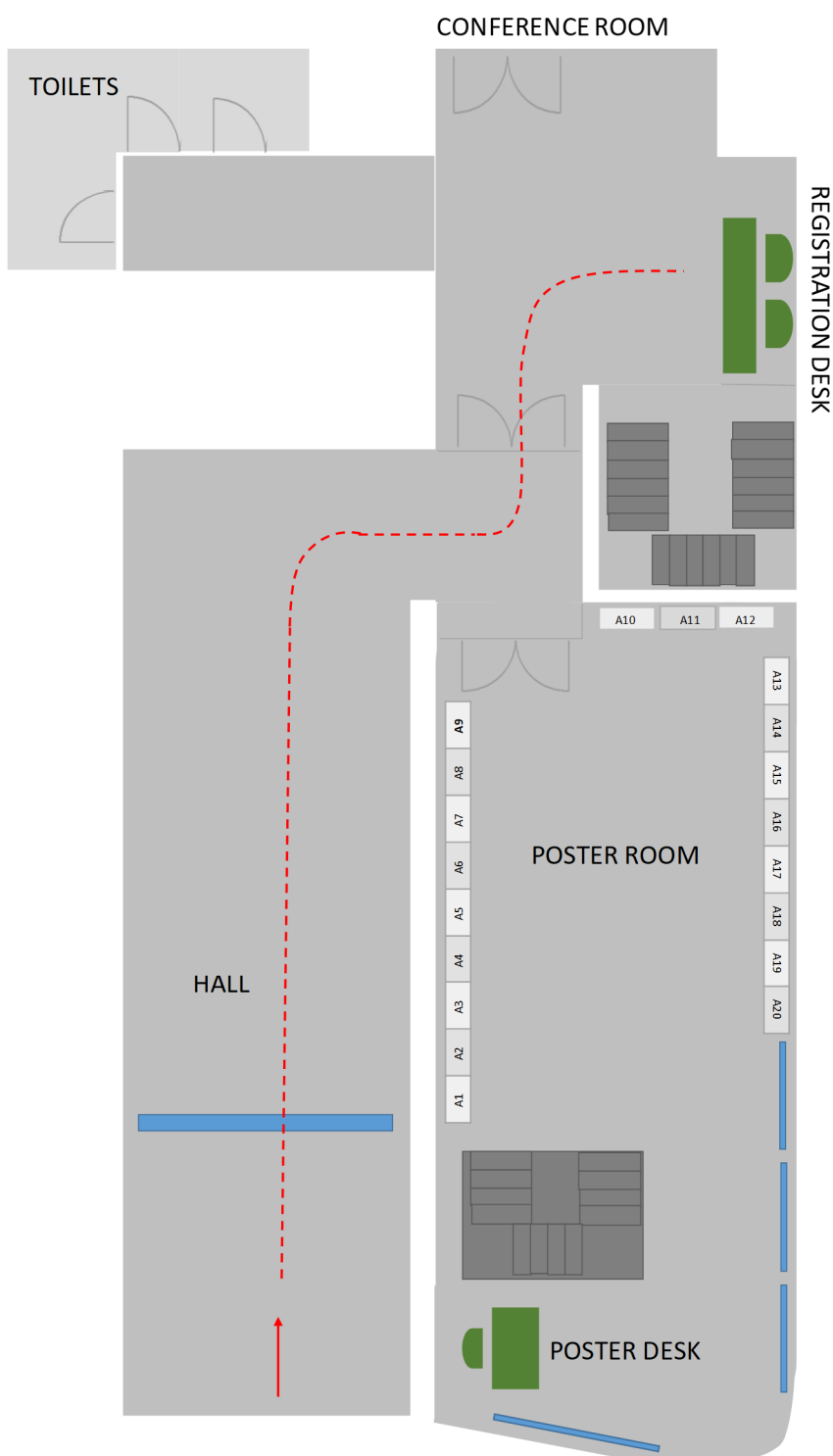
Residència d'Investigadors – CSIC.
Carrer Hospital 64, Barcelona
www.residencia-investigadors.es
Phone (+34) 93 443 86 10
E-mail investigadors@resa.es



Conference room



Poster & coffee break room



Touristic information

How to find the venue (from Barcelona airport):

- By taxi (15-20 min, cca 30€)
- By train (every 30 min) or bus (every 15 min) from the airport to Plaza Catalunya.

Internet sites:

Barcelona tourist information guide:

www.seebarcelona.com

Barcelona on-line tourist information:

www.Barcelona-on-line.es

Map of Barcelona:

www.bcn.es/guia/welcome.htm

Map of the Barcelona metro and bus:

www.tmb.cat/en/home

Accommodation

Bookings should be made directly to the hotel.

Special rates have been arranged with some hotels in the surroundings of the conference venue (refer to GLOBAQUA Workshop):

RESIDÈNCIA D'INVESTIGADORS

– CSIC

Hospital 64, Barcelona

Web www.residencia-investigadors.es

Phone (+34) 93 443 86 10

E-mail investigadors@resa.es

- Single room: 60 €/night
- Double room: 89 €/night

Included: Breakfast and VAT

Not included: touristic TAX

HOTEL TURÍN***

Pintor Fortuny 9, 08001

Barcelona

Web www.hotelturin.com

Phone (+34) 93 302 48 12

- Single room: 80 €/night
- Double room: 95 €/night

Included: Breakfast and VAT

Not included: touristic TAX

HOTEL HCC TABER

Arago 256, 08007 Barcelona

Web www.hoteltaber.com

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- Single room: 99 €/night
- Double room: 110 €/night

Included: Breakfast and VAT

Not included: touristic TAX