



**14th International Symposium on the Interactions between Sediments and Water
Hotel Villa Diodoro, Taormina, 17-22 JUNE 2017**

CONFERENCE PROGRAMME

(all presentations are in the Salone Congressi of the Hotel Villa Diodoro, Floor -2)

SATURDAY 17/06/2017

15:00-17:00 **Registration (Segreteria Congresso, Floor -2)**

17:00-18:00 **Ice breaker**

18:00-22:00 **Entertainment (see the website)**

SUNDAY 18/06/2017

08:00 **Registration (Segreteria Congresso, Floor -2)**

08:30-9:00 **Opening remarks, welcome**

SESSION 1 - Sediment-Water Linkages in Terrestrial and Aquatic Environments. Monitoring and Modelling Soil Erosion and Sediment Yields at Multiple Scales

Chair: Mike Stone - University of Waterloo, Waterloo, Ontario Canada

09:00 **KEYNOTE SPEECH - Soil Erosion and Sediment Studies: Walnut Gulch Experimental Watershed Arizona – est. 1953.**

Mark A. NEARING - USDA-ARS Southwest Watershed Research Center, Tucson, AZ, USA.

- 10:00 The Effect of Sediment Record Length on the Accuracy of Predicting Suspended Sediment Loads in Rivers and Streams as a Function of Water Discharge Using Linear Regression
Chantal W. Sakwe, Isam E. Amin, and Alan M. Jacobs - Department of Geological and Environmental Sciences, Youngstown State University, Youngstown, Ohio, USA
- 10:20 Variations of Water Runoff and Suspended Sediment Yield in the Kamchatsky Krai, Russia
Ludmila Kuksina, Nikolay Alexeevsky - Moscow State University, Moscow, Russia
- 10:40 COFFEE BREAK

SESSION 2 - Sediment-Water Linkages in Terrestrial and Aquatic Environments. Monitoring and Modelling Soil Erosion and Sediment Yields at Multiple Scales

Chair: Valentin Golosov - Kazan Federal University, Kazan, Russia

- 11:10 Application of Acoustic Doppler Technology in Estimating Suspended Sediments
Daniel Wagenaar, **Xue Fan** - SonTek / Xylem, San Diego, California, USA
- 11:30 Entropy-based equation to assess sediment yield: application to ungauged basins
José Carlos de Araújo - Federal University of Ceará, Fortaleza, Brazil
- 11:50 Sediment Deposited in a Small Reservoir vs Sediment Yield from its Catchment
Kazimierz Banasik, Leszek Hejduk - Warsaw University of Life Sciences – SGGW, Dept. of River Engineering, Warsaw, Poland
- 12:10 Analysing the Spatial Distribution of Erosion and Deposition using Optic 3D Scanner at Small Plot Scale
Abdulvahed Khaledi Darvishan, Mohsen Khorsand, Seyed Hamidreza Sadeghi and Fahimeh Mircholi

SESSION 3 - Monitoring and Modelling Soil Erosion and Sediment Yields. Traditional Approaches and Tracer Technologies in Sediment-Water Science

Chair: Katrin Meusbürger - Environmental Geosciences, Department Environmental Sciences, University of Basel, Switzerland

- 14:40 Using bomb-derived and Chernobyl-derived ^{137}Cs for the assessment of soil losses trends in different landscape zones of the European Russia
Valentin Golosov, A. Gusarov, A. Sharifillin, N. Ivanova, A. Gafurov, O. Yermolaev, I. Rysin - Kazan Federal University, Kazan, Russia

- 15:00 Particle size effect and implications in predicting erosion rates by ^{137}Cs in three small catchments in Southern Italy
Vanessa Cogliandro, Giovanni Callegari, Paolo Porto – *Università Mediterranea, Reggio Calabria, Italy*
- 15:20 Further validation of the use of ^7Be measurements to estimate net soil loss from a small catchment
Paolo Porto, Des Walling, Vanessa Cogliandro, Giovanni Callegari – *Università Mediterranea, Reggio Calabria, Italy*
- 15:40 COFFEE BREAK

SESSION 4 - Monitoring and Modelling Soil Erosion and Sediment Yields. Traditional Approaches and Tracer Technologies in Sediment-Water Science

Chair: Kazimierz Banasik - *Warsaw University of Life Sciences – SGGW, Dept. of River Engineering, Warsaw, Poland*

- 16:10 Identifying erosion hot-spots for remediation in the Great Barrier Reef catchments: combining multiple measurement and isotope techniques
Rebecca Bartley, Jacky Croke, Scott N Wilkinson, Gary Hancock and Zoe T. Bainbridge - *CSIRO, Australia*
- 16:30 Erodibility and transport behaviour of dreissenid mussel deposits in the near shore zone of Lake Erie
Kelly McLean, **Mike Stone**, Ian Droppo, Ralph Smith - *University of Waterloo, Waterloo, Ontario Canada*
- 16:50 Sediment Budgets at Plot Scale
Abdulvahed Khaledi Darvishan, Seyed Hamidreza Sadeghi, Mehdi Homae, Mahmood Arabkhedri, Leila Gholami - *Department of Watershed Management Engineering, Faculty of Natural Resources, Tarbiat Modares University, Noor, Iran*
- 17:10 Splash Erosion Control using Sheep Manure
Leila Gholami, Seyed Hamidreza Sadeghi, Mehdi Homae - *Department of Watershed Management Engineering, Faculty of Natural Resources, Sari University of Agricultural Sciences and Natural Resources, P. O. Box 578, Sari, Iran*

MONDAY 19/06/2017

SESSION 5 - Assessing Disturbed Catchments. Hillslope and River Processes

SESSION SPONSORED BY THE ASPROMONTE NATIONAL PARK

Chair: Philip N. Owens - *University of Northern British Columbia, Prince George, Canada*

- 08:40 The Aspromonte National Park: peculiarities of a mountain territory in the centre of the Mediterranean Sea
Sabine Ment – *Official guide of the Aspromonte National Park*
- 09:00 **KEYNOTE SPEECH** - Large wood storage, mobility and the relevance of hillslope processes in forested river catchments.
Mario LENZI - *Department of Land, Environment, Agriculture and Forestry. University of Padova, Italy*
- 10:00 Quantifying the evolution of transient storage in river restoration schemes.
Patrick Byrne, Richard Williams - *Liverpool John Moores University, Liverpool, UK*
- 10:20 On the relevance of discussing sediment-soil and soil-sediment transitions
Susanne Heise - *Hamburg University of Applied Sciences, Hamburg, Germany*
- 10:40 COFFEE BREAK

SESSION 6 - Assessing Disturbed Catchments. The Role of Sediment from Source to Sinks

Chair: Paolo Porto – *Università Mediterranea, Reggio Calabria, Italy*

- 11:10 Fingerprinting the sources of fine-grained sediment in a large regulated watershed in British Columbia, Canada
Philip N. Owens, Ellen L. Petticrew, David Gateuille, Barry Booth, Todd French - *Landscape Ecology Research Group, University of Northern British Columbia, Prince George, British Columbia, Canada*
- 11:30 Sediment source attribution from the soil to the river with CSIA of long-chain fatty acids
Christine Alewell, Axel Birkholz, Katrin Meusbürger, Pranav Hirave, Ji-Hyung Park and Lionel Mabit - *Environmental Geosciences, Department Environmental Sciences, University of Basel, Switzerland*
- 11:50 Identifying sediment provenance from different land uses by applying MixSIAR unmixing model in a Pyrenean catchment
Iván Lizaga, Leticia Palazón, Laura Quijano, Leticia Gaspar, Ana Navas - *Estación Experimental de Aula Dei (EEAD), Spanish National Research Council (CSIC), Spain*
- 12:10 Linking hysteresis patterns and variations in suspended sediment sources in a highly urbanized river: a case of the River Aire, UK
Kim Verduyse, Robert C. Grabowski - *Cranfield University, Cranfield, UK*

SESSION 7 - Sediment-Water Linkages in Estuarine Environments

Chair: Patrick Byrne - Liverpool John Moores University, Liverpool, UK

- 14:00 **KEYNOTE SPEECH** - New insights into the composition and behaviour of Suspended Particulate Matter
Kate SPENCER - Queen Mary University of London, School of Geography, London, UK
- 15:00 Microphytobenthic diversity (functional & biological) in intertidal estuarine mudflats (MIDIEM project, Authie estuary, English Channel, France).
Lionel Denis, Swanne Gontharet, Gwendoline Duong, Fabienne Goulard, François Gevaert, Sébastien Lefebvre, Felipe Artigas, Sylvie Philippe, Jacinthe Caillaud, Charles Verpoorter, Eric Armynot du Chatelet, Alain Trentesaux, Vanda Brotas, Lourenço Ribeiro, Maxime Gommeaux, Henk Bolhuis - University of Lille, Station Marine de Wimereux, Wimereux, France
- 15:20 Spatio-temporal variability of biogeochemical fluxes (C-N) and microbial diversity in an intertidal mud bank of French Guiana
Swanne Gontharet, Lionel Denis, Olivier Mathieu, Luis Felipe Artigas, Maxime Gommeaux, Gwendoline Duong, Nicolas Chevalier, Sandric Lesourd, Jacinthe Caillaud, François Gevaert, Fabienne Goulard, Vincent Klein, Ioanna Bouloubassi, Lucie Courcot, Françoise Henry, Sylvie Philippe, Jean Lévêque, Antoine Gardel - University of Littoral Opal Coast, Wimereux, France
- 15:40 COFFEE BREAK

SESSION 8 - Sediment-Water Linkages in Marine Environments

Chair: Rebecca Bartley - CSIRO, Australia

- 16:10 Hotspots and hot moments of methylmercury production in restored coastal wetlands
Michelle A Morris, Kate L Spencer, Lisa Belyea, Brian Branfireun - Queen Mary University of London, School of Geography, London, UK
- 16:30 26-year impact assessment of heavy metal distributions in sediment and pore water at a deep-sea nodule mining disturbance site
Sophie A. L. Paul, Andrea Koschinsky - Jacobs University Bremen, Bremen, Germany
- 16:50 Impact of sea dumped munitions on metals concentrations in sediments
Jacek Bełdowski, Marta Szubska, Grzegorz Siedlewicz, Magdalena Bełdowska - Institute of Oceanology Polish Academy of Sciences, Sopot, Poland

TUESDAY 20/06/2017

8.30-16.30 **FIELD TRIP (see the website)**

WEDNESDAY 21/06/2017

SESSION 9 - The Role of Sediment within Disturbed Catchments and River Basins

Chair: Ian G. Droppo - *Environment and Climate Change Canada, Burlington, Ontario, Canada*

- 08:40 **KEYNOTE SPEECH** - Dumped in My Back Yard (DIMBY): Perspectives of the Mount Polley Mine Tailings Impoundment Breach from the Quesnel River Research Centre a downstream field station
Ellen PETTICREW - *University of Northern British Columbia, Prince George BC Canada*
- 09:40 Influence of an exceptional flood event in a historically contaminated catchment: the Boxing Day 2015 flood in the River Irwell, Manchester, UK
Rachel Hurley, Jamie Woodward & James Rothwell - *The University of Manchester, UK*
- 10:00 Historical record of anthropogenic metal inputs in salt marsh sediments from southwest England using a multiproxy approach
Andra-Rada Iurian, Geoffrey Millward, Alex Taylor, William Marshall, Javier Rodríguez, José Ignacio Gil Ibarguchi and William H. Blake - *Plymouth University, Plymouth, UK*
- 10:20 Preliminary analysis of coal contribution in hydro-sedimentary dynamics by using spectroradiometry. Case Study: Jiu River Basin, Romania
Moroşanu Gabriela Adina, Legout Cedric, Belleudy Philippe, Zaharia Liliana, Ioana-Toroimac Gabriela - *University of Bucharest, Faculty of Geography, Bucharest, Romania*
- 10:40 COFFEE BREAK

SESSION 10 - Evaluating Change in Freshwater and Saline Habitats

Chair: A.K. Basson - *University of Zululand, Kwa-Dlangezwa, KwaZulu-Natal, Republic South Africa*

- 11:10 Biogeochemical Mobilization of Arsenic in Yangzonghai Lake Sediments, China
Christopher Weisener, Joelle Pecz, Danielle VanMensel, Tom Reid, Hucai Zhang - *University of Windsor, Windsor Ontario, Canada*
- 11:30 Biogeochemical cycling of mercury at the water-sediment interface in a critical environment: the case of a lagoon fishfarm (northern Adriatic Sea, Italy)
Elisa Petranich, Stefano Covelli, Alessandro Acquavita, Jadran Faganeli, Milena Horvat, Marco Contin - *University of Trieste, Trieste, Italy*

- 11:50 Physical, Chemical and Biological Dynamics of Hydrophobic Sediment Eroded from the McMurray Formation: Implications for Sediment/Contaminant Transport
Ian G. Droppo, Bommana G. Krishnappan and John R. Lawrence - *Environment and Climate Change Canada, Burlington, Ontario, Canada*
- 12:10 *Impatiens glandulifera* (Himalayan Balsam) and increased soil loss: causation or association? Case studies from Switzerland and the UK
Philip Greenwood, Nikolaus Kuhn - *University of Basel, Basel, Switzerland*

SESSION 10 (continued) - Evaluating Change in Freshwater and Saline Habitats

Chair: A.K. Basson - *University of Zululand, Kwa-Dlangezwa, KwaZulu-Natal, Republic South Africa*

- 14:20 Stable isotope variation of mercury in deep-sea sediments of Mediterranean Sea
Nives Ogrinc, Holger Hintelmann, Radojko Jaćimović, Jože Kotnik, Nicola Pirrone and Milena Horvat - *Dept. of Environmental Sciences, Jožef Stefan Institute, Ljubljana, Slovenia*
- 14:40 Novel erosion simulations and genetic sequencing tools unravel microbial mediated sediment dynamics associated with hydrocarbon-rich environments
Thomas Reid, Ian G. Droppo, Subba Rao Chaganti, Christopher G. Weisener – *University of Windsor, Windsor Ontario, Canada*
- 15:00 COFFEE BREAK

15:30-16:30 **IASWS General Meeting**

16:30 – 18:00 **POSTER SESSION**

- Andra-Rada Iurian, Ildiko Melinda Martonos, Robert Csaba Begy, Kelemen Szabolcs, Hedvig Simon, Diana Ciobotaru, Irina Dumitrascu** - Reconstruction of heavy metals and hydrocarbons contamination history in lacustrine systems from SE Romania
- Daniel Marcos Bonotto, Gabrielle Roveratti** - Geochemical analysis of sediments from Barreiro Alkaline Complex, Brazil
- Efrén Garcia-Ordiales, Stefano Covelli, Pelayo Rico, Elisa Petranich, Jose M Rico, Pablo Cienfuegos, Pablo Rodriguez-Gonzalez, Silvia Queipo, Jorge Loredo, Nieves Roqueñí** - Trace metals cycling at the water-sediment interface of an estuary contaminated by historical mining activities (Nalon River, northern Spain)
- Fatih Dursun Arslan, Aysun Uğur Görgün, Işık Filizok** - Determination of Soil Erosion Rate Using Cs-137 Distribution in Middle Gediz Basin (Between Turgutlu-Salihli) Turkey
- Gabriela Gic-Grusza, Aleksandra Dudkowska** - *A holistic approach to modelling of the bedload transport in coastal zones*
- Jakub Malicki, Aleksandra Dudkowska, Piotr Szmytkiewicz** - Nearshore hydro-, litho- and morphodynamic processes at the Coastal Research Station in Lubiato, Poland, as phenomena representative for the south Baltic coastal zones

Kate L Spencer, Simon J Carr, Lucy M Diggins, James A Tempest, Michelle A Morris, Gemma L Harvey - The impact of pre-restoration land-use and disturbance on sediment structure, hydrology and the sediment geochemical environment in restored saltmarshes

Magdalena Beldowska, Saniewska Dominika, Gębka Karolina, Kwasigroch Urszula - The influence of weather anomalies on remobilization of mercury

Miguel Angel Martín and Miguel Reyes - Soil irregular Interphases and the interaction with highly heterogeneous distributions: Fractal modelling

Milica Marković, Tea Zuliani, Olga Kostić, Radmila Milačić, Janez Ščančar, Momir Paunović, Snežana Jarić, Zorana Mataruga, Jana Vidmar, Miroslava Mitrović, Pavle Pavlović - Toxic elements in the riparian soil and sediment of the Sava River

Natalia Druzd - Estimation of wave induced cross-shore sediment transport using the Madsen and Grant model

Prifti Eleni, Kaberi Helen, Michalopoulos Panagiotis, Zeri Christina, Iliakis Stelios, Dassenakis Manolis and Scoullos Michael - Sediment-water contaminant dynamics in Saronikos Gulf, Greece

Ramazan Manav, Aysun Uğur Görgün, Işık Filizok - The Investigation of Some Heavy Metals and Natural Radionuclides in Suspended Solids and Sediments in Bafa Lake (Milas-Muğla)

Ratmaya Widya, Françoise Andrieux-Loyer, Annet M. Laverman, Nathalie Cochenec-Laureau, Laurent Barillé, Philippe Souchu - Dynamics and Bioavailability of Phosphorus in Sediments of the Bay of Vilaine

Roberto Meigikos dos Anjos, Marcelo Costa Muniz, Renan Pereira Cardoso, Luiz Henrique Rosa, Rosemary Vieira, Humberto Marotta - Costal changes due to subglacial volcanic eruptions on Deception Island (West-Antarctica)

Sema Akyil Erenturk, Sevilay Hacıyakupoglu, Neslihan Yanikomer, Ruveyda Kubra Ileri, Umran Hicsonmez - Spatial Distribution and Ecological Risk Assessment for Heavy Metals in Surface Sediments from Van Lake

Sevilay Hacıyakupoglu, Sema Akyil Erenturk, Ruveyda K Ileri, Neslihan Yanikomer - Chemical Patterns in Sediments of Ancient Theodosius Harbor (Istanbul)

Tea Zuliani, Janja Vidmar, Janez Ščančar, Momir Paunović, Radmila Milačić - Concentrations of trace elements in solid particulate matter during flash flood events in the upper and lower stretch of the Sava River

Valeria Altieri, Giovanni Callegari, Silvio De Franco, Fabio Lombardi, Pasquale Marziliano, Giuliano Menguzzato, Paolo Porto - The role of silvicultural systems and forest types in preventing the soil erosion processes in mountain forests. A methodological approach using Caesium-137 measurements

Educational Posters provided by the Aspromonte National Park

Pelle L., Tralongo S. - The habitats of the ASPROMONTE National Park

Martino G., Muscianese E., Siclari A., Tralongo S. - Aspromonte reale: first research on the golden eagle (*Aquila chrysaetos*) and the Eurasian eagle-owl (*Bubo bubo*) in the territory of the ASPROMONTE National Park

Santagati S., Siclari A., Tralongo S., Marra S., Polimeni P., Palermi S., Cirrincione R., Fazio E., Fiannanca P., Ortolano G., Pezzino A., Punturo R., Dominici R., Sonnino M., Robustelli G., Caruso C., Larosa S., Viscomi A., Soc. Coop. Ealcubo - The geological heritage of the ASPROMONTE National Park towards Unesco GLOBAL GEOPARK candidacy

20:00 – **SOCIAL DINNER (see the website)**

THURSDAY 22/06/2017

SESSION 11 - Sediment-Water and Biological Linkages in Terrestrial and Aquatic Environments

Chair: Nives Ogrinc - Dept. of Environmental Sciences, Jožef Stefan Institute, Ljubljana, Slovenia

- 08:40 **KEYNOTE SPEECH** - Forest fires control the fate of water and sediment delivery
Artemi CERDÀ - Department of Geography, University of Valencia, Valencia, Spain
- 09:40 The determination of the remnant environmental impacts resulting from the chemical bombing of Halabja, Kurdistan
Jean Simonis, Diary Ali Mohammed, Aram Dawood Abbas and Loffie Schoeman - University of Zululand, Hydrology, South Africa
- 10:00 Identification of spatial and temporal variability of Fluid Mud to evaluate changes in the suspended sediment budget of the Ems estuary
Christine Borgsmüller, Stefan Vollmer - Federal Institute of Hydrology, Koblenz, Germany
- 10:20 Production, characterisation and application of biofloculant from a consortium of *Bacillus pumilus* JX860616 and *Bacillus subtilis* CSM5
A.K. Basson, S.S. Ngema, S. Maliehe, J.J. Simonis - Department of Biochemistry and Microbiology, University of Zululand, Kwa-Dlangezwa, KwaZulu-Natal, Republic South Africa
- 10:40 COFFEE BREAK

SESSION 12 - Sediment-Water and Biological Linkages in Terrestrial and Aquatic Environments

Chair: Jean Simonis - University of Zululand, Hydrology, South Africa

- 11:10 Sediment-water flux of dissolved organic carbon (DOC) in reservoirs: significance and mechanisms
Matthias Koschorreck, Kurt Friese, Katrin Wendt-Potthoff, Tallent Dadi - Helmholtz Centre for Environmental Research – UFZ, Department of Lake Research, Magdeburg, Germany
- 11:30 Great Lakes recreational water security: sediment dynamics and microbial contribution to freshwater shorelines
Danielle VanMensel, Thomas Reid, Subba Rao Chaganti, Ian Droppo, Christopher Weisener - University of Windsor, Ontario, Canada
- 11:50 Interactions between bed sediment and water column and changes in pathogens levels in stream environment
Pramod K Pandey - Department of Population Health and Reproduction, School of Veterinary Medicine, University of California-Davis, USA