

## 2<sup>nd</sup> International LIFE REWAT Summer School

*Digital water management and water-related agroecosystem services: geostatistics, hydroinformatics and groundwater flow numerical modelling*



September 9<sup>th</sup>-20<sup>th</sup>, 2019  
Scuola Superiore Sant'Anna  
Pisa, Italy

## 2<sup>nd</sup> FREEWAT International Workshop

17<sup>th</sup> September 2019

Aula 3 - Scuola Superiore Sant'Anna

Piazza Martiri della Libertà, 33 - Pisa (Italy)

Participation is free, limited seats available.

Registration is mandatory. To register, please send an e mail to Giovanna De Filippis (g.defilippis@santannapisa.it), providing the following info:

- Name
- Surname
- e-mail
- Institution
- Type of Institution (university/research, water utility, river basin authority, governmental authority, enterprise, freelance).

Should you change your mind after registering, please let us know before September the 13<sup>th</sup>.

For further information, please contact:

Giovanna De Filippis – g.defilippis@santannapisa.it  
Tel. +39050883506

Partecipazione gratuita, numero di posti limitato.

La registrazione è obbligatoria. Per registrarsi inviare una mail a Giovanna De Filippis (g.defilippis@santannapisa.it), comunicando:

- Nome
- Cognome
- e-mail
- Ente di appartenenza
- Tipologia di ente (università/ricerca, gestore servizio idrico, autorità di bacino, ente governativo, società di consulenza, libero professionista).

In caso dopo esserti registrato tu decida di non partecipare, ti chiediamo la cortesia di darcene comunicazione entro il 13 Settembre.

Per ulteriori informazioni contattare:

Giovanna De Filippis – g.defilippis@santannapisa.it  
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# AGENDA

Convener	Start	Finish	Speaker	Presentation title	Affiliation
	13:45	14:00	<b>Registration</b>		
	14:00	14:10	Rudy Rossetto	<i>Welcome and introduction to the workshop</i>	Scuola Superiore Sant'Anna - Institute of Life Sciences Italy
<b>Session 1 - Development</b>					
	14:10	14:40	Iacopo Borsi	<i>FREEWAT Development: new features, improvements and collaborative development since the first public release</i>	TEA SISTEMI S.p.A. Italy
	14:40	15:05	Giovanna De Filippis	<i>Smart ICT tools for water resource management: the experience of the SMAQua project</i>	Scuola Superiore Sant'Anna - Institute of Life Sciences Italy
	15:05	15:30	Rotman Criollo	<i>Free and open source tool for water quantity and quality management</i>	Consejo Superior de Investigaciones Científicas, Institute of Environmental Assessment and Water Research Spain
	15:30	15:55	Daniel Bittner	<i>Modeling the hydrological impact of land use change in karst systems using the LuKars plugin for FREEWAT</i>	Technische Universität München Germany
	15:55	16:20	Manuel Oliveira	<i>A methodology for the initial characterisation of the river boundary condition</i>	National Laboratory for Civil Engineering Portugal
	16:20	16:50	<b>Coffee Break and networking session</b>		
<b>Session 2 - Applications</b>					
	16:50	17:15	Andreas Kallioras	<i>FREEWAT platform as a groundwater modelling tool for coastal semi-arid environments: insights from different model applications</i>	National Technical University of Athens Greece
	17:15	17:40	Rudy Rossetto	<i>Managing Induced RiverBank Filtration MAR schemes by means of modelling tools: the Serchio River IRBF</i>	Scuola Superiore Sant'Anna - Institute of Life Sciences Italy
	17:40	18:05	Massimiliano Cannata, Jakob Neumann, Rodolfo Perego	<i>Analysis of groundwater and Lugano lake interactions</i>	Scuola Universitaria Professionale della Svizzera Italiana Switzerland
	18:05	18:30	Iacopo Borsi <sup>1</sup> , F. Lotti, P. Basile, R. Corsi, E. Guastaldi, A. Barbagli, A. Mallia, R. Xuereb, M. Schembri, M. Sapiano	<i>Development of groundwater models to support groundwater management in the Maltese islands</i>	<sup>1</sup> TEA SISTEMI S.p.A. Italy
	18:30	18:55	<i>Discussion</i>		
	18:55	19:00	<i>Closing remarks</i>		
	19:00	20:00	<b>Light Dinner</b>		

## Rudy Rossetto, Scuola Superiore Sant'Anna - Institute of Life Sciences (Italy)



**Rudy Rossetto** is Researcher at Scuola Superiore Sant'Anna. Rudy deals with surface and subsurface hydrology and he holds a MSc in Earth Science from Uni. of Pisa (IT), a MSc in Geoenvironmental Engineering from Cardiff Uni. (UK), and a PhD in Engineering Geology from Uni. of Siena (IT). Main research fields are development and application of GIS integrated groundwater and solute transport numerical models to water management issues (special focus on the Mediterranean environment) and the analysis of functionalities of blue infrastructures (phyto-treatment plants and Managed Aquifer Recharge schemes) for the provision of water related agro-ecosystem services. Rudy coordinated the recently funded EU HORIZON 2020 FREEWAT project (FREE and open source software tools for WATER resource management [www.freewat.eu](http://www.freewat.eu)) and WP8 leader in EU FP7 MARSOL (Managed Aquifer Recharge as a solution to drought and water scarcity [www.marsol.eu](http://www.marsol.eu)) Sant'Alessio induced riverbank filtration case study. Coordinator of the Italian - Israeli bilater project PHARM-SWAP MED (removal of PHARMaceuticals from the Soil-Water-Plant continuum in MEDiterranean Environment) and technical coordinator of the EU LIFE REWAT project ([www.life-rewat.eu](http://www.life-rewat.eu)). Since 2012 he is Co-Editor in Chief of Acque Sotterranee-Italian Journal of Groundwater (<http://www.acquesotterranee.online/index.php/acque>). More info at [https://www.researchgate.net/profile/Rudy\\_Rossetto](https://www.researchgate.net/profile/Rudy_Rossetto)

## Iacopo Borsi, TEA SISTEMI S.p.A. (Italy)



**Iacopo Borsi** is an applied mathematician with more than 16 years of experience on modeling industrial and environmental processes, with emphasis on physical modelling. Specific skill in flow in porous media description, single and multi-phase, with particular interest in hydrological/hydrogeological processes (groundwater flow and solute transport). Expertise in software tools, GIS modeling and programming languages. Teaching experience at national and international level. Author of one monograph and more than twenty-five papers in international journals. Reviewer for international journals on applied and industrial mathematics, environmental and chemical engineering. Since 2012, Co-editor in chief of Acque Sotterranee-Italian Journal of Groundwater. Since 2013, Member of Managing Board of SIMAI (Italian Society for Applied and Industrial Mathematics). Member of IAH and IAMGS (International Association for Mathematical Geosciences). Iacopo is currently employed as Senior Environmental Modeler at TEA Sistemi SpA, an Italian private company delivering research and consultancy services in energy and environment sector.

## Giovanna De Filippis, Scuola Superiore Sant'Anna - Institute of Life Sciences (Italy)



**Giovanna De Filippis** is post-doctoral researcher at Institute of Life Science at Scuola Superiore Sant'Anna (Pisa, Italy). She holds an MSc degree in physics and a PhD in Earth Sciences from. Since 2012, she has been dealing with numerical modelling applied to groundwater flow and related processes (e.g., solute transport, conjunctive use of ground- and surface-water, crop growth modelling, density-dependent flow, sensitivity analysis and model calibration). She holds digital skills related to the application of ICT software tools for water resource management (GIS and programming languages). Since 2016, she has been collaborating to relevant EU-funded projects (e.g., FP7 MARSOL, H2020 FREEWAT, LIFE REWAT). Teaching experience at national and international level. Co-author of about ten indexed and peer-reviewed scientific papers and about forty national and international conference papers. Member of the IAH Association and co-chair of the ECHN-Italy group since 2017. National Representative for the YHS group. Associate Editor of Acque Sotterranee-Italian Journal of Groundwater.

## SPEAKERS

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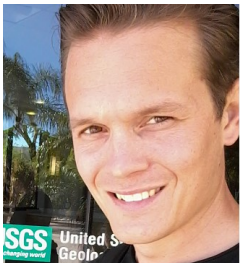
### Rotman Criollo, Consejo Superior de Investigaciones Científicas, Institute of Environmental Assessment and Water Research (Spain)



**Rotman Criollo** is interested in the analysis and management of hydrogeological data, the design and the development of databases and tools to optimise hydrogeological analysis within Geographic Information Systems (GIS) with knowledge in IT project management. Additionally, he has more than 5 years of experience in scientific projects related with civil engineering and hydrogeology: environmental assessments, geothermal exploration and exploitation, monitoring and analysis of groundwater in civil works by field campaigns, laboratory experiments and numerical modeling.

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### Daniel Bittner, Technische Universität München (Germany)



**Daniel Bittner** is a PhD student at the Chair of Hydrology and River Basin Management at the Technical University of Munich (TUM). He finished his Master degree in Geosciences at the University of Trier in 2016. During and after his Master studies, Daniel earned practical working experiences as a geologist in an engineering office and as a research fellow at the Federal Institute of Hydrology in Germany. In 2017, he started his PhD at TUM. His research focus is on modeling karst water resources. In particular, he investigates the uncertainties related to karst models and how land cover changes affect the hydrological properties of karst systems. Motivated by his research interest, Daniel developed the LuKARS model that enables simulating the hydrological impacts of land use changes on karst systems. Given its lumped character, he recently investigated a new dimension reduction technique to make predictions with LuKARS more reliable.

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### Manuel Oliveira, National Laboratory for Civil Engineering (Portugal)



**Manuel Oliveira** holds a Ph.D. in Geology (Hydrogeology branch), by the Faculty of Sciences of Lisbon in 2004, having developed the dissertation with the title: "Groundwater recharge: Assessment methodologies". His current position is Assistant Researcher in the National Laboratory for Civil Engineering (LNEC), developing his activity in the Water Resources and Hydraulic Structures Unit of the Hydraulics and Environment Department. The main areas of expertise where he has been developing his activity include: quantification of groundwater resources, regional hydrogeological studies, groundwater flow numerical modelling, groundwater vulnerability and risk to pollution assessment, climate change impacts on groundwater resources, river basin management planning, and geographical data modelling. Lately he has become a FREE-WAT platform enthusiastic, using this platform for the numerical modelling of aquifer systems and developing some code. The overall activity is published in more than 200 technical reports, more than 90 communications to scientific meetings and more than 30 papers in books or journals.

### Andreas Kallioras, National Technical University of Athens (Greece)



**Andreas Kallioras**, Dr.Eng., is an Assistant Professor at the School of Mining and Metallurgical Engineering-National Technical University of Athens (Greece), Guest Fellow at the Helmholtz Environmental Research Centre-UFZ (Germany) and Visiting Lecturer at Technical University of Darmstadt (Germany). He is an Environmental Engineer and his scientific activities and interests include arid hydrogeology, management of coastal aquifers (with emphasis on seawater intrusion); development of innovative field techniques to quantify groundwater recharge; groundwater resources management; transboundary water resources management. He has been involved in groundwater resources investigation projects in Greece, Germany, Saudi Arabia, Italy, Tunisia, Madagascar, and Bangladesh with published peer-reviewed articles in more than 20 journals, 30 conferences and 4 book chapters. He worked/working as PI in the following EU research projects: MARSOL (FP7, 2013-2016); TRUST (FP7, 2011-2015); FREEWAT (H2020, 2015-2018), SUBSOL (H2020, 2015-2018), SCENT (H2020, 2016-2019), LOTUS (H2020, 2019-2022), MARSOLUT (H2020, 2019-2022).

### Massimiliano Cannata, Scuola Universitaria Professionale della Svizzera Italiana (Switzerland)



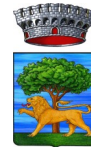
**Massimiliano Cannata** is professor in Geomatics at the University of Applied Sciences and Arts of Southern Switzerland (SUPSI) and head the division of geomatics within the Institute of Earth Sciences (IST-SUPSI). He received the PhD in Gedeoesy and Geomatics after his master degree in environmental engineering at the Politecnico di Milano. He's currently active in the Open Source community (OSGeo Charter Member, FREEWAT PSC, ZOO-project PSC, istSOS PSC) and his interests are mainly related to (i) monitoring systems and data managements; (ii) GIS embedded environmental modeling; (iii) geospatial Web services development; (iv) natural hazards assessment. Massimiliano has over 15 years of experience of projects in Europe, Asia and Caribbean where he conduct both applied research projects, mainly funded by Swiss National Science Foundation or European research programmes, and consultancy, mostly funded by Swiss Administration or World Bank.

# CREDITS

## LIFE REWAT project partners



## LIFE REWAT project co-financers



## Supported by



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## Patronage



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