SimHydro 2021

Models for complex and global water issues : Practices and expectations

Program Book
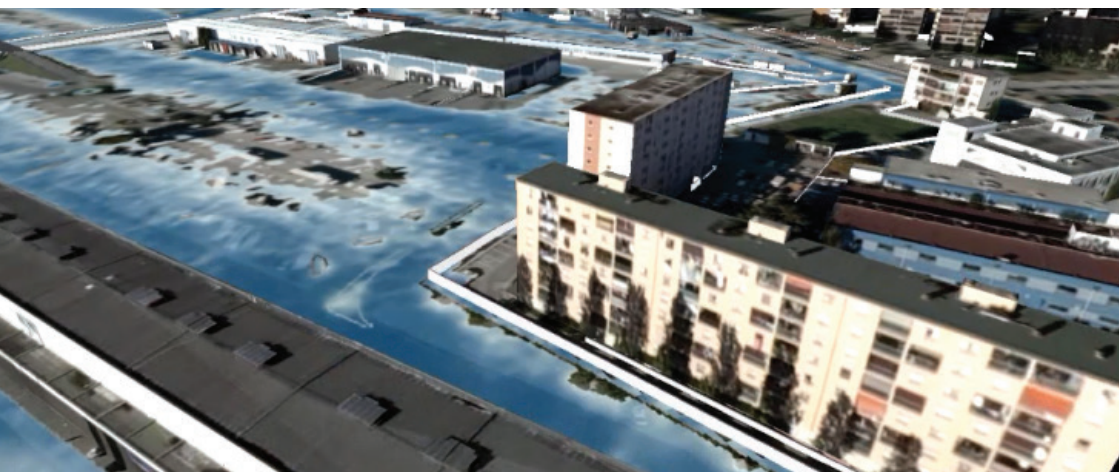
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GENERAL INFORMATION

Welcome to SimHydro 2021!

SimHydro 2021 seeks to create a forum for exchanging ideas, for promoting ground-breaking technologies, for proposing new extensive collaborations, for finding new solutions for water issues and modelling approaches. The general theme of the conference will be focused on " Models for complex and global water issues - Practices and expectations ". The water field is continuously mobilizing models for addressing complex issues and new challenges. Within the context of the climate change, the water issues are exacerbated with the competition among uses. The limited water resources request from the modern societies to review some of the historical paradigms traditionally used and to promote new approaches for a sustainable management. The combined complexity and vulnerability of large urban environments request a deep understanding of water uses and environmental synergy. At the same time, water related natural hazards are contentiously straightening modern societies that have to adapt and implement a more resilient environment. In parallel, in the industrial sector, the search for a high level of efficiency for hydraulic machinery requests to simulate complex processes.

Under all these situations, the models currently used represent only partly the physical phenomena involved, the scale of the processes, the hypothesis included within the different numerical tools, etc. The design and the operation of relevant models represents a challenging task for the modeller who is responsible of the knowledge part of a global system that is dedicated to support the decision makers.

The conference is targeting an international audience and endeavors to collect high value papers that will be published in scientific journals and a specific book (Advances in Hydroinformatics with Spinger Nature).
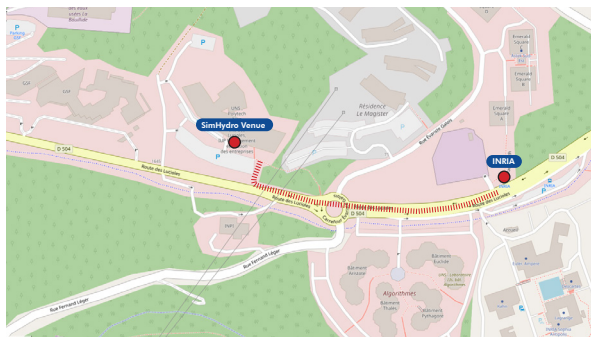
Hope to see you soon in Sophia Antipolis in June 2021.

SimHydro 2021 will be held in Polytech Nice Sophia, located at **1645 Route des Lucioles, 06410 Biot Sophia Antipolis**. You can reach Polytech Nice Sophia by:

> Bus: The bus stop for Polytech Nice Sophia Campus is Inria (Biot).
> From Nice   : Line 230 "Sophia Express"
> From Antibes: Envibus network (envibus.fr)

PROGRAM AT A GLANCE

Time	16th June	17th June	18th June
0830 hrs	Registration		
0900 hrs	Openning Ceremony / Keynote Speeches / Grand Prix Hydrotechnique	Planery Session / Special Session / Prix Jean Valembois	Planery Session / Keynote Speeches
0930 hrs			
1000 hrs			
1030 hrs	Parallel Sessions I		Parallel Sessions VI
1100 hrs			
1130 hrs			
1200 hrs			
1230 hrs		Break	
1300 hrs	Break		Break
1330 hrs		Parallel Sessions IV	
1400 hrs	Parallel Sessions II		
1430 hrs			Parallel Sessions VII
1500 hrs			
1530 hrs			
1600 hrs			
1630 hrs	Parallel Sessions III	Parallel Sessions V	
1700 hrs			End of Conference
1730 hrs			
1800 hrs			
1900 hrs			

LEGEND

- Uncertainties
- Flash Floods
- Coastal Environment & Processes
- Numerical Methods & Tools
- Water Services
- Nature Based Solution - Reconnect
- Physical Processes & Modelling Methods
- Real Time & DSS
- Telemac
- Hydrological Extremes Modelling
- WaterEurope
- AI Technics & Applications Hydrological
- Floods Modelling
- Hydropower
- Hydroenvironmental Issues
- Multiphase Flows & Interactions
- Methods and Models for Hydrology and Climate Change

PROGRAM SCHEDULE

DAY 1| JUNE 16

Openning Ceremony & Keynote Speech — Room A

Time	
0900 - 0910	**Openning Speech** by Prof. Philippe Gourbesville
0910- 1000	**Future of hydroinformatics: innovative trends and challenges** **Keynote Speakers:** Dr. Henrik Madsen, Head of Research & Innovation at DHI Group Prof. Elie Hachem, Head of Computing and Fluids research group at CEMEF, Mines ParisTech
1000 - 1010	**Grand Prix Hydrotechnique 2021: Pierre-Louis Viollet**

Parallel Session I

Time	
1030 - 1230	**Uncertainties (I)** **Flash Floods** **Coastal Environment & Processes**

Uncertainties (I) — Room B

Time	Session Chairs: Nicole Goutal, Sophie Ricci
1030 - 1050	**Towards the Reduction of Uncertainty In Hydraulic Models For Unsteady Flows Via A Machine-Learning-Based Surrogate Model** by Siham El Garroussi, Sophie Ricci and Matthias De Lozzo
1050 - 1110	**Double-Scale Diffusive Wave Model Dedicated to Spatial River Observation and Associated Covariance Kernel for Variational Data Assimilation** by Thibault Malou and Jérôme Monnier
1110 - 1130	**Uncertainty Quantification in Hydrodynamic Modelling Using the Example Of A 2D Large-Scale Model Of The River Elbe** by Rebekka Kopmann and Andreas Schmidt
1130 - 1150	**Uncertainty Quantification and Global Sensitivity Analysis with Dependent Inputs Parameters: Application to A Basic 2D-Hydraulic Model** by Lucie Pheulpin, Nathalie Bertrand and Vito Bacchi
1150 - 1210	**Sensitivity Analysis of The Digital Twin of The Canal of Calais To the Outlet Gate Modelling** by Roza Ranjbar, Eric Duviella, Lucien Etienne and Jose Maria Maestre
1210 - 1230	**Quantification of Historical Skew Surges: Challenges and Methods** by Emmanuelle Athimon, Nathalie Giloy, Thierry Sauzeau, Marc Andreevsky and Roberto Frau

Flash Floods · Room A

Time	Session Chairs: Changjun Liu, Philippe Gourbesville
1030 - 1050	**Risk Analysis for Flash Flood Hazards in China** by Qing Li, Qiang Ma, Changzhi Li, Changjun Liu and Bingshun He
1050 - 1110	**Determination and Application of Dynamic Rainfall Threshold for Flash Flood Warning** by Xiaoyan Zhai, Changjun Liu, Qiang Ma, Ronghua Liu, Xiaolei Zhang and Qi Liu
1110 - 1130	**Optimized Reservoir Prior Release Operation for Flood Control Considering Operational Weekly Ensemble Hydrological Forecast** by Daisuke Nohara
1130 - 1150	**Dam Break Analysis and Flood Inundation Mapping: A Case Study of Pinatubo Crater Lake** by Mark Rigel Lorenzo, John Micah Valdez and Arturo Daag
1150 - 1210	**Geographical Cluster of Flash Flood Hazards in Jiangxi, China: A Spatial Analysis Perspective** by Xiaoxiang Zhang, Yuehong Chen, Xiuqin Fang, Liliang Ren and Qiang Ma
1210 - 1230	**Flood Prevention and Mitigation in Small and Medium River Basins with Complex Flood Control Facilities** by Kohji Tanaka, Hideaki Nakashima, Masaaki Hashimoto and Hideyuki Yamaji

Coastal Environment & Processes · Room C

Time	Session Chair: Olivier Bertrand
1030 - 1050	**Modelling Cyclonic Events in The Pacific** by Olivier Bertrand, Anne Levasseur, Thibault Oudart and Mehdi Pierre Daou
1050 - 1110	**Merenptah: High Tide Level Forecasting Tool with Application To The Gironde Estuary** by Nicolas Chini, Cécile Calas, Adelaïde Martin-Herrou, Hélène Habarou, Christian Raffourt and Philippe Bardey
1110 - 1130	**Efficiency Assessment of Wave Parameters to Different Typhoon Scenarios in Ninh Thuan Province, Vietnam** by Thanh Nhan Duc Tran, Trung Tri Nguyen, Quang Binh Nguyen, Ngoc Duong Vo and Philippe Gourbesville
1130 - 1150	**Improving Water Levels Forecast in The Gironde Estuary Using Telemac2D And Data Assimilation to Infer Time-Dependent Boundary Conditions** by Vanessya Laborie, Nicole Goutal and Sophie Ricci
1150 - 1210	**Implementation of A Hydrologic Model as An Element of The Litter-TEP Service - Marine Litter Tracking and Stranding Forecast for The Understanding of The Coastal Patterns Change** by Anne Vallette, Quentin Gunti and Anne-Laure Beck
1210 - 1230	**Polder2CÕs: An In-Situ Experimental Site to Improve the Modelling of Levee Failure Processes** by Stephan Rikkert and Cédrine Alleon

Parallel Session II

Time	
1400 - 1600	Numerical Methods & Tools Water Services Nature Based Solution - Reconnect (I)

Numerical Methods & Tools — Room A

Time	Session Chair: Vincent Guinot
1400 - 1420	**Local Downscaling of Shallow Water Simulations** by Vincent Guinot and Pacal Finaud-Guyot
1420 - 1440	**SW2D-LEMON: A New Software for Upscaled Shallow Water Modeling** by Joao Guilherme Caldas Steinstraesser, Carole Delenne, Pascal Finaud-Guyot, Vincent Guinot, Joseph Luis Kahn Casapia and Antoine Rousseau
1440 - 1500	**1D Numerical Tool for Real Time Modelling of a Complex River Network** by Benoît Camenen, Stéphanie Decanis, Laurent Dieval and Jean-Baptiste Faure
1500 - 1520	**An Effective Urban Flood Model Accounting for Street-Building Exchanges** by Cécile Choley,Pascal Finaud-Guyot, Pierre-André Garambois and Robert Mose
1520 - 1540	**Contribution of A Depth-Dependent Porosity Model for The Rapid Simulation of Flood Inundations** by Vita Ayoub, Carole Delenne, Pascal Finaud-Guyot, Patrick Matgen and Renaud Hostache
1540 - 1600	**Numerical and Methodological Developments In 1D+ ISM Models for Operational Purposes** by Yassine Kaddi,Fraçois-Xavier Cierco, Jean-Baptiste Faure and Sébastien Proust

Water Services — Room B

Time	Session Chairs: Manuel Gomez, Cécile Münch-Alligné
1400 - 1420	**Numerical Simulations for Multipurpose Reservoirs for Alpine Irrigation** by Théo Gonin, Jérémy Schmid, Damien Pettinaroli, Jean Decaix, Alexandre Gillioz and Cécile Münch-Alligné
1420 - 1440	**Smart Data-Models for Optimal Raw-Water Supply System Modelling, Management and Operation** by Panagiotis Kossieris, Christos Pantazis and Christos Makropoulos
1440 - 1500	**Energy Efficiency in Water Supply Systems Using Real-Time Monitoring Systems Based on Iot** by Dongwoo Jang, Youn-Gyu Choi, Guoo-Sung Park and In-Jun Yoon
1500 - 1520	**Hydraulic Modeling of a Large-Scale Sanitary System in River Flood Conditions: Application To the Seine River Basin** by Thierry Lepelletier, Mathilde Bertrand and Thomas Bienvenu Marion Couet, Andrew Lister, Jeremy Georges

1520 - 1540	Model Predictive Control for Coordinating Pumps in Urban Drainage Systems by Chengzi Chew
1540 - 1600	Integrating EPANET and FIWARE for Development of Water Distribution System Digital Twins by Chris Sweetapple,Elad Salomons, Franck Le Gall, Ahmed Abid, Lydia Vamvakeridou-Lyroudia, Albert Chen and Joep van den Broeke

Nature Based Solution - Reconnect (I)   Room C

Time	Session Chairs: Zoran Vojinovic, Natasa Manojlovic
1400 - 1420	RECONNECT Project Presentation by Zoran Vojinovic
1420 - 1440	A Framework for Evaluating Performance of Large-Scale Nature-Based Solutions to Reduce Hydro-Meteorological Risks and Enhance Co-Benefits by Laddaporn Ruangpan and Zoran Vojinovic
1440 - 1500	Managing Droughts in Northern Germany: The RECONECT NBS Approach and Water Resources Model for Vier- Und Marschlande Area, Hamburg, Germany by Peter Fröhle, Natasa Manojlovic, Yohannis Tadesse, Angelika Gruhn, Christian Ebel and Hartmut Dittrich
1500 - 1520	Opportunities and Challenges of Natural-Based Solutions in Urban Areas - French Case Studies by Jelena Batica and Philippe Gourbesville
1520 - 1540	Terraced Area as Possible Source of Shallow Landslide: Modeling the Collapse Effects in The Portofino Pilot Area of The RECONECT Project by Guido Paliaga, Steven Ward, Fabio Luino, Laura Turconi and Francesco Faccini
1540 - 1600	Benefits of Green Infrastructure for Flood Mitigation in Small Rural Watersheds - Case Study of The Tamnava River in Serbia by Ranko Pudar and Jasna Plavsic

1600 - 1630	Break

Parallel Session III

Time	
1630 - 1800	Physical Processes & Modelling Methods Real Time & DSS Nature Based Solution - Reconnect (II)

Physical Processes & Modelling Methods   Room A

Time	Session Chair: André Paquier
1630 - 1650	Application of A Modified Parareal Method for Speeding Up the Numerical Resolution of the 2D Shallow Water Equations by Joao Guilherme Caldas Steinstraesser, Vincent Guinot and Antoine Rousseau

1650 - 1710	**Validation of A General-Purpose Erosion-Sedimentation Model on A Laboratory Experiment** by Noémie Gaveau, Carine Lucas and Frédéric Darboux
1710 - 1730	**Modelling Culverts in Basilisk** by Zied Amama, Nicolas Branco, Cheikh Mangara, Kevis Mbonyinshuti, Qiyu Yu, Thibaut Cottancin, Sarah Vigoureux, Pierre Brigode, Olivier Delestre and Pierre-Yves LagrŽe

Real Time & DSS
Room B

Time	Session Chair: Philippe Gourbesville
1630 - 1650	**Challenges for Realtime DSS: Experience from AquaVar System** by Philippe Gourbesville, Masoud Ghulami, Marc Gaetano, Hezouwé Amaou Tallé and Ludovic Andres
1650 - 1710	**Extraction of Filters Applicable to Flood Forecasting Model and Performance Evaluation by Information Criterion** by Masayuki Sugiura and Kohji Tanaka
1710 - 1730	**Emergent Watershed Properties Resulting from Real-Time Control** by Brooke Mason and Branko Kerkez
1730 - 1750	**Development of An Operational Flood Forecasting System for The Basins of Bouregreg and la Chaouia** by Aloïs Denervaud and Bertrand Richaud

Nature Based Solution - Reconnect (II)
Room C

Time	Session Chairs: Zoran Vojinovic, Natasa Manojlovic
1630 - 1650	**Implementation of Nature-Based Solutions for Flood Risk Reduction: Challenges, Opportunities and Progress** by Sisay E Debele,Jeetendra Sahani, Katriina Soini, Silvana Di Sabatino and Prashant Kumar
1650 - 1710	**Modelling Nature-Based Solutions with Quasi-2D Model** by Leng-Hsuan Tseng, Zoran Vojinovic, Meng-Hsuan Wu, Dong-Jiing Doong and Weicheng Lo
1710 - 1730	**Bregana River Basin: Hydrodynamic Modeling and Analysis of NBS Suitability Within the RECONECT Project** by Draženka Kvesić, Ratko Ramuščak and Božidar Deduš

DAY 2| JUNE 17

Planery Session
Room A

Time	Session Chair: Philippe Gourbesville
0900 - 1200	**Special Session: Extreme hydrological event of October, 2nd, 2020 - French Riviera**
1200 - 1210	**Prix Jean Valembois: Davide Wuthrich (2019), Thomas Fonty (2020)**

Parallel Session IV

Time	
1330 - 1530	**Telemac** **Floods Modelling (I)** **Hydrological Extremes Modelling**

Telemac   Room A

Time	Session Chairs: Pablo Tassi, Olivier Bertrand
1330 - 1350	**Fully Three-Dimensional Sediment Transport Modeling of The Gironde Estuary** by Nicolas Huybrechts, Pablo Tassi and Fabrice Klein
1350 - 1410	**Calibration Of 1D and 2D Fluvial Models with A Metamodel Based Optimization** by Guillaume Bénéfice, Luc Duron, Amaya Villanueva and Rui Yang
1410 - 1430	**Coupling Surface Grain-Size and Friction for Realistic 2D Modelling of Channel Dynamics on Massive Bedload Deposition** by Matthieu Gonzales de Linares, Florian Ronzani, Alain Recking, Vincent Mano and Guillaume Piton
1430 - 1450	**Hydraulic Modelling Studies for The Rehabilitation of Waterways on The Congo River** by Olivier Bertrand, Jean-Noël Arnaud, Thibault Oudart and Luc Bazerque
1450 - 1510	**Study of Coastline Dynamics and Swell / Bathymetry Interactions: Submersion and Sediment Dynamics** by Paguedame Game
1510 - 1530	**Simulation of The Alex Storm Flash-Flood in The Vžsubie Catchment (South Eastern France) Using Telemac-2D Hydraulic Code** by Mickael Lastes, Aymeric Argence, Alan Gandouin, Clément Imperatrice, Ruida Zhang, Pierre Brigode, Olivier Delestre, Florent Taccone and Rabab Yassine

Floods Modelling (I)   Room B

Time	Session Chair: André Paquier
1330 - 1350	**2-D Simulation of Flow Entering A Building** by André Paquier, Cheikh Mangara, Emmanuel Mignot, Benjamin Dewals and Xue Fang Li
1350 - 1410	**Investigation of The Hydraulics in Flooded Housing Estate** by Augustin Doumic, Nicole Goutal and Frédérique Larrarte
1410 - 1430	**Modelling and Assessment of Sustainable Urban Drainage Systems in Dense Precarious Settlements Subject to Flash Floods** by Luma F. Alves, Carlos O. Galvo, Bervylly F. Santos, Eldson F. de Oliveira and Dem—stenes A. de Moraes
1430 - 1450	**Benefit of Coupling 1d-2d Model Over an Urban Area to Assess Runoff During A Storm Event** by Nathalie Bertrand, Morgan Abily and Olivier Delestre

1450 - 1510	**Possible Urbanization Induced Floods in And on Surrounding Areas of The New Capital City of Indonesia** **by Dong Eon Kim, Jiandong Liu, Mingyan Wang, Philippe Gourbesville and Shie-Yui Liong**
1510 - 1530	**Application of A Physics Based Distributed Integrated Hydrological Model in Flood Risk Management** **by Erwan Allard and Jean-Paul Ducatez**

Hydrological Extremes Modelling   Room C

Time	Session Chairs: Frank Molkenthin, Olivier Delestre
1330 - 1350	**Analysis of Extreme Precipitation During the Mediterranean Event Associated with The Alex Storm in The Alpes-Maritimes: Atmospheric Mechanisms and Resulting Rainfall** **by Raphaël Chochon, Nicolas Martin, Thomas Lebourg and Maurin Vidal**
1350 - 1410	**Are Hydrologic-Hydraulic Coupling Approaches Able to Reproduce Alex Flash-Flood Dynamics and Impacts on Southeastern French Headwaters?** **by Pierre Brigode, François Bourgin, Olivier Delestre and Pierre-Yves LagrŽe**
1410 - 1430	**Improving the Efficiency of Flash Flood Forecasting and Warning System in Thailand** **by Apimook Mooktaree, Sathit Chantip, Piyamarn Sisomphon and Ticha Lolupiman**
1430 - 1450	**An Anti-Noise Dealiasing Algorithm for Doppler Weather Radar Data Quality Control** **by Jiyang Tian, Qi Liu, Changjun Liu and Qiang Ma**
1450 - 1510	**Comparative Study of Three Rainfall-Runoff Models and The Effect of Climate Change on Flood Forecasting in Tafna Basin** **by Mohamed Abdelmouiz Takkouk, Mohammed Kamrujjaman Rabin, Saddok Takkouk and Ammar Bouguerne**
1510 - 1530	**Prediction of Index Rainfall Using A Cubist Model: A Case Study of Cheliff Watershed (Algeria)** **by Chafai Tarfaya and Larbi Houichi**

1530 - 1600	**Break**

Parallel Session V

Time	
1600 - 1800	**AI Technics & Applications** **Floods Modelling (II)** **WaterEurope**

WaterEurope — Room A

Time	Session Chair: Philippe Gourbesville
1600 - 1620	**WaterEurope: Hydroinformatics For Water Resources and Water Related Hazards Management in Europe** by Philippe Gourbesville, Manuel Gomez, Frank Molkenthin, Caspar Hewett, Grzegorz Sinicyn and Ann Van Griensven
1620 - 1640	**Hydroeurope - Watereurope: 20 Years of Practice in Collaborative Engineering for Hydroinformatics** by Philippe Gourbesville, Manuel Gomez, Frank Molkenthin, Caspar Hewett, Grzegorz Sinicyn and Ann van Griensven
1640 - 1700	**Introduction of Double Master Degree Program: Korea-EU Educational Cooperation** by Dongwoo Jang, Hyoseon Park and Gyewoon Choi

Floods Modelling (II) — Room B

Time	Session Chairs: Valérie Banneville, Chengzi Chew
1600 - 1620	**Modelling the Combined Impacts of High River Discharges and Storm Surges on The Inundation of An Ungauged Coastal River Basin** by Manh Xuan Trinh and Frank Molkenthin
1620 - 1640	**Wood Debris Risk Analysis and Protection Scenarios of Lourdes City Using Iberwood Model** by Margaux Quiniou, Guillaume Piton, Cédric Perrin and Jeremy Savatier
1640 - 1700	**A Study on Flood Inundation Mapping of Surma River Floodplain Under Extreme Flood Scenario** by Purnima Das, Fahim Ahmad and Afeefa Rahman

AI Technics & Applications — Room C

Time	Session Chairs: Shie-Yui Liong, Wenchuan Wang
1600 - 1620	**Further Enhancement of Satellite DEM Resolution and Accuracy Using Machine Learning and Remote Sensing Data** by Dong Eon Kim, Jiandong Liu, Ludovic Andres, Philippe Gourbesville, and Shie-Yui Liong
1620 - 1640	**A Deep-Learning Method on Velocity Monitoring** by Guomin Lyu, Qiang Ma and Changjun Liu
1640 - 1700	**Data Quality Control Powered by Statistical Methods and Artificial Intelligence** by Siddharth Seshan, Dirk Vries and Johann Poinapen

DAY 3| JUNE 18

Planery Session	Room A
Time	**Session Chair: Cécile Münch-Alligné**
0900 - 0930	**Hydroelectric Standards Flow** **by Dr. Pierre Maruzewski, EDF**
0930 - 1000	**Hydro 4.0 Is Not Only "Big data"** **by Dr. Etienne Parkinson, ANDRITZ**

1000 - 1030	Break

Parallel Session VI	
Time	
1030 - 1230	**Hydropower** **Hydroenvironmental Issues** **Methods and Models for Hydrology and Climate Change (I)**

Hydropower	Room A
Time	**Session Chair: Cécile Münch-Alligné**
1030 - 1050	**Numerical Simulation of The Interaction Between the Jet and The Pelton Runner Under Low Head Conditions** by Jean Decaix, Anthony Gaspoz, Steve Crettenand and Cécile Münch-Alligné
1050 - 1110	**Numerical Fatigue Life Assessments of a Variable Speed Francis Pump-Turbine at Part Load Operation in Turbine Mode** by Daniel Biner, Drazen Dujic and Cecile Alligne
1110 - 1130	**Preliminary Design Validation of a New Run-Of-The-River Hydropower Scheme Using Physical and Numerical Hybrid Modelling** by Samuel Vorlet, Pedram Sahrai, Azin Amini and Giovanni De Cesare
1130 - 1150	**Effect of The Variable Speed on The Hydraulic Behavior of The Caniçada Francis Turbine** by Olivier Pacot, Claire Ségoufin, Thomas De-Colombel and Cécile Münch-Alligné
1150 - 1210	**Heuristic Shape Optimization of Overflow Spillways** by Fatna Oukaili, Yvan Bercovitz, Cedric Goeury, Fabrice Zaoui, Thomas Fonty and François Jouve
1210 - 1230	**Two- And Three-Dimensional Hydrodynamic Models of The Rance Estuary (France) Influenced by The World Second Largest Tidal Power Plan** by Rajae Rtimi, Aldo Sottolichio and Pablo Tassi

Hydroenvironmental Issues   Room B

Time	Session Chair: Morgan Abily
1030 - 1050	**Assessment of Spain Rivers Current and Future Ecological Status Using Urban Wastewater Dilution Factor as A Proxy Indicator** by Morgan Abily, Acuña Vicenç, Gernjak Wolfgang, Ignasi Rodriguez-Roda, Manel Poch and Llus Corominas
1050 - 1110	**Modelling Radionuclides Transfer at The River-Sea Interface** by Adrien Delaval, Céline Duffa and Olivier Radakovitch
1110 - 1130	**Towards Web Decision System Support (Web-DSS) For Planning Watershed in Colombia** by Viviana Vargas-Franco
1130 - 1150	**Towards an Index with Artificial Intelligence to Evaluate Vulnerability to Climate Change in Watersheds in Colombia** by Viviana Vargas-Franco
1150 - 1210	**Changes of River Discharge and Temperature by Using Distributed Runoff Model with The Global Warming Experiments, Frequency Analysis of Drought and Flood** by Akira Kurihara, Kohji Tanaka and Yutaka Ooyagi
1210 - 1230	**Three-Dimensional Simulation of Bacterial Pollution in Nice Bay for Operational Applications** by Julien Larraun, Rémi Dumasdelage and Olivier Delestre

Methods and Models for Hydrology and Climate Change (I)   Room C

Time	Session Chair: Frank Molkenthin, Manuel Gomez
1030 - 1050	**Physical Parameter Estimation as An Approach Towards A Global Hydrological Model** by Chengzi Chew
1050 - 1110	**Flood Analysis and Simulation Attempts of The Newly Proposed Capital City of Indonesia** by Mingyan Wang, Shie-Yui Liong, Philippe Gourbesville, Dong Eon Kim and Jiandong Liu
1110 - 1130	**Impacts of Climate Change on Water Availability for The Vésubie Catchment, France** by Masoud Ghulami, Philippe Gourbesville and Philippe Audra
1130 - 1150	**A Spatiotemporally-Mixed-Runoff-Model-Based Artificial Intelligence Parameter Regionalization Application in Henan Province of China** by Qiang Ma, Changjun Liu, Liang Guo, Liuqian Ding and Dongya Sun
1150 - 1210	**Assess Quality Terrain Data to The Simulation Results Hydrological Regime in Lai Giang Catchment, Vietnam** by Quang Binh Nguyen, Thanh Nhan Duc Tran, Ngoc Duong Vo and Philippe Gourbesville
1210 - 1230	**Influence of Mesh Size and Topography Resolution on Modeling Hydrological Processes in A Medium-Size Urban and Peri-Urban Catchment** by Paguedame Game

1230 - 1400	Break

Parallel Session VII

Time	
1400 - 1630	Multiphase Flows & Interactions Uncertainties (II) Methods and Models for Hydrology and Climate Change (II) Water Services: Digital Twin for The Water Sector Along the Water Cycle

Multiphase Flows & Interactions   Room A

Time	Session Chair: Giovanni De Cesare
1400 - 1420	Investigating the Behaviour Of Leaky Barriers with Flume Experiments And 3D Modelling by Shannon Leakey, Caspar Hewett, Vassilis Glenis and Paul Quinn
1420 - 1440	A Vaporization Model for Computational Fluid Dynamics Simulations - Application to Film Boiling by Charles Brissot, Rudy Valette and Elie Hachem
1440 - 1500	Towards A Discharge Law to Characterize Street-Building Exchanges During Urban Floods by Cécile Choley, Pascal Finaud-Guyot, Guilhem Dellinger and Robert MosePamphile Roy
1500 - 1520	Underground Flow Section Modification Below the New M3 Flon Metro Station in Lausanne by Leona Repnik, Samuel Vorlet, Mona Seyfeddine, Pierre Bourqui, Azin Amini and Giovanni De Cesare
1520 - 1540	Numerical Simulation of The Hydraulic Behavior for Stepped Stairs of The Metro Station by Jackson Tellez Alvarez, Manuel Gomez and Beniamino Russo
1540 - 1600	Computational Fluid Dynamic Wave Modelling: Sensitivity Analysis of The Loading on Offshore Structures by Thibault Oudart, Sylvain Perrin, Olivier Bertrand and Bruno Chaffraix
1600 - 1620	Assessment of Smart Heating and Cooling System Based on Thermal Use of Shallow Aquifer by Philippe Gourbesville and Masoud Ghulami

Uncertainties (II)   Room B

Time	Session Chair: Nicole Goutal, Sophie Ricci
1400 - 1420	Integrated Hydraulic-Hydrological Assimilation Chain: Towards Multisource Data Fusion from River Network to Headwaters by Léo Pujol, Pierre-André Garambois, Jérôme Monnier, Pascal Finaud-Guyot, Kevin Larnier and Robert Mos

1420 - 1440	**Meandering of The Venoge River at Bois-De-Vaux: In-Situ Measurements Versus 2D Numerical Predictions** by Charlotte Dreger, Erik Bollaert and Olivier Stauffer
1440 - 1500	**How to Optimally Represent Riverbed Geometry with A Simplified Cross-Section Shape in Shallow Water Models?** by Violeta Alexandra Montoya Coronado, Carole Delenne, Pascal Finaud-Guyot and Renaud Hostache
1500 - 1520	**Evaluate the Influence of Groynes System on The Hydraulic Regime in The Ha Thanh River, Binh Dinh Province** by Quang Binh Nguyen, Thanh Nhan Duc Tran, Dinh Tam Luc Le, Ngoc Duong Vo and Philippe Gourbesville
1520 - 1540	**Comparison of Streamflow Estimated by Image Analysis (LSPIV) And by Hydrologic and Hydraulic Modelling on The French Riviera During 2019 Floods** by Sarah Vigoureux, Léa-Linh Liebard, Aubin Chonoski, Etienne Robert, Louis Torchet, Valentin Poveda, Frédérique Leclerc, Jérémy Billant, Rémi Dumasdelage, Olivier Delestre and Pierre Brigode
1540 - 1600	**Analysis of Triple Rectangular Plates Configurations Impacts on Local Scour Around Cylindrical Single Bridge Pier** by Alireza Pourzaker Arabani and Hooman Hajikandi

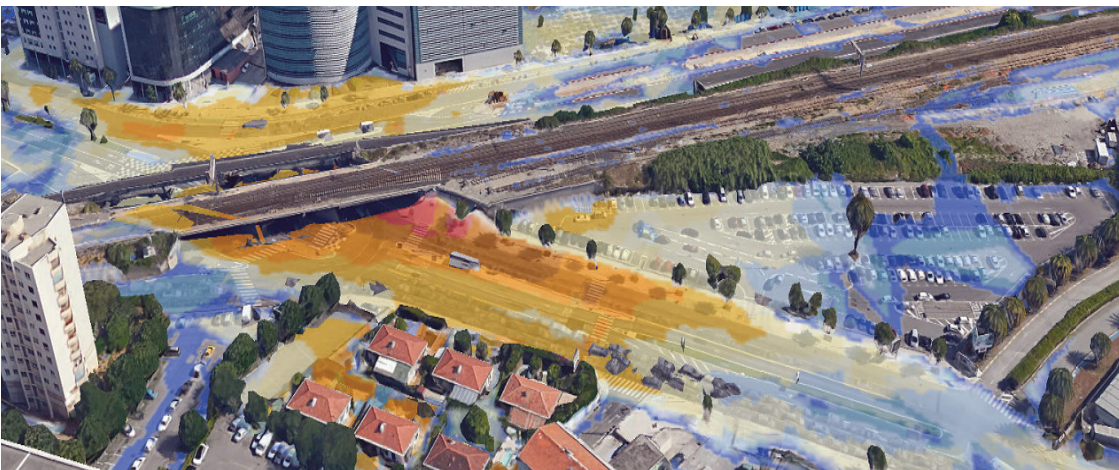## Methods and Models for Hydrology and Climate Change (II)   Room C

Time	Session Chair: Shie-Yiu Liong, Grzegorz Sinicyn
1400 - 1420	**A Rational Performance Criterion for Hydrological Model** by Dedi Liu and Qiang Ma
1420 - 1440	**Research and Application of Mountain Flood Disaster Prediction and Early Warning System Based on Machine Learning** by Wenchuan Wang, Yanwei Zhao, Changjun Liu, Dongmei Xu and Qiang Ma
1440 - 1500	**Numerical Assessment of Sediment Supply Impacting Flash Flood Propagation in Mountainous Confluences** by Xufeng Yan, Changjun Liu, Dongya Sun, Xiekang Wang and Qiang Ma
1500 - 1520	**Flood Risk Assessment and Hydrological Study of Meghna Economic Zone Using Mike 11** by Shahadat Hossain and Sabrina Rashid Sheonty
1520 - 1540	**Optimal Operation of Parallel Reservoirs System with Limited Storage Capacity for Flood Mitigation** by Thanh Hao Nguyen and Philippe Gourbesville
1540 - 1600	**Sizing Flood Control Storage of Reservoirs System in The Vu Gia Thu Bon Catchment** by Thanh Hao Nguyen and Philippe Gourbesville

Water Services: Digital Twin for The Water Sector Along the Water Cycle — Room D

Time	Session Chair: Franck Le Gall, Nicolas Caradot
1400 - 1420	**Soft Sensors and Machine Learning for Real-Time Optimization Of WWTP** by Francesco Fatone
1420 - 1440	**Real-Time Modelling of River Quality: Digital Twin for Bathing Water Management** by Pascale Rouault
1440 - 1500	**EPANET as A Digital Twin** by Chris Sweetapple
1500 - 1520	**Methodology For Model-Based Optimisation of Pump Operations for Leak Management** by Leonardo Alfonso, Ammanuel Tilahun
1520 - 1540	**How Fiware Enables Real-Time Anomaly / Threat / Hazard Visualisation for Water Networks** by Gareth Lewis
1540 - 1600	**Interoperability Data Models Capabilities and Limitations for Digital Twin Modelling at Water Domain** by Alberto Abella
1600 - 1630	**Discussions**

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