



**6<sup>th</sup> IAHR International Meeting of the Working Group on  
Cavitation and Dynamic Problems in Hydraulic Machinery and Systems,  
Ljubljana, Slovenia, September 9-11, 2015**



Supported by  
Spain Water  
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<b>Wednesday, 9. 9. 2015</b>		
<b>9:00</b>	<b>Opening ceremony</b>	
<b>9:30</b>	<b>Coffee break</b>	
<b>Numerical and experimental investigations of cavitating flows, Chairman: SUSAN-ROMEO RESIGA</b>		
9:45	<b>CENČIČ Tine</b>	An experimental investigation of cavitation in pump – storage SENG, Slovenia
10:00	<b>KOZÁK Jiří</b>	Analysis of pressure pulsations of cavitating flow in converging-diverging nozzle V. Kaplan Department of Fluid Engineering, Brno University of Technology
10:15	<b>DECAIX Jean</b>	RANS computations of cavitating vortex rope at full load University of Applied Sciences and Arts, Switzerland
10:30	<b>DULAR Matevž</b>	High Fidelity Simulations for the Prediction of Cavitation Erosion Lab. for Water and Turbine Machines, Univ. of Ljubljana
10:45	<b>FIALOVA Simona</b>	Mutual effects of cavitation and electromagnetic field Kaplan Dep. of Fluids Eng., Faculty of Mechanical Engineering, Brno University of Technology
11:00	<b>JOŠT Dragica</b>	Cavitation prediction in a Kaplan turbine using standard and optimized model parameters Turboinštitut (Slovenia)
<b>11:15</b>	<b>Coffee break</b>	
<b>Numerical and experimental investigations of cavitating flows, Chairman: MATEVŽ DULAR</b>		
11:30	<b>KASSANOS I.</b>	Numerical analysis of the effect of splitter blades on draft tube cavitation of a low specific speed Francis turbine Lab. of Hydraulic Machines, School of Mech. Eng., National Technical University of Athens
11:45	<b>MITRUŠEVSKI D.</b>	Cavitation due to the recirculation - important criteria for design of heavy duty process pumps SM Pumps, Ljubljana, Slovenia
12:00	<b>MOUSMOULIS G.</b>	Experimental and Numerical Investigation of the Cavitating Draft Tube Vortex in a Francis Model Turbine Lab. of Hydraulic Mach., School of Mechanical Engineering, National Technical Univ. of Athens
12:15	<b>STUPARU Adrian</b>	The origin of the plunging pressure fluctuations for a swirling flow with precessing vortex rope in a straight diffuser Politehnica University Timișoara, Research Centre for Complex Fluid Systems Engineering, Romania
12:30	<b>YAMAMOTO Keita</b>	Guide vanes embedded visualization technique for investigating Francis runner inter-blade vortices at deep part load operation EPFL Laboratory for Hydraulic Machines, Switzerland
12:45	<b>ŽNIDARČIČ Anton</b>	Development of an algorithm for fast DNS simulations of cavitating flows using homogeneous mixture approach Laboratoire de Mécanique de Lille, France
<b>13:00</b>	<b>Lunch</b>	
<b>Analysis of pumps, turbines and pump-turbines, Chairman: DRAGICA JOŠT</b>		
14:30	<b>JAVADI Ardalan</b>	Active Flow Control of Vortex Rope in a Conical Diffuser Department of Applied Mechanics Chalmers University of Technology, Gothenburg, Sweden
14:45	<b>JUNGINGER B.</b>	Numerical investigation of influence of runner gap for a low head turbine using hybrid RANS-LES turbulence model Inst. of Fluid Mech. and Hyd. Machinery, Univ. of Stuttgart
15:00	<b>MUNTEAN Sebastian</b>	Numerical Analysis of the Flow Non-Uniformity Generated by Symmetrical Suction Elbow of the Large Storage Pumps Center for Advanced Research in Engineering Sciences, Romanian Academy – Timișoara Branch
15:15	<b>NEIPP Andreas</b>	Automated CFD flow optimization of an axial expansion turbine for energy recovery from working fluids University of Stuttgart, Institute of Fluid Dynamics and Hydraulic Machinery, Stuttgart, Germany
15:30	<b>STADLER Christa</b>	Investigation of different methods for modelling interaction between hydrokinetic river turbines and the water surface University of Stuttgart, Institute of Fluid Dynamics and Hydraulic Machinery, Stuttgart, Germany
<b>15:45</b>	<b>Coffee break</b>	
<b>Analysis of pumps, turbines and pump-turbines, Chairman: HÅKAN NILSSON</b>		
16:00	<b>SUSAN-RESIGA Romeo</b>	On the hub-to-shroud ratio of axial expansion turbine for energy recovery Politehnica Univ. Timișoara, Research Centre for Complex Fluid Systems Eng., Romania
16:15	<b>SUSAN-RESIGA Romeo</b>	Development of a mathematical model for swirling flow exiting the runner of a hydraulic turbine Politehnica Univ. Timișoara, Research Centre for Complex Fluid Systems Eng.
16:30	<b>ŠKERLAVAJ Aljaž</b>	Experimental Observations and Numerical Simulations of a Free-Surface Vortex in a Test Vessel Turboinštitut d.d., Rovšnikova 7, 1000 Ljubljana, Slovenia
16:45	<b>VAGNONI Elena</b>	Experimental evaluation of the velocity profiles and performance of a counter rotating micro-turbine by 2D laser doppler velocimetry École polytechnique fédérale de Lausanne, Laboratory of Hydraulic Machines, Lausanne, Switzerland
<b>19:00</b>	<b>Guided walking tour of Ljubljana</b>	

**Thursday, 10. 9. 2015**

**Hydraulic oscillations, flow-induced vibrations and FSI, Chairman: SEBASTIAN MUNTEAN**

8:30	<b>BERGANT Anton</b>	Structural Response of a Pipeline Apparatus to Pulsating Flow at Resonance and Non-Resonance Conditions	Litostroj Power d.o.o., Litostrojska 50, 1000 Ljubljana, Slovenia
8:45	<b>CHIRKOV D.</b>	Evaluation of range of stable operation of hydraulic turbine based on 1D-3D model of full load pulsations	Institute of Computational Technologies SB RAS, Novosibirsk
9:00	<b>DEHKHARQANI Arash Soltani</b>	Steady and unsteady pressure measurements on a Kaplan runner blades model	Department of Engineering Science and Mathematics, Lulea Univ. of Technology
9:15	<b>DOLENC Damir</b>	Shaft radial oscillations induced by phenomenon in runner labyrinths	Litostroj Power d.o.o., Slovenia
9:30	<b>GAGNON Martin</b>	Turbine dynamic behavior and expected fatigue reliability	Hydro-Québec
9:45	<b>GUGGENBERGER Mark</b>	Investigating the dynamic aspects of the turbine instability of a pump turbine model	Graz University of Technology, Austria

**Coffee break**

**Hydraulic oscillations, flow-induced vibrations and FSI, Chairman: DAVID ŠTEFAN**

10:15	<b>GUILLOZET Josselin</b>	Space-time decomposition for analysing fluctuations in Francis turbines	Alstom Hydro Technology Centre in Grenoble (France)
10:30	<b>MA Zhenyue</b>	Natural vibration property analysis of hydraulic generating unit with dynamic characteristics of guide bearing	School of Civil and Hydraulic Eng., Dalian Univ. of Technology, P. R. China
10:45	<b>WEBER Wilhelm</b>	Analysis of natural frequencies of disc-like structures in water environment by coupled fluid-structure-interaction simulation	Corporate Technology, Voith Hydro Holding GmbH & Co. KG, Germany
11:00	<b>TANASA Constantin</b>	Numerical and experimental assessment of a passive method for mitigating the vortex breakdown in decelerated swirling flows	Department of Hydraulic Machines, Politehnica University Timisoara
11:15	<b>VALENTIN David</b>	Influence of non-rigid surfaces on the dynamic response of a submerged and confined disk	Centre de Diagnòstic Industrial i Fluidodinàmica (CDIF), Universitat Politècnica de Catalunya, Barcelona.
11:30	<b>PRESAS Alexandre</b>	On the excitation of a submerged and rotating disk-like structure with RSI patterns	CDIF, Barcelona, Spain

**Lunch**

**Hydraulic transients and control systems, Chairman: ANTON BERGANT**

13:15	<b>RUCHONET Nicolas</b>	Reduced scale model test of pump_turbine transition	Turbine Physics, Andritz Hydro SA, Switzerland
13:30	<b>KARADŽIĆ Uroš</b>	Developments in Pipeline Filling and Emptying Experimentation in a Laboratory Pipeline Apparatus	Faculty of Mechanical Engineering, University of Montenegro, Podgorica, Montenegro
13:45	<b>KUIBIN Pavel</b>	Model for cavity description in a Francis turbine draft tube	Kutateladze Institute of Thermophysics SB RAS, Russia
14:00	<b>NICOLET Christophe</b>	Influence of the surge tank water inertia on pumped storage power plant transients in case of pump emergency shutdown	Power Vision Engineering Sàrl
14:15	<b>NIELSEN Torbjørn K.</b>	The importance of including elasticity in stability evaluation of hydropower plants	The Water Power Laboratory at NTNU, Trondheim. Norway

**Coffee break**

**Hydraulic transients and control systems, Chairman: CHRISTOPHE NICOLET**

14:45	<b>PETIT Olivier</b>	Numerical and experimental investigations of a hydraulic channel during a gate closure at high Reynolds number	Chalmers University of Technology, Fluid Dynamics Division
15:00	<b>ILIEV Viktor</b>	A dynamic behavior of low head Hydro Power Plant during the transient operational regimes	University Ss. Cyril and Methodius, Faculty of Mech. Eng. , Skopje, Republic of Macedonia
15:15	<b>STENS Christine</b>	CFD simulation of the flow through a pump turbine during a fast transition from pump to generating mode	Institute of Fluid Mechanics and Hydraulic Machinery, University of Stuttgart, Germany
15:30	<b>ŠTEFAN David</b>	Comprehensive study of unsteady pressure pulsations induced by thespiral vortex structure in a conical diffuser	Brno Univ. of Technology, Faculty of Mechanical Engineering, Brno
15:45	<b>TORLAK Torlak</b>	Numerical analysis of water elevation in a hydropower plant surge tank	University of Sarajevo - Mechanical Engineering Faculty, Sarajevo, BIH
16:00	<b>RUPRECHT Albert</b>	Analysis and control of the part load vortex rope in the draft tube of a pumpturbine	Institute of Fluid Mechanics and Hydraulic Machinery, University of Stuttgart

**Closing ceremony**

**Gala dinner - bus from City hotel (18:45)**

**Friday, 11. 9. 2015**

**Technical tour, bus from City hotel 8:00 (lunch 15:00)**