

# CELEBRATING 40 YEARS OF INDUSTRY-ACADEMIC ENGAGEMENT

20<sup>th</sup> International Seminar on Hydropower Plants  
14 - 16 November 2018 - Vienna - Austria

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Conference Time: 08/Nov/2018 3:25:18 pm CET

## Conference Agenda

Overview and details of the sessions of this conference. Please select a date or location to show only sessions at that day or location. Please select a single session for detailed view (with abstracts and downloads if available).

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### Session Overview

Date: **Wednesday, 14/Nov/2018**

8:00am - 9:30am	<b>REGISTRATION</b>		
9:30am - 12:00pm	<p><b>OPEN: Conference Opening</b> Location: Theatre Hall Moderator <b>Stefan GEHRER</b> from the Austrian Broadcasting Corporation (ORF)</p> <p><b>CONFERENCE OPENING</b> <b>Christian Bauer</b> TU Wien, Institute for Energy Systems and Thermodynamics, Vienna, AUSTRIA</p> <p><b>SEMINAR ON HYDROPOWER PLANTS FROM 1980 TO 2018</b> <b>Heinz-Bernd Matthias, Klaus Käfer, Christian Bauer, Eduard Doujak</b> TU Wien, Institute for Energy Systems and Thermodynamics, Vienna, AUSTRIA</p> <p><b>BIG DATA OPPORTUNITIES AND CHALLENGES: HOW TO OBTAIN TRUSTWORTHY ANALYTICAL INSIGHTS</b> <b>Andreas Rauber</b> TU Wien, Institute of Information Systems Engineering, Vienna, AUSTRIA</p>		
12:00pm	<b>LUNCH-1: Lunch at the buffet area</b>		
1:30pm - 3:30pm	<p><b>PANEL: Panel discussion on Digitalization and Big Data in Hydropower</b> Location: Theatre Hall Moderator <b>Stefan GEHRER</b> from the Austrian Broadcasting Corporation (ORF) will lead this interesting discussion. Panelists are:</p> <ul style="list-style-type: none"> <li>- Prof. Dr. Andreas <b>RAUBER</b> (Head of Information &amp; Software Engineering Group @ TU Wien)</li> <li>- Jörg <b>LOCHSCHMIDT</b> (Vice President Digital Hydro @ VOITH)</li> <li>- Herfried <b>HARREITER</b> (Head of Asset Management @ VERBUND Hydro...)</li> </ul>	<p><b>SES-1.2: Material, Manufacturing and Design guidelines</b> Location: Marshall Room 1 Chair: <b>Dipl.-Ing. Josef Sugg</b>, Andritz Hydro GmbH, Germany</p> <p><b>IMPROVING TOUGHNESS OF EMBRITTLED S690 WELD METAL BY SPECIAL HEAT TREATMENT</b> <b>Horst Cerjak<sup>1</sup>, Ozan Caliskanoglu<sup>2</sup>, Norbert Enzinger<sup>1</sup>, Gunter Figner<sup>2</sup>, Milan Pudar<sup>3</sup>, Francisca Mendez-Martin<sup>4</sup></b> 1: Graz University of Technology, Institute of Materials Science, Joining and Forming, Graz, AUSTRIA; 2: Stirtec GmbH, Premstätten, AUSTRIA; 3: Magna Steyr Fahrzeugtechnik GmbH, Graz, AUSTRIA; 4: Montanuniversität Leoben, Leoben, AUSTRIA</p> <p><b>INFLUENCE OF PIPE FABRICATION QUALITY OF PENSTOCKS ON CALCULATED LIFE TIME</b> <b>Christian Buzzi<sup>1</sup>, Horst Cerjak<sup>1</sup>, Christian Moser<sup>1</sup>, Manel Akrou<sup>2</sup>, Bertrand Chanzy<sup>2</sup></b> 1: Graz University of Technology, Institute of Materials Science, Joining and Forming, Graz, AUSTRIA; 2: Tractebel Engineering S.A., FRANCE</p> <p><b>ROBOT BASED ADDITIVE MANUFACTURING IN THE PRODUCTION OF HYDROPOWER COMPONENTS</b> <b>Dimitrii Nikolaev, Friedrich Bleicher</b> TU Wien, Institute for Production Engineering and Laser Technology, Vienna, AUSTRIA</p> <p><b>ANALYSIS OF THE GRID REGULATION IMPACT ON WATER TURBINE SELF-LUBRICATING BEARINGS LIFETIME</b> <b>Paulo Sergio Martins Pereira, Kamran Laal Riahi, Willian Paes Barreto</b> Federal-Mogul Deva GmbH, Stadtländorf, GERMANY</p> <p><b>BOLTED JOINTS IN HYDROELECTRIC POWER PLANTS – COMPARISON OF RESULTS FROM TEST WITH CALCULATION RESULTS ON THE BASIS OF AN EXAMPLE</b> <b>Richard Huber</b> TUV AUSTRIA TVFA Prüf- und Forschungs GmbH, Vienna, AUSTRIA</p>	
3:30pm - 4:00pm	<b>COFFEE-1</b>		
4:00pm - 4:30pm	<b>TRANSFER-1: Bus transfer from Conference Center to the Hydraulic Laboratory at TU Wien</b>		
4:30pm - 6:00pm	<b>HYDRO-LAB: Visit of the Hydraulic Laboratory at TU Wien</b>		
6:00pm - 6:30pm	<b>TRANSFER-2: Bus transfer from the Hydraulic Laboratory at TU Wien to Evening Reception</b>		
6:30pm - 11:30pm	<b>EVENING-1</b>		

Date: **Thursday, 15/Nov/2018**

9:00am - 10:30am	<p><b>SES-2.1: Commissioning and Operation</b> Location: Theatre Hall Chair: <b>Stephan Kolb</b>, AF Consult Switzerland AG, Switzerland</p> <p><b>HYDROPOWER PLANT SCHÜTT – SECOND LIFE – REHABILITATING A DIVERTED FLOW POWER PLANT AFTER 105 YEARS OF OPERATION</b> <b>Peter Macher, Christian Rupp</b> KELAG Kärntner Elektrizitäts-Aktiengesellschaft, Klagenfurt, AUSTRIA</p> <p><b>INTEGRATION OF REISSECK II PUMPED STORAGE PLANT INTO THE OPERATION OF POWER SYSTEM MALTA</b> <b>Josef Mayrhuber</b> VERBUND Hydro Power GmbH, Vienna, AUSTRIA</p> <p><b>RETROSPECTIVE OF THE PROJECT „RENEWAL OF THE STORAGE PUMP OSCHENIK 1“</b> <b>Stefan Leitner, Michael Kandutsch</b> KELAG Kärntner Elektrizitäts-Aktiengesellschaft, Klagenfurt, AUSTRIA</p> <p><b>PUMPED-STORAGE POWER PLANT OBERVEMMUNTWERK II – EXPECTATION DURING ASSEMBLY AND COMMISSIONING</b> <b>Alexander Rocks, Bernhard Wittwer, Alexander Krieger, Lucas Warle</b> Vorarlberger Illwerke AG, Vandans, AUSTRIA</p>	<p><b>SES-2.2: Hydraulic Component Investigations</b> Location: Marshall Room 1 Chair: <b>Prof. Pavel Rudolf</b>, Brno University of Technology, Czech Republic</p> <p><b>IN SITU INVESTIGATIONS AND FAILURE ANALYSIS OF THE RAINWATER PUMPS INSTALLED IN A WASTEWATER TREATMENT PLANT</b> <b>Sebastian Muntean<sup>1,2</sup>, Liviu Marşavina<sup>2</sup>, Alexandru Hedeş<sup>2</sup>, Liviu Eugen Anton<sup>2</sup>, Ilie Vlaicu<sup>3</sup></b> 1: Romanian Academy - Timişoara Branch, ROMANIA; 2: Universitatea Politehnica Timişoara, Timişoara, ROMANIA; 3: AQUATIM SA, Municipal Water Company, Timişoara, ROMANIA</p> <p><b>PERFORMANCE CHARACTERISTIC OF A SINGLE-BLADE PUMP FROM THE VIEWPOINT OF A POSITIVE DISPLACEMENT MACHINE</b> <b>Reinhard Willinger</b> TU Wien, Institute for Energy Systems and Thermodynamics, Vienna, AUSTRIA</p> <p><b>CAVITATION IMPROVEMENT OF STORAGE PUMP WITH REPLACEMENT OF IMPELLER</b> <b>Rok Pavlin<sup>1</sup>, Franci Vehar<sup>1</sup>, Aljaz Škerlavaj<sup>1</sup>, Maximilian Titzschkau<sup>2</sup></b> 1: Kolektor Turbinštitut, d.o.o., Ljubljana, SLOVENIA; 2: Kraftwerke Oberhasli AG - Grimsel Hydro, Innerkirchen, SWITZERLAND</p> <p><b>TECHNICAL SOLUTION TO INCREASE CAPACITY OF THE CENTRIFUGAL PUMPS OPERATED IN THE PROTECTION SYSTEM AGAINST FLOODING DUE TO CLIMATE CHANGE</b> <b>Denis Ognjan<sup>1</sup>, Daniel Calin Moş<sup>1</sup>, Sebastian Muntean<sup>2</sup></b></p>	<p><b>SES-2.3: Future Technologies</b> Location: Franz Josef Seminar Room</p> <p><b>PREPARE BUOYANT ENERGY – INNOVATIVE CONCEPT FOR HYDRAULIC OFFSHORE ENERGY STORAGE</b> <b>Bernd Steidl<sup>1</sup>, Robert Klar<sup>1</sup>, Roman Gabi<sup>2</sup>, Klaus Käfer<sup>3</sup>, Christian Bauer<sup>3</sup>, Markus Aufleger<sup>1</sup></b> 1: University of Innsbruck, Unit of Hydraulic Engineering, Innsbruck, AUSTRIA; 2: University of Edinburgh, Institute for Energy Systems, Edinburgh, UK; 3: TU Wien, Institute for Energy Systems and Thermodynamics, Vienna, AUSTRIA</p> <p><b>POWERTOWER - SUSTAINABLE AND EFFICIENT STORAGE FOR ELECTRICITY AND HEAT</b> <b>Valerie Neisch, Markus Aufleger</b> University of Innsbruck, Unit of Hydraulic Engineering, Innsbruck, AUSTRIA</p> <p><b>COUNTER-ROTATING TYPE POWER UNITS PLAYING OUTSTANDINGLY AT ON- AND OFF-SHORE PLANTS</b> <b>Toshiaki Kanemoto<sup>1</sup>, Morihito Inagaki<sup>2</sup>, Isao Samura<sup>3</sup>, Yujii Nakanishi<sup>4</sup></b> 1: Saga University, JAPAN; 2: JSE Co., Ltd., JAPAN; 3: Kyowa Engineering Consultants Co., Ltd, JAPAN; 4: Kanagawa University, JAPAN</p> <p><b>A PROBABILISTIC APPROACH TO COST ESTIMATION OF ANCILLARY SERVICES FROM HYDROPOWER UNITS</b> <b>Henrik Lindsjö</b> N63 Degrees AB, SWEDEN</p>	<p><b>SES-2.4: Academic presentations (PhD)</b> Location: Maria Theresia Seminar Room Chair: <b>Dr.-Ing. Christof Gentner</b>, GE Renewable Energy, Switzerland</p> <p><b>FATIGUE ANALYSIS OF A PROTOTYPE FRANCIS TURBINE BASED ON STRAIN GAUGE MEASUREMENTS</b> <b>Julian Unterluggauer, Eduard Doujak, Christian Bauer</b> TU Wien, Institute for Energy Systems and Thermodynamics, Vienna, AUSTRIA</p> <p><b>FLUID-STRUCTURE INTERACTION IN A PUMP-AS-TURBINE OPERATING AT PART LOAD</b> <b>Prakash Dahal, Alan Henderson, Xiaolin Wang, Dean Giosio</b> University of Tasmania, Hobart, AUSTRALIA</p> <p><b>NUMERICAL INVESTIGATION OF ADDED MASS AND DAMPING EFFECTS ON A HYDROFOIL IN CAVITATION TUNNEL</b> <b>Pavel Čupr, Pavel Rudolf, Vladimír Habán</b> Brno University of Technology, Viktor Kaplan Department of Fluid Engineering, Brno, CZECH REPUBLIC</p>
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10:30am - 11:00am	COFFEE-2	1: Universitatea Politehnica Timisoara, Timisoara, ROMANIA; 2: Romanian-Academy – Timisoara Branch, Timisoara, ROMANIA		
11:00am - 12:30pm	<p><b>SES-3.1: Flexible Hydropower Plants</b> Location: Theatre Hall Chair: <b>Prof. Robert Schürhuber</b>, Graz University of Technology, Austria</p> <p><b>HYDROPOWER AND WIND ENERGY - TWO INSEPARABLE RENEWABLES FOR ENABLING THE ENERGY TRANSITION</b> <b>Mario Bachhiesl</b> VGB PowerTech e.V., Essen, GERMANY</p> <p><b>BEST PRACTICE GRID RESTORATION WITH HYDROPOWER PLANTS</b> <b>Stefan Polster<sup>1</sup></b>, <b>Robert Schürhuber<sup>1</sup></b>, <b>Herwig Renner<sup>1</sup></b>, <b>Leopold Ruppert<sup>4</sup></b>, <b>Robert Schmaranz<sup>2</sup></b>, <b>Christian Rupp<sup>3</sup></b>, <b>Christian Tengg<sup>3</sup></b> 1: Graz University of Technology, Institut of Electric Power Systems, Graz, AUSTRIA; 2: KNG Kärnten Netz GmbH, Klagenfurt, AUSTRIA; 3: KELAG Kärntner Elektrizitäts-Aktiengesellschaft, Klagenfurt, AUSTRIA; 4: Renewable Energy Division - AIFB, IVORY COAST</p> <p><b>AN INDUSTRIAL MICROGRID POWERED BY A PELTON UNIT</b> <b>Johann Hell</b>, <b>Wolfgang Michler</b>, <b>Wolfgang Hofbauer</b>, <b>Serdar Kadam</b> ANDRITZ HYDRO GmbH, Vienna, AUSTRIA</p> <p><b>FLEXIBILITY OF THE SLOVENIAN HYDRO SUBSYSTEM FOR SHORT TERM ADEQUACY ASSESSMENT</b> <b>Georgi Zlatarev<sup>1</sup></b>, <b>Ljiljana Perčič-Stefančič<sup>2</sup></b>, <b>Vitoslav Türk<sup>2</sup></b> 1: Electrotechnical Institute Milan Vidmar, Ljubljana, SLOVENIA; 2: Elektro-Slovenija (ELES), Slovenian TSO, Ljubljana, SLOVENIA</p>	<p><b>SES-3.2: Sound and Vibration</b> Location: Marshall Room 1 Chair: <b>Prof. Thomas Staubli</b>, etaeval GmbH, Switzerland</p> <p><b>SUCCESSFUL VIBRATION ANALYSIS AT A 200 MW PUMP-TURBINE IN LUXEMBOURG</b> <b>Patrick Tetenborg</b>, <b>Johann Lenz</b> KÖTTER Consulting Engineers GmbH &amp; Co. KG, Rheine, GERMANY</p> <p><b>INVESTIGATION OF GENERATION OF UNWANTED SOUND USING CFD SIMULATION OF HYDRO TURBINE UNITS IN (4x100 MW) KOTESHWAR HYDRO-ELECTRIC PROJECT IN INDIA</b> <b>Shri H.L. Arora<sup>1</sup></b>, <b>Shubham Mishra<sup>1</sup></b>, <b>Sanjay Rawat<sup>1</sup></b>, <b>Jyotirmay Banerjee<sup>2</sup></b>, <b>P. L. Patel<sup>2</sup></b> 1: THDC India Limited, Uttarakhand, INDIA; 2: Sardar Vallabhbhai National Institute of Technology (SVNIT), Surat, INDIA</p> <p><b>AUTO-OSCILLATION – BASIC CONSIDERATIONS AND PROTECTION SYSTEM FOR THE WALDECK HYDRO GROUP</b> <b>Pablo Lloza<sup>1</sup></b>, <b>Jörg Lingelbach<sup>2</sup></b> 1: ANDRITZ HYDRO GmbH, Ravensburg, GERMANY; 2: Uniper Kraftwerke GmbH, Edertal, GERMANY</p> <p><b>ANALYSIS ON CALCULATION METHODS IN TIME AND FREQUENCY DOMAIN FOR SHAFT VIBRATIONS IN TURBINE OFF-DESIGN CONDITIONS</b> <b>Patrick Hennes</b>, <b>Wilhelm Weber</b> Voith Hydro GmbH &amp; Co. KG, Heidenheim, GERMANY</p>	<p><b>SES-3.3: Sustainability Aspects</b> Location: Franz Josef Seminar Room Chair: <b>Dipl.-Ing.Dr. Richard Huber</b>, TÜV AUSTRIA TFVA, Austria</p> <p><b>THE INTEGRATION OF FISH-FRIENDLINESS METRICS IN INDUSTRY PRACTICES FOR TURBINE DESIGN</b> <b>Pedro Romero-Gomez</b>, <b>Josef Michelcic</b>, <b>Monika Lang</b>, <b>Simon Weissenberger</b> ANDRITZ HYDRO GmbH, Linz, AUSTRIA</p> <p><b>HOD UV PROVIDES NON-CHEMICAL BIOFOULING CONTROL IN HYDROELECTRIC FACILITIES</b> <b>Ytzhak Rozenberg<sup>1</sup></b>, <b>Jörg Engeling<sup>2</sup></b> 1: Atlantium Technologies, ISRAEL; 2: Atlantium Technologies, Bad Salzuffen, GERMANY</p> <p><b>GREENHOUSE GAS EMISSIONS FROM THE NEWLY-CREATED ROMAINE-1, ROMAINE-2 AND ROMAINE-3 RESERVOIRS IN BOREAL QUEBEC (CANADA)</b> <b>Alain Tremblay<sup>1</sup></b>, <b>Paul del Giorgio<sup>2</sup></b>, <b>Maud Demarty<sup>3</sup></b>, <b>Francois Bilodeau<sup>4</sup></b>, <b>Felipe Rust<sup>2</sup></b>, <b>Sandie Poliquin<sup>4</sup></b> 1: Hydro-Québec, Direction Environnement – Aquatic Systems, Montréal, CANADA; 2: Université du Québec à Montréal, Montréal, CANADA; 3: Englobe Corp., Montréal, CANADA; 4: Hydro-Québec, Direction Environnement, Montréal, CANADA</p>	<p><b>SES-3.4: Academic presentations (PhD)</b> Location: Maria Theresia Seminar Room Chair: <b>Dipl.-Ing.Dr. Reinhard Willinger</b>, TU Wien, Austria</p> <p><b>ANALYSIS OF A FULL LOAD OPERATING POINT OF A PROPELLER TURBINE USING SCALE-RESOLVING TURBULENCE MODELS</b> <b>Bernd Junginger</b>, <b>Stefan Riedelbauch</b> University of Stuttgart, Institute of Fluid Mechanics and Hydraulic Machinery, Stuttgart, GERMANY</p> <p><b>INVESTIGATION OF HYDRAULIC LOSSES IN A CENTRIFUGAL PUMP WITH LOW SPECIFIC SPEED</b> <b>Fabian Hankeln</b>, <b>Stefan Riedelbauch</b> University of Stuttgart, Institute of Fluid Mechanics and Hydraulic Machinery, Stuttgart, GERMANY</p> <p><b>PERFORMANCE IMPROVEMENT OF A MIXED-FLOW PUMP BY MEANS OF MULTI-OBJECTIVE OPTIMIZATION</b> <b>Franz Hahn</b>, <b>Julian Unterluggauer</b>, <b>Christian Bauer</b> TU Wien, Institute for Energy Systems and Thermodynamics, Vienna, AUSTRIA</p>
12:30pm - 1:30pm	LUNCH-2: Lunch at the buffet area			
1:30pm - 3:00pm	<p><b>SES-4.1: Pumped Storage and Variable Speed Units</b> Location: Theatre Hall Chair: <b>Prof. Wolfgang Gawlik</b>, TU Wien ESEA, Austria</p> <p><b>BASIC LAYOUT OF A PUMPED-STORAGE UNIT WITH FULL SIZE CONVERTER FOR A VERY LARGE HEAD SPAN</b> <b>Andreas Hammer</b>, <b>Hugo Götsch</b>, <b>Wolfgang Kofler</b>, <b>Andreas Egger</b> TIWAG – Tiroler Wasserkraft AG, Innsbruck, AUSTRIA</p> <p><b>SECOND GENERATION OF LARGE DOUBLE FED INDUCTION MOTOR GENERATORS</b> <b>Werner Ladstätter</b>, <b>Alexander John</b>, <b>Manfred Kohlhofer</b>, <b>Philipp Leopold</b> ANDRITZ HYDRO GmbH, Weiz, AUSTRIA</p> <p><b>CONTROLLER CONSIDERATIONS FOR VARIABLE SPEED PSPP FENGNING II</b> <b>Alois Lechner</b> ANDRITZ HYDRO GmbH, Vienna, AUSTRIA</p> <p><b>CONVERTING CONVENTIONAL PUMPED STORAGE PLANTS TO VARIABLE SPEED</b> <b>Christof Gantner</b>, <b>Georg Holzmann</b>, <b>Fredric Maurer</b> GE Renewable Energy, Birr, SWITZERLAND</p>	<p><b>SES-4.2: Operation, Monitoring and Risk Assessment</b> Location: Marshall Room 1 Chair: <b>Dipl.-Ing. Oliver Haupt</b>, KfW Development Bank, Germany</p> <p><b>ON-BOARD MEASUREMENTS AT A 100MW HIGH-HEAD FRANCIS TURBINE</b> <b>Maximilian Titzschkau<sup>1</sup></b>, <b>Vlad Hasmatuch<sup>2</sup></b>, <b>Jean Decaix<sup>2</sup></b>, <b>Cécile Münch-Alligne<sup>2</sup></b> 1: Kraftwerke Oberhasli AG - Grimsel Hydro, Inerikirchen, SWITZERLAND; 2: University of Applied Sciences Western Switzerland, School of Engineering, Sion, SWITZERLAND</p> <p><b>DISCHARGING WATER THROUGH KAPLAN TURBINES BY MEANS OF SPEED NO LOAD OPERATION MODE - IMPACT ON TURBINE DESIGN</b> <b>Christian Weichselbraun</b>, <b>Thomas Klingbacher</b>, <b>Gerhart Penninger</b> VERBUND Hydro Power GmbH, Vienna, AUSTRIA</p> <p><b>CONDITION MONITORING AND ASSESSMENT OF MACHINE PARTS IN THE PUMPED-STORAGE POWER PLANT VIANDEN</b> <b>Fernand Zanter<sup>1</sup></b>, <b>Fabian Eberhard Silber<sup>2</sup></b>, <b>Georg Wackenhut<sup>2</sup></b> 1: Société Electrique de l'Our (SEO), LUXEMBOURG; 2: Materials Testing Institute University of Stuttgart (MPA), GERMANY</p> <p><b>RELIABILITY INDEXING OF INTRA-FACILITY DISPATCH DECISIONS</b> <b>Stephen Signore</b>, <b>Brennan Smith</b> Oak Ridge National Laboratory, Oak Ridge, USA</p>	<p><b>SES-4.3: Standardization and Legal aspects</b> Location: Franz Josef Seminar Room Chair: <b>Dr.-Ing. Klaus Schneider</b>, Beratung Wasserkraft, Germany</p> <p><b>PRESENTATION OF THE REVISED STANDARD "RICHTLINIEN FÜR WERKSTOFFE IN HYDRAULISCHEN MASCHINEN – RWHM" / PART 1: GENERAL PRESENTATION</b> <b>Stefan Leitner<sup>1</sup></b>, <b>Christian Schenk<sup>2</sup></b> 1: KELAG Kärntner Elektrizitäts-Aktiengesellschaft, Klagenfurt, AUSTRIA; 2: TIWAG – Tiroler Wasserkraft AG, Innsbruck, AUSTRIA</p> <p><b>PRESENTATION OF THE REVISED STANDARD "RICHTLINIEN FÜR WERKSTOFFE IN HYDRAULISCHEN MASCHINEN – RWHM" / PART 2: COMPONENT DESIGN USING K-FACTORS</b> <b>Christian Schenk<sup>1</sup></b>, <b>Stefan Leitner<sup>2</sup></b> 1: TIWAG – Tiroler Wasserkraft AG, Innsbruck, AUSTRIA; 2: KELAG Kärntner Elektrizitäts-Aktiengesellschaft, Klagenfurt, AUSTRIA</p> <p><b>SUSTAINABLE PRODUCTION AND OPERATION OF HYDROPOWER PLANTS - NON-DESTRUCTIVE TESTING AND INSPECTION AS A DECISIVE FACTOR</b> <b>Wolfgang Michael Auer</b> TFVA Hydro TPA KKS, Vienna, AUSTRIA</p> <p><b>THE KEY PROVISIONS IN HPP REHABILITATION / MODERNISATION CONTRACTS</b> <b>Bettina Geisseler</b> Geisseler Law, Freiburg, GERMANY</p>	<p><b>SES-4.4: Academic presentations (PhD)</b> Location: Maria Theresia Seminar Room Chair: <b>Dr.-Ing. Sebastian Muntean</b>, Romanian Academy - Timisoara Branch, Romania</p> <p><b>THE GROWTH OF A ROTARY GRAVITY WAVE IN A CYLINDRICAL CONTAINER</b> <b>Herbert Steinrück<sup>1</sup></b>, <b>Anton Maly<sup>2</sup></b> 1: TU Wien, Institute for Fluid Mechanics and Heat Transfer, Vienna, AUSTRIA; 2: TU Wien, Institute for Energy Systems and Thermodynamics, Vienna, AUSTRIA</p> <p><b>FLOW PHENOMENA IN A MODEL PUMP-TURBINE AT SYNCHRONOUS CONDENSER MODE - DESCRIPTION OF TEST RIG</b> <b>Anton Maly</b>, <b>Klaus Käfer</b>, <b>Christian Bauer</b> TU Wien, Institute for Energy Systems and Thermodynamics, Vienna, AUSTRIA</p> <p><b>VIBRATIONS OF FLEXIBLE BODIES SUBMERGED IN FLUID</b> <b>Michal Havlíšek</b>, <b>Tomáš Machů</b>, <b>František Pochylý</b> Brno University of Technology, Viktor Kaplan Department of Fluid Engineering, Brno, CZECH REPUBLIC</p>
3:00pm	COFFEE-3			
3:30pm				
5:00pm	<p><b>SES-5.1: Project Development and Optimization</b> Location: Theatre Hall Chair: <b>Dipl.-Ing.Dr. Josef Prost</b>, HTL Eisenstadt, Austria</p> <p><b>LARGE STORAGE PUMPS FOR HYDROPOWER APPLICATIONS</b> <b>Bernhard List</b>, <b>Thomas Drabek</b>, <b>Martin Nussmüller</b> Voith Hydro GmbH &amp; Co. KG, St. Pölten, AUSTRIA</p> <p><b>RELLS POWER STATION FRACTURE ON PENSTOCK</b> <b>Lucas Werle<sup>1</sup></b>, <b>Horst Corjak<sup>2</sup></b>, <b>Norbert Enzinger<sup>2</sup></b>, <b>Andreas Hütter<sup>2</sup></b>, <b>Milan Pudar<sup>3</sup></b> 1: Vorarlberger Illwerke AG, Vandans, AUSTRIA; 2: Graz University of Technology, Institute of Materials Science, Joining and Forming, Graz, AUSTRIA; 3: Magna Styer Fahrzeugtechnik GmbH, Graz, AUSTRIA</p> <p><b>MONITORING SALT WATER INTRUSION IN RUPERT BAY, QUÉBEC, CANADA, AFTER THE PARTIAL DIVERSION OF RUPERT RIVER TO EASTMAIN-1 RESERVOIR</b> <b>Alain Tremblay<sup>1</sup></b>, <b>Carine Durocher<sup>2</sup></b> 1: Hydro-Québec, Direction Environnement – Aquatic Systems, Montréal, CANADA; 2: Hydro-Québec, Direction Environnement – Social Aspects, Montréal, CANADA</p> <p><b>HYDROPOWER OPTIMIZATION WITH RENRISK</b> <b>Florian-Patrica Nagel</b>, <b>Manuel Fuentes Sifuentes</b>, <b>Kai Knoppa</b> ILF Consulting Engineers Austria GmbH, AUSTRIA</p>	<p><b>SES-5.2: Numerical Simulation and Optimization</b> Location: Marshall Room 1 Chair: <b>Dr. Jiri Koutnik</b>, Voith Hydro Holding GmbH &amp; Co. KG, Germany</p> <p><b>DEVELOPMENT OF A HIGH SPECIFIC SPEED KAPLAN PIT-TYPE TURBINE – NUMERICAL AND EXPERIMENTAL VERIFICATION</b> <b>Helmut Benjani<sup>1</sup></b>, <b>Jürgen Schiffer<sup>1</sup></b>, <b>Christian Bodner<sup>1</sup></b>, <b>Stefan Leitner<sup>1</sup></b>, <b>Helmut Jaberg<sup>1</sup></b>, <b>Stefan Troyer<sup>2</sup></b> 1: Graz University of Technology, Institute of Hydraulic Fluidmachinery, Graz, AUSTRIA; 2: Troyer AG, ITALY</p> <p><b>DEVELOPMENT OF A TAILOR-MADE KAPLAN RUNNER FOR HPP KRIPPALU (ENNS) BY THE USE OF VARIOUS NUMERICAL APPROACHES AND COMPARISON WITH TEST RIG RESULTS</b> <b>Timo Krappel<sup>1</sup></b>, <b>Martin Becker<sup>1</sup></b>, <b>Lutz Jührig<sup>1</sup></b>, <b>Michael Artmann<sup>2</sup></b>, <b>Christian Weichselbraun<sup>2</sup></b> 1: Stelbla Hydro GmbH &amp; Co KG, Herbrechtingen, GERMANY; 2: VERBUND Hydro Power GmbH, Vienna, AUSTRIA</p> <p><b>3D NUMERICAL FLOW ANALYSIS OF THE NON-UNIFORMITY INDUCED BY A RESHAPED GEOMETRY OF THE SYMMETRICAL SUCTION ELBOW</b> <b>Daniel Calin Mos<sup>1</sup></b>, <b>Sebastian Muntean<sup>2</sup></b>, <b>Liviu Eugen Anton<sup>1</sup></b> 1: Universitatea Politehnica Timisoara, Timisoara, ROMANIA; 2: Romanian-Academy – Timisoara Branch, Timisoara, ROMANIA</p> <p><b>FSI SIMULATION OF TILTING-PAD THRUST BEARINGS: TAPER VARIATIONS</b> <b>Daniel Langmayr</b>, <b>Walter Pscheidt</b>, <b>Mario Himmelreich</b> ANDRITZ HYDRO GmbH, Linz, AUSTRIA</p>	<p><b>SES-5.3: Small Hydro</b> Location: Franz Josef Seminar Room Chair: <b>Prof. Devadutta Das</b>, Independent, India</p> <p><b>OPTIMIZATION OF TURBINE CASCADES IN TIDAL FLOWS</b> <b>Christian Schmitz<sup>1,2</sup></b>, <b>Marcel Studenroth<sup>1</sup></b>, <b>Peter F. Pels<sup>2</sup></b> 1: Industrial Science GmbH, Darmstadt, GERMANY; 2: Technische Universität Darmstadt, Chair of Fluid Systems, Darmstadt, GERMANY</p> <p><b>DESIGN AND PERFORMANCE ANALYSIS OF WATER VORTEX POWERPLANT IN CONTEXT OF NEPAL</b> <b>Tri Ratna Bajracharya</b>, <b>Rudra Mani Ghimire</b>, <b>Ashesh Babu Timilsina</b> Department of mechanical Engineering, Institute of Engineering, Kathmandu, NEPAL</p> <p><b>COMPUTATIONAL FLUID SIMULATIONS OF HYDROKINETIC ARCHIMEDEAN TURBINES HARNESSING THE CURRENT POTENTIAL OF THE MYSTERIOUS RIVER OF CEPHALONIA AND THE EURIPUS STRAIT</b> <b>Vassilios Stergiopoulos<sup>1</sup></b>, <b>Alkisti Stergiopoulou<sup>2</sup></b> 1: School of Pedagogical and Technological Education, ASPETE, Athens, GREECE; 2: National Technical University of Athens, GREECE</p>	<p><b>SES-5.4: Academic presentations (PhD)</b> Location: Maria Theresia Seminar Room Chair: <b>Dipl.-Ing.Dr. Peter Angerer</b>, ANDRITZ HYDRO GmbH, Austria</p> <p><b>INVESTIGATION OF THE CONTROL BEHAVIOUR OF HYDROPOWER PLANTS IN ISLAND MODE DURING GRID RESTORATION</b> <b>Volker Bros<sup>1</sup></b>, <b>Stefan Riedelbauch<sup>2</sup></b> 1: Fichtner GmbH &amp; Co. KG, Stuttgart, GERMANY; 2: University of Stuttgart, Institute of Fluid Mechanics and Hydraulic Machinery, Stuttgart, GERMANY</p> <p><b>VIBRATION ANALYSIS OF A CONTINUOUSLY OVERLOADED LARGE HYDROGENERATOR AT LOAD REJECTION</b> <b>Carunaiselvano Caroungarane<sup>1</sup></b>, <b>ThangaRaj Chelliah<sup>1</sup></b>, <b>S V Appa Sarma<sup>2</sup></b> 1: Indian Institute of Technology Roorkee, Department of Water Resources Development and Management, Roorkee, INDIA; 2: Tehri Hydropower Corporation India Limited, Rishikesh, INDIA</p> <p><b>HYDRAULICS OF THE TAIL RACE SURGE TANK OF GOUVÈS PUMPED-STORAGE HYDROPOWER</b> <b>Wolfgang Richter<sup>1</sup></b>, <b>Gerald Zenz<sup>1</sup></b>, <b>Christophe Nicolet<sup>2</sup></b>, <b>Christian Landry<sup>3</sup></b>, <b>Juan Carlos Vera Rodriguez<sup>3</sup></b>, <b>Luis De La Torre Abieta<sup>3</sup></b> 1: Graz University of Technology, Institute of Hydraulic Engineering, Graz, AUSTRIA; 2: Power Vision Engineering, Ecublens, SWITZERLAND; 3: Iberdrola Generación Hidráulica, Bilbao, SPAIN</p>

7:00pm	EVENING-2
<b>Date: Friday, 16/Nov/2018</b>	
9:00am - 10:30am	<p><b>SES-6.1: Dynamics and Transients</b> Location: <b>Theatre Hall</b> Chair: <b>Dr. Bernhard List</b>, Voith Hydro GmbH &amp; Co. KG, Austria</p> <p><b>THE EXTENSION OF A HYDROPOWER TO PUMPED-STORAGE PLANT IS OFTEN RESTRICTED BY THE MAXIMUM PENSTOCK PRESSURE</b> <b>Klaus Hirtenlehner<sup>1</sup>, Markus Matsch<sup>2</sup>, Georg Lang<sup>3</sup></b> 1: ZT Hirtenlehner e.U., Steyr, AUSTRIA; 2: Salzburg AG, Salzburg, AUSTRIA; 3: Pöyry Austria GmbH, Salzburg, AUSTRIA</p> <p><b>INCREASING POWER OUTPUT AND FLEXIBILITY OF KOPS I HIGH HEAD POWER PLANT WITH THE HELP OF WATERHAMMER SIMULATIONS</b> <b>Stefan Höller<sup>1</sup>, Helmut Jaberg<sup>1</sup>, Bernhard Wittwer<sup>2</sup></b> 1: Graz University of Technology, Institute of Hydraulic Fluidmachinery, Graz, AUSTRIA; 2: Vorarlberger Illwerke AG, Vandans, AUSTRIA</p> <p><b>EXPERIMENTAL INVESTIGATION OF TRANSIENT BEHAVIOR IN THE SURGE TANK PHYSICAL MODEL OF A PUMPED-STORAGE POWER PLANT (PSPP)</b> <b>Jorge Arpe<sup>1</sup>, Christophe Nicolet<sup>2</sup>, Primoz Rodic<sup>3</sup>, Alida Rejec<sup>4</sup></b> 1: AF-Consult Switzerland, Baden, SWITZERLAND; 2: Power Vision Engineering, Ecublens, SWITZERLAND; 3: University of Ljubljana, Institute for Hydraulic Research, Ljubljana, SLOVENIA; 4: Soske Elektrarne Nova Gorica (SENG), Nova Gorica, SLOVENIA</p> <p><b>NUMERICAL ANALYSIS OF A HYDRAULIC SHORT CIRCUIT IN THE PUMPED-STORAGE POWER PLANTS KÜHTAI 1 AND 2</b> <b>Gregor Höfer</b> TIWAG - Tiroler Wasserkraft AG, Innsbruck, AUSTRIA</p>
10:30am - 11:00am	COFFEE-4
11:00am - 12:30pm	<p><b>SES-7.1: Big Data and Digitalization</b> Location: <b>Theatre Hall</b> Chair: <b>Prof. Christian Bauer</b>, TU Wien, Austria</p> <p><b>CLOUD BASED ACOUSTIC ASSET MONITORING</b> <b>Jörg Lochschmidt</b> Voith Hydro Holding GmbH &amp; Co. KG, Heidenheim, GERMANY</p> <p><b>USEFUL CYBER SECURITY MEASURES FOR POWER GENERATION AND WATER PLANTS IN TIMES OF CHANGE</b> <b>Richard Biala, Eduard Bebernick</b> ABB AG, Mannheim, GERMANY</p> <p><b>TREND INTELLIGENCE FOR PREDICTIVE MAINTENANCE AND OPERATION OPTIMIZATION IN HYDROPOWER PLANTS</b> <b>Martin Rentschler<sup>1</sup>, Jean-Christophe Marongiu<sup>2</sup>, Magdalena Neuhauser<sup>1</sup>, Nicolas Ruchonnet<sup>1</sup>, Etienne Parkinson<sup>1</sup>, Mirjam Sick<sup>3</sup></b> 1: ANDRITZ Hydro AG, Vevey, SWITZERLAND; 2: ANDRITZ Hydro, Villeurbanne, FRANCE; 3: ANDRITZ Hydro AG, Kriens, SWITZERLAND</p> <p><b>ONCARE AUGMENTED REALITY FOR ASSET LIFECYCLE INFORMATION MANAGEMENT</b> <b>Christian Steinmaßl</b> Voith Hydro Holding GmbH &amp; Co. KG, Heidenheim, GERMANY</p>
12:30pm - 1:30pm	<p><b>CLOSE</b> Location: <b>Theatre Hall</b></p>
	<p><b>SES-6.2: Intelligent Control and Monitoring Systems</b> Location: <b>Marshall Room 1</b> Chair: <b>Prof. Giorgio Pavesi</b>, University of Padova, Italy</p> <p><b>EFFICIENCY MONITORING IN THE HYDROPOWER PLANT OF FILISUR</b> <b>Thomas Staubli, André Abgottspon</b> etaeval GmbH, Horw, SWITZERLAND</p> <p><b>CONTROL-ORIENTED MODELLING AND STATE ESTIMATION OF TIDAL TURBINES WITH PITCH CONTROL</b> <b>Bastian Ritter<sup>1</sup>, Christian Schmitz<sup>1</sup>, Peter Franz Pelz<sup>2</sup></b> 1: Industrial Science GmbH, Darmstadt, GERMANY; 2: Technische Universität Darmstadt, Chair of Fluid Systems, Darmstadt, GERMANY</p> <p><b>FLOW CONTROL IN HYDRAULIC MACHINERY</b> <b>Pavel Rudolf, Ondřej Urban, David Štefan, František Pochytil</b> Brno University of Technology, Viktor Kaplan Department of Fluid Engineering, Brno, CZECH REPUBLIC</p> <p><b>FLOW RATE MEASUREMENT USING PRESSURE-TIME METHOD</b> <b>Matthias Saurwein</b> Geppert Hydropower, Hall, AUSTRIA</p>

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