

# Program for 15th Scandinavian International Conference on Fluid Power

WEDNESDAY - June 7			
8:15	Bus from City Centre		
8:30	Registration		
9:30	Session 1a Chairman: Petter Krus		C1
	<p style="text-align: center;"><i>"Welcome and Opening Address"</i>            Prof. <b>Petter Krus</b>, Linköping University            Prof. <b>Elin Wihlborg</b>, Vice Head of Department, Linköping University, Sweden</p> <p style="text-align: center;"><i>"Fluid Power in Industry 4.0"</i>  <b>Janette Kothe</b>, Bosch Rexroth, Germany</p>		
10:40	COFFEE BREAK		
11:10	Session 1b		C1
	<p style="text-align: center;"><i>"Challenges and Opportunities in Pump Design"</i>            Prof. <b>Monika Ivantysynova</b>, Purdue University, USA</p>		
12:00	LUNCH		
13:30	Session 2 - Industrial Applications Chairman: Jan-Ove Palmberg	C1	Session 3 - Pumps Chairman: Monika Ivantysynova
	<p><i>"Analysis of an Unusual Contaminant in a Press Hydraulic System"</i>  <b>John.K. Duchowski</b>, HYDAC FluidCareCenter® GmbH, Germany</p> <p><i>"Energy Efficiency Comparison of Electric-Hydraulic Hybrid Work Implements Systems"</i>  <b>Björn Eriksson</b>, Parker Hannifin Corporation, Sweden</p> <p><i>"Methods for System Safety Assessment of the Hydraulic System in JAS 39 Gripen"</i>, <b>Henning Carlsson</b>, SAAB AB, Sweden</p> <p><i>"Towards Finding the Optimal Bucket Filling Strategy through Simulation"</i>, <b>Reno Filla</b>, Volvo Construction Equipment, Sweden</p>		<p><i>"Experimental Investigation of a Displacement Controlled Hydrostatic Pump/Motor by Means of Rotating Valve Plate"</i>  <b>Liselott Ericson</b>, Linköping University, Sweden</p> <p><i>"Barrel Tipping in Axial Piston Pumps and Motors"</i>  <b>Peter Achten</b>, INNAS BV, Holland</p> <p><i>"Modeling and Parametric Identification of a Variable-Displacement Pressure Compensated Pump"</i>  <b>Filipe Spuri</b>, Instituto Tecnológico de Aeronáutica, Brazil</p> <p><i>"Displacement Control Strategies of an In-Line Axial-Piston Unit"</i>  <b>Viktor Larsson</b>, Linköping University, Sweden</p>
15:00	COFFEE BREAK		
15:30	Session 4 - Innovation Management Chairman: Petter Krus	C1	Session 5 - Mobile Systems Chairman: Björn Eriksson
	<p><i>"The Impact of Innovation Ecosystem on Firm Innovation"</i>, <b>Solmaz Filiz Karabag</b>, Linköping University, Sweden</p>		<p><i>"Enhancing safety of Independent Metering Systems for Mobile Machinery by Means of Fault Detection"</i>  <b>Benjamin Beck</b>, Technische Universität Dresden, Germany</p>

	<p>" <i>Innovation Management for the Transition to Digital Fluid Power</i>", <b>Luciana Pereira</b>, Federal University of Santa Catarina, Brazil</p> <p>" <i>Managing the Knowledge Supply Chain of Innovation – Consequences for Firms in the Fluid Power Industry</i>", <b>Nicolette Lakemond</b>, Linköping University, Sweden</p> <p>"<i>Reclaiming Hydraulics - The Brand</i>", <b>Paul Bogatir</b>, Hudiksvalls Hydraulikkcluster, Sweden</p>		<p>"<i>Predictive Dynamic Engine Speed Reduction in Mobile Hydraulic Equipment</i>" <b>Travis Kent Wiens</b>, University of Saskatchewan, Canada</p> <p>"<i>A Study on Thermal Behavior of Pump-controlled Actuator</i>" <b>Tatiana Minav</b>, Aalto University, Finland</p> <p>"<i>Emission Reduction of Mobile Machines by Hydraulic Hybrid</i>" <b>Seppo Tikkanen</b>, Tampere University of Technology, Finland</p>	
<b>17:15</b>	<b>Reception at Faculty club close to University</b>			
<b>19:15</b>	<b>Bus to City Centre</b>			
<b>Thursday - June 8</b>				
<b>8:00</b>	<b>Bus from City Centre</b>			
<b>8:30</b>	<b>Session 6</b> Chairman: Jan-Ove Palmberg		<b>C1</b>	
	<p>"<i>Future Trends for Heavy Vehicles</i>" Dr. <b>Reno Filla</b>, Volvo Construction Equipment, Sweden</p> <p>"<i>Artemis Digital Displacement Series-Hybrid Transmissions for Rail Applications</i>" Prof. <b>Win Rampen</b>, Artemis Intelligent Power Limited, UK</p>			
<b>10:00</b>	<b>COFFEE BREAK</b>			
<b>10:30</b>	<b>Session 7 - Industry applications</b> Chairman: Liselott Ericson	<b>C1</b>	<b>Session 8 - Digital Hydraulics</b> Chairman: Bernhard Manhartgruber	<b>C2</b>
	<p>"<i>IoT for Productivity Improvement in Manufacturing/Grinding</i>" <b>Jan Nilsson</b>, Wipro Infrastructure Engineering AB, Sweden</p> <p>"<i>A Hydraulic Hybrid Excavator based on Multi-Chamber Cylinders and Secondary Control</i>" <b>Kim Heybroek</b>, Volvo Construction Equipment, Sweden</p> <p>"<i>Real-Time Parameter Setpoint Optimization for Electro-Hydraulic Traction Control Systems</i>" <b>Addison Alexander</b>, Purdue University, USA</p> <p>"<i>Water Hammer Induced Cavitation – an Experimental and Numerical Study</i>" <b>Marcus Jansson</b>, Atlas Copco Rock Drills, Sweden</p>		<p>"<i>Hydraulic Infinite Linear Actuator - The Ballistic Gait - Digital Hydro-Mechanical Motion</i>" <b>Martin Hochwallner</b>, Linköping University, Sweden</p> <p>"<i>An Zero-Flowrate-Switching (ZFS) Control Method Applied in a Digital Hydraulic System</i>" <b>Shuang Peng</b>, Wuhan University of Technology, China</p> <p>"<i>Study of Energy Losses in Digital Hydraulic Multi-Pressure Actuator</i>" <b>Mikko Huova</b>, Tampere University of Technology, Finland</p> <p>"<i>Design and Optimization of a Fast Switching Hydraulic Step-Down Converter for Position and Speed Control</i>" <b>Victor Juliano De Negri</b>, Federal University of Santa Catarina, Brazil</p>	
<b>12:00</b>	<b>LUNCH</b>			

13:30	<b>Panel discussion</b> Chairman: Petter Krus		C1
	<p>Prof. <b>Hubertus Murrenhof</b>, RWTH Aachen, Germany</p> <p><b>Janette Kothe</b>, Bosch Rexroth, Germany</p> <p>Dr. <b>Peter Achten</b>, Innas BV, Holland</p> <p>Prof. <b>Victor Juliano De Negri</b>, Federal University of Santa Catarina, Brazil</p>		
14:30	<b>COFFEE BREAK</b>		
15:00	<b>Session 9 - Systems</b> Chairman: Luiz Góes	C1	<b>Session 10 - Components</b> Chairman: Peter Achten
	<p><i>"Sensorless Position Control of Direct Driven Hydraulic Actuators"</i> <b>Tatiana Minav</b>, Aalto University, Finland</p> <p><i>"Decentralized Hydraulics for Micro Excavator"</i> <b>Shuzhong Zhang</b>, Aalto University, Finland</p> <p><i>"Model-based Analysis of Decentralized Fluidic Systems in Machine Tools"</i> <b>Linart Shabi</b>, Technische Universität Dresden, Germany</p> <p><i>"A Global Optimisation of a Switched Inertance Hydraulic System based on Genetic Algorithm"</i> <b>Min Pan</b>, University of Bath, UK</p> <p><i>"Use of LMS Amesim® Model to Predict Behavior Impacts of Typical Failures in an Aircraft Hydraulic Brake System"</i> <b>Mario Maia Neto</b>, Instituto Tecnológico de Aeronáutica, Brazil</p>		<p><i>"The Lattice Boltzmann Method Used for Fluid Flow Modeling in Hydraulic Components"</i> <b>Bernhard Manhartgruber</b>, Johannes Kepler University, Austria</p> <p><i>"Modeling and Verification of Accumulators using CFD"</i> <b>Victor Irizar</b>, Fritz Schur Energy A/S, Denmark</p> <p><i>"Analysis of Flow Angles and Flow Velocities in Spool Valves for the Calculation of Steady-State Flow Forces"</i> <b>Patrik Bordovsky</b>, RWTH Aachen University, Germany</p> <p><i>"Non-linear Control of a Piezoelectric Two Stage Servo Valve"</i> <b>Johan Persson</b>, University of Bath, Bath, United Kingdom</p> <p><i>"The Hydraulic Infinite Linear Actuator with Multiple Rods"</i> <b>Magnus Landberg</b>, SAAB AB, Sweden</p>
17:15	<b>Bus to City Centre</b>		
19:00	<b>CONFERENCE DINNER, Linköpings Konsert och Kongress, in City Center</b>		
<b>FRIDAY - June 9</b>			
8:00	<b>Bus from City Centre</b>		
8:30	<b>Session 11 - Independent metering</b> Chairman: Hubertus Murrenhof	C1	<b>Session 12 - Simulation</b> Chairman: Magnus Sethson
	<p><i>"Cloud-Based System Architecture for Driver Assistance in Mobile Machinery"</i> <b>Benjamin Beck</b>, Technische Universität Dresden, Germany</p>		<p><i>"A Hardware-In-The-Loop (HIL) Testbed for Hydraulic Transformers Research"</i> <b>Sangyoon Lee</b>, University of Minnesota, USA</p>

	<p><i>"Optimal Control for Hydraulic System with Separate Meter-in and Separate Meter-out"</i>  <b>Gerhard Rath</b>, University of Leoben, Austria</p> <p><i>"Simulation Study on a Digital Hydraulic Independent Metering Valve System on an Excavator"</i>  <b>Miikka Ketonen</b>, Tampere University of Technology, Finland</p> <p><i>"An Approach to combine an Independent-Metering System with an electro-hydraulic Flow-on-Demand Hybrid-System"</i>  <b>Marco Wydra</b>, Karlsruhe Institute of Technology, Germany</p>	<p><i>"An Open-Source Framework for Efficient Co-simulation of Fluid Power Systems"</i>  <b>Robert Braun</b>, Linköping University, Sweden</p> <p><i>"Modelling Dynamic Response of Hydraulic Fluid Within Tapered Transmission Lines"</i>  <b>Jeremy William ven der Buhs</b>, University of Saskatchewan, Canada</p> <p><i>"System Level Co-simulation of a Control Valve and Hydraulic Cylinder Circuit in a Hydraulic Percussion Unit"</i>  <b>Håkan Andersson</b>, Atlas Copco Construction Tools AB, Sweden</p>	Master Thesis Presentations see separate schedule		
<b>10:00</b>	<b>COFFEE BREAK</b>				
<b>10:30</b>	<b>Session 13 - System and Control</b> Chairman: Kim Heybroek	<b>C1</b>		<b>Session 14 - Systems and Components</b> Chairman: Victor Juliano de Negri	<b>C2</b>
	<p><i>"Torque Control of a Hydrostatic Transmission Using Extended Linearisation Techniques"</i>  <b>Robert Prabel</b>, University of Rostock, Germany</p> <p><i>"Development of an Innovative Variable Flow-Rate Gerotor Pump for Lubrication Circuit of I.C.E: Designing, Modelling and Testing"</i>  <b>Emma Frosina</b>, University of Naples, Italy</p> <p><i>"A Study on a Mathematical Model of Gas in Accumulator using van der Waals Equation"</i>  <b>Kazushi Sanada</b>, Yokohama National University, Japan</p> <p><i>"Proportional Solenoid Actuator for Independent Metering Valve of the Next Generation Construction Vehicles"</i>  <b>So-Nam Yun</b>, Korea Institute of Machinery and Materials, Republic of Korea</p>			<p><i>"Assessment of Electric Drive for Fuel Pump using Hardware in the Loop Simulation"</i>  <b>Batoul Attar</b>, Institut Clément Ader, INSA, France</p> <p><i>"Modeling and Simulation of a Single Engine Aircraft Fuel System"</i>  <b>Nathan Raphael do Nascimento Pinheiro</b>, Instituto Tecnológico de Aeronáutica, Brazil</p> <p><i>"Early Insights on FMI based Co-Simulation of Aircraft Vehicles Systems"</i>  <b>Robert Hällquist</b>, SAAB AB, Sweden</p>	
<b>11:40</b>	<b>CONCLUSION</b>			<b>C1</b>	
<b>12:00</b>	<b>LUNCH</b>				
<b>13:30</b>	<b>Company visits - buses leaves</b>	<b>HOPSAN tutorial</b>			
	<b>Toyota Material Handling - forklift manufacturer in Mjölby</b>  <b>SAAB AB - aircraft manufacturer in Linköping</b>				
<b>17:00</b>	<b>Buses back at University and City Centre</b>			<b>Bus to City Centre</b>	
<b>17:15</b>	<b>GET-TOGETHER IN FLUMES LAB, light meal and beverages</b>				