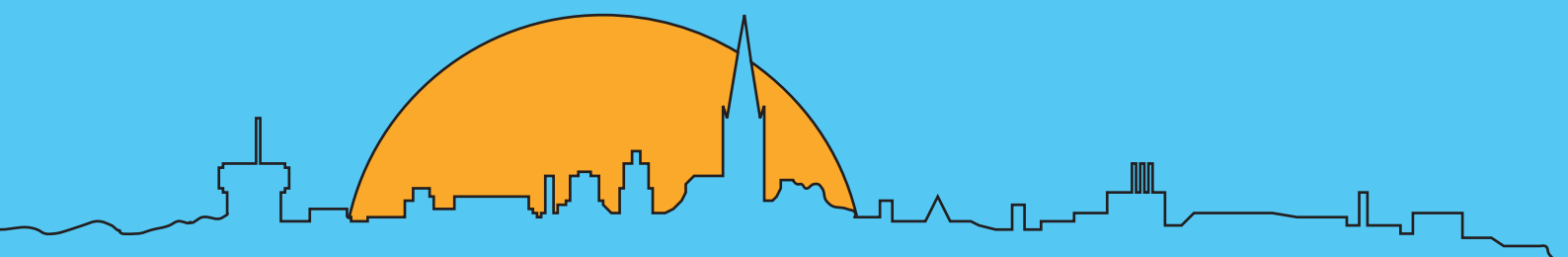


SICFP'21

The 17th Scandinavian International Conference on Fluid Power

Online, hosted from Linköping, Sweden
1 - 2 juni, 2021

Programme



All times are in Central European Summer Time (CEST)

Tuesday June 1, 2021

Conference Starts in Zoom

PLENARY SESSION 1

Chair: Petter Krus

Welcome and opening address

Prof. Petter Krus, Linköping university

General Information about the Conference

Assoc. Prof. Liselott Ericson, Linköping university

Solving Today's Most Challenging Power Management Issues

Astrid Mozes, VP – Power & Motion Controls Hydraulics Group, Eaton Corporation, USA

Main
Hall

Break - Gathertown

SESSION 2a - Efficient Systems

Chair: Kim Stelson

Hall
A

Improving the Energy Efficiency of Single Actuators with High Energy Consumption: An Electro-Hydraulic Extension of Conventional Multi-Actuator Load-Sensing Systems,
David Fassbender, Tampere University, Finland

Experimental Investigation of the Influence of Fluid Viscosity on the Efficiency of a Crawler Excavator,
Sebastian Deuster, RWTH Aachen University, Germany

Loss Analysis and Concept Comparison for Electrically Driven Hydraulic Loader Crane,
Amy Rankka, Linköping University, Sweden

Pump-Controlled Actuators with Dump Valves,
Samuel Kärnell, Linköping University, Sweden

SESSION 2b - Control

Chair: Andrew Plummer

Hall
B

Load Weight Estimation on an Excavator in Static and Dynamic Motions,
Mehmet Ferlibas, Tampere University, Finland

Multidimensional Trajectory Tracking for Numerically Stiff Independent Metering System,
Goran Stojanoski, University of Leoben, Austria

Design of Pressure Control for Optimal Damping in Individual Metering Systems,
Gerhard Rath, Montanuniversität Leoben, Austria

Comparison of Sliding Mode Controller for Classical and Direct Driven Electrohydraulic System,
Juraj BeniĆ, University of Zagreb, Croatia

Break - Gathertown

SESSION 3a - Pumps 1

Chair: Katharina Schmitz

Hall
A

Benchmarking the Performance of Hydrostatic Pumps,
Robin Mommers, INNAS BV, The Netherlands

Experimental Investigation of New Design Concepts for the Tribological Contact between the Valve Plate and the Cylinder Block in Axial Piston Machines,
Stefan Andre Geffroy, RWTH-Aachen University, Germany

The Determination of Hydraulic Motor Displacement,
Paul John Michael,
Milwaukee School of Engineering, USA

SESSION 3b - Valves

Chair: Rudolf Scheidl

Hall
B

Adaptive Identification and Application of Flow Mapping for Electrohydraulic Valves,
Jianbin Liu, Technische Universität Dresden, Germany

Simulating a high frequency piezo pump with disc reed valves,
Nathan P Sell, University of Bath, United Kingdom

Novel Hydraulically Relieved Electromechanical Direct Actuation System for Large Scale Switching Valves,
Tobias Vonderbank, RWTH Aachen University, Germany

End of day one

Wednesday June 2, 2021

9:15-11:30

Tutorial in Hopsan

Lecture and hands-on tutorials in Hopsan.

Please download the program before the session here <https://github.com/Hopsan/hopsan/releases>

Tutorial
Room

13:00

PLENARY SESSION 4

Chair: Victor De Negri

Sustainable Fluid Power Systems – An overview of current approaches

Prof. Katharina Schmitz, RWTH Aachen University, Germany

Can Hydraulics Support the Green Transformation?

Dr. Marcus Rösth, Senior Manager Control Systems, Loader Crane, HIAB, Sweden

Main
Hall

14:00

Break - Gathertown

14:30

SESSION 5a - Pump Controlled Systems

Chair: Kalevi Huhtala

Hall
A

Control Optimisation of a Pump-Controlled Hydraulic System,

L. Viktor Larsson, Linköping University, Sweden

Control Strategies for a Dual AC Motor Pump System in Aircraft Hydraulic Power Packages,

Nils Trochelmann,

Hamburg University of Technology, Germany

Improving the Performance of Self-contained Cylinder Drives with Load-holding Capabilities,

Torben Ole Andersen, Aalborg University, Denmark

Extremal Optimisation Approach to Component Placement in Blood Analysis Equipment,

Magnus Sethson, Linköping University, Sweden

14:30

SESSION 5b - Actuators

Chair: Jean-Charles Mare

Hall
B

Modelling, Simulation and Validation of the Pneumatic End-Position Cylinder Cushioning,

Fedor Nazarov, Technische Universität Dresden, Germany

Improving the Efficiency of Valve-controlled Systems by using Multi-chamber Actuators,

Henrique Raduenz, Linköping University, Sweden

The Hydraulic Infinite Linear Actuator for Efficient and Flexible Timber and Agricultural Logistics,

Magnus Landberg, Linköping University, Sweden

Concept, Simulation Studies and Design for a Novel Concept of the Hydraulic Binary Counter,

Rudolf Scheidl, Johannes Kepler University, Austria

15:50

Break - Gathertown

16:10

SESSION 6a - Modelling

Chair: Andrea Vacca

Hall
A

Hydraulic Trainer for Hands-on and Virtual Labs for Fluid Power Curriculum,

Hassan Assaf, Purdue University, USA

A Study of Hydraulically Actuated Oscillating Pitch to Increase Energy Production in Wind Turbines,

Daniel Escobar, University of Minnesota, USA

16:10

SESSION 6b - Pumps 2

Chair: Torben Ole Andersen

Hall
B

A New Degree of Freedom for Variable Axial Piston Pumps with Valve Plate Rotation

Thomas Heeger, Linköping University, Sweden

Strategies to Minimize Data Sample Size for Regression-based Pump/motor Models,

José Garcia-Bravo, Electrohydraulic Engineer, IDAS Electrohydraulics, USA

16:50

PLENARY SESSION 7

Chair: Petter Krus

Historical Review of Thrust Vector Control for Space Applications

Prof. Jean-Charles Mare, INSA Toulouse - Institut Clément Ader, France

Farewell and Best Paper Award

Prof. Petter Krus, Linköping University, Sweden and **Prof. Andrew Plummer**, University of Bath, UK

Main
Hall

17:40

End of the Conference

