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| Symposium -  | **XXIII Biannual Symposium on Measuring Techniques in Turbomachinery****Stuttgart, 1-2 September 2016** |

**Thursday 1 September 2016**

***08:00* – *08:50* Registration**

**08:50 – 09:00 Welcome to XIII SMTT**

**Session A1 Measurement of turbomachinery flows**

***09:00*** *Measurement of unsteady aerodynamic data in turbomachinery periodic flows*

 **J. Lepičovský and D. Šimurda**

Institute of Thermomechanics AS CR, Prague Czech Republic

***09:25*** *Measurement of thermal wakes in compressor secondary air systems using low frequency thermocouple data*

 **M. Puttock and M. Rose**

Thermo-Fluid Mechanics Research Center, University of Sussex, United Kingdom

***09:50*** *Advances in heat transfer and unsteady flow measurements in a smooth stator rotor cavity with purge flow, with variable axial gap*

 **H. Koivisto and M. Rose**

Thermo-Fluid Mechanics Research Center, University of Sussex, United Kingdom

***10:15*** *Experimental investigation of the effects of different installment positions of airfoil-probes on the flow field of a compressor cascade*

 **H. Ma and C. Jin**

School of Energy and Power Engineering, Beihang University, China

***10:40-11:00* Coffee break**

**Session A2 Temperature/entropy probes**

***11:00*** *A new fast-response entropy and yaw probe*

 **M. Adams, M. Collins, K. Chana and T. Povey**

Osney Thermofluids Laboratory, Oxford University, United Kingdom

***11:25*** *A fast response total temperature probe for turbomachinery*

 **M. Arenz, S. Staudacher, B. Lüttig, W. Berns and M. Rose**

Institute of Aircraft Propulsion Systems (ILA), University of Stuttgart, Germany

***11:50*** *Unsteady temperature measurements through digital compensation of dual wire thermocouples*

 **J. Braun and G. Paniagua**

School of Mechanical Engineering, Purdue University, Indiana, United States

***12:15*** *Highly reliable aerodynamic calibration for ground and flight testing total temperature probes*

 **F. Fontaneto and A. Lahalle**

von Karman Institute for Fluid Dynamics, Rhode-St-Genèse, Belgium

***12:40-14:00* Lunch at IBZ**

**Session A3 Novel instrumentation and hot-wire anemometry**

***14:00*** *Wireless RF telemetry for rotating frame data acquisition and control*

 **J. Farman**

Whittle laboratory, Cambridge University, United Kingdom

***14:25*** *Measurement of tip clearances using capacitive proximity sensors in turbine rotor stator cavities*

 **D. Payne and V. Kanjirakkad**

 Thermo-Fluid Mechanics Research Center, University of Sussex, United Kingdom

***14:50*** *Multi-hotwire probe sensitivity optimization in constant temperature anemometry (CTA) for transonic flows*

 **E. Yablochkin and B. Cukurel**

 Technion-Israel Institute of Technology, Haifa, Israel

***15:15*** *Towards a more reliable application of hot-wire anemometry in complex compressible flows*

 **E. Boufidi and F. Fontaneto**

von Karman Institute for Fluid Dynamics, Rhode-St-Genèse, Belgium

***15:40-16:00* Coffee break**

**Session A4 Test facilities**

***16:00*** *Building a low speed research compressor at Seoul National University*

 **J. Lee, L. Lee and S. Song**

Seoul National University, Seoul, South Korea

***16:25*** *A hands-on student lab for the relation between unsteady aerodynamics and structural dynamics*

 **J. Dahlqvist and J. Fridh**

KTH Royal Institute of Technology, Stockholm, Sweden

***16:50*** *Development of a transonic linear compressor cascade test facility*

 **J. Rhee, J. Kim, J. Im and S. Song**

Seoul National University, Seoul, South Korea

**17:15 Laboratory Tours**

**19:30 Departure for Dinner**

**Friday 2 September 2016**

**Session B1 Optical measurements**

***09:00*** *Development and testing of a system for time resolved measurement of droplet spectra in steam turbines*

 **M. Schatz, T. Eberle and D. Vogt**

Institute of Thermal Turbomachinery and Machinery Laboratory (ITSM), University of Stuttgart, Germany

***09:25*** *Toward embedded optical measurement techniques for precision combustion monitoring in aero-engines*

 **G. Kraft, F. Giulani and L. Pfefferkorn**

Combustion Bay One e.U., Graz, Austria

***09:50*** *Complex aero-engine intake aerodynamics - Part I: S-PIV capabilities for inlet flow distortion measurements*

 **D. Gil Prieto, G. Tanguy, P.K. Zachos and D.G. MacManus**

Propulsion Engineering, Cranfield University, United Kingdom

***10:15*** *Complex aero-engine intake aerodynamics - Part II: Aerodynamic and inlet flow distortion analyses using S-PIV data and DDES simulations*

 **D. Gil Prieto, G. Tanguy, P.K. Zachos and D.G. MacManus**

Propulsion Engineering, Cranfield University, United Kingdom

***10:40-11:00* Coffee break**

**Session B2 Pressure probes I**

***11:00*** *Novel usage of five-hole probes: Tidal channel turbulence measurements*

 **A. Young, R.U. Guion, N.R. Atkins and J. Costan**

Whittle lab, University of Cambridge, United Kingdom

***11:25*** *On the impact dimensions of pneumatic probes on the response time*

 **C. Brüggemann, S. Hobel, M. Schatz and D. Vogt**

Institute of Thermal Turbomachinery and Machinery Laboratory (ITSM), University of Stuttgart, Germany

***11:50*** *Fast settling millimeter-scale five-hole probe*

 **S. Grimshaw and J.V. Taylor**

Whittle lab, University of Cambridge, United Kingdom

***12:15*** *Analysis and optimization of a high-frequency aerodynamic probe*

 **Z. Liu and G. Paniagua**

School of Mechanical Engineering, Purdue University, Indiana, United States

***12:40-14:00* Lunch at IBZ**

**Session B3 Pressure probes II**

***14:00*** *Calibration and implementation of a transient sub miniature 5-hole probe to determine complex flow structures in turbomachines*

 **T. Zimmermann and M. Wirsum**

Institute of Power Plant Technology, Steam and Gas Turbines, RTWH Aachen University, Aachen, Germany

***14:25*** *A miniature pseudo-multi-hole pressure probe calibration*

 **F. Ceyhun Sahin and J. Schiffmann**

Laboratory of Applied Mechanical Design (LAMD), Swiss Federal Institute of Technology, Lausanne, Switzerland

***14:50*** *Experimental investigation geometry effects on five-hole probe performance*

 **K. Magkoutas, T. Efstathiadis and A.I. Kalfas**

Laboratory of Fluid Mechanics and Turbomachinery (LFMT), Aristotle University of Thessaloniki, Thessaloniki, Greece

***15:15-15:35* Coffee break**

**Session B1 Heat transfer measurements**

***15:35*** *A comparison between transient heat transfer measurements using TLC and IR thermography*

 **S. Brack and J. von Wolfersdorf**

Institute of Aerospace Thermodynamics (ITLR), University of Stuttgart, Germany

***16:00*** *Heat thin film gauge arrangements for transient heat transfer measurements*

 **I. Usandizaga, P. Beard, K. Chana and T. Povey**

Osney Thermofluids Laboratory, Oxford University, United Kingdom

***16:25*** *Discrete functions approach to retrieve heat flux*

 **D. Cuadrado and G. Paniagua**

School of Mechanical Engineering, Purdue University, Indiana, United States

***16:50* Closing session – Discussion for future meeting**

Note: Affiliation corresponds to lead author