

FLOMEKO 2016 Conference Programme

Start	Finish	Monday 26th September 2016
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19:00	21:00	Welcome Reception Sponsored by National Measurement Institute Australia Marble Bar - Hilton Sydney
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Start	Finish	Tuesday 27th September 2016
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8:00	9:00	Registration (Level 2, Hilton Hotel)
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9:00	10:30	Opening Ceremony
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10:30	11:00	Morning Tea Break
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Session A1 Room 3					
Session Topic: International Key Comparisons					
Session Chairman: Dr John Wright					
Session Number	Presenter	Paper Title	Country		
11:00	11:20	A.1.1	Dr Richard Steven	Wet Gas Flow Facility Inter-Comparisons	United States
11:20	11:40	A.1.2	Dr Noriyuki Furuichi	Inter-Laboratory Comparison of Small Water Flow Calibration Facilities Between EHI and NMIJ	Japan
11:40	12:00	A.1.3	Ms Deona Jonker	Bilateral Comparison between NMISA and MIKES – Part of the NMISA Flow Laboratory Journey to Accreditation	South Africa
12:00	12:20	A.1.4	Dr Jos van der Grinten	An Intercomparison of Water Flow and Gas Flow Laboratories using Iso 5167 DP Devices	Netherlands
12:20	12:30	Session Chairman Address			

Session B1 Room 4					
Session Topic: LNG Measurement					
Session Chairman: Dr Peter Lucas					
Session Number	Presenter	Paper Title	Country		
B.1.1	Dr Oliver Bükler	Metrological Support for LNG Custody Transfer and Transport	Sweden		
B.1.2	Dr Peter Lucas & Mr Gerard Blom	World's First LNG Test & Calibration Facility	Netherlands		
B.1.3	Mr Jan Sluse	Numerical Simulation of Flow Metering System for Liquefied Natural Gas	Czech Republic		
B.1.4	Dr Jean-Pierre Vallet (Dr Rémy Maury)	On-Site Calibration of LNG Flowrate Measurement with a Cryogenic LDV Standard	France		
				Session Chairman Address	

12:30	13:30	Lunch
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Session A2 Room 3					
Session Topic: CFDs					
Session Chairman: Dr Rémy Maury					
Session Number	Presenter	Paper Title	Country		
13:30	13:50	A.2.1	Dr Jan Gersl	Impact of Swirl on Flow Measurement in Stacks - CFD Modelling	Czech Republic
13:50	14:10	A.2.2	Dr Stanislav Knotek	Numerical Simulation of Multiphase Flows in Large Horizontal Pipes	Czech Republic
14:10	14:30	A.2.3	Dr Sonja Schmelter	Numerical Simulation of Multiphase Flow in a Vertically Mounted Venturi Flow Meter	Germany
14:30	14:50	A.2.4	Prof Yuming Shen	Numerical Simulation for the Straight Pipeline after a Sonic Nozzle and Its Influence on the Discharge Coefficient	China
14:50	15:00	Session Chairman Address			

Session B2 Room 4					
Session Topic: Gas Standards					
Session Chairman: Dr Chunhui Li					
Session Number	Presenter	Paper Title	Country		
B.2.1	Dr Zdenek Krajicek	Experiences with Use of a Gravimetric Flow Standard in Vacuum	Czech Republic		
B.2.2	Dr Zhipeng Xu	Low-speed Jerking Motion of the Reciprocating Double-pistons Gas Prover	China		
B.2.3	Mr Zhe (Steven) Wang	Improving the Measurement Uncertainty of a Low Pressure Gas Flow Standard	Australia		
B.2.4	Dr Khaled Chahine	Preliminary Commissioning Tests on NMIA's New Ultra-High-Accuracy 670L PVTt System for the Calibration of Critical Flow Venturi Nozzles	Australia		
				Session Chairman Address	

15:00	15:30	Afternoon Tea Break
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Session A3 Room 3					
Session Topic: Hydrocarbon Flow 1					
Session Chairman: Mr Gerard Blom					
Session Number	Presenter	Paper Title	Country		
15:30	15:50	A.3.1	Dr Kar-Hooi Cheong	Static Gravimetric Method with Flying Start-and-Finish for Calibration of Small Hydrocarbon Flow	Japan
15:50	16:10	A.3.2	Dr Takashi Shimada	Establishment of Hydrocarbon Flow Traceability for a Large Ball Prover By Using Flowmeters Installed in Parallel	Japan
16:10	16:30	A.3.3	Dr Jos van der Grinten	Calibration Models and Uncertainty Analysis of the Euroloop Liquid Hydrocarbon Flow Facility	Netherlands
16:30	16:50	A.3.4	Dr Ryouji Doihara	Evaluation of a Gravimetric Calibration Facility using a Double-Wing Diverter with Four Types of Working Liquids	Japan
16:50	17:00	Session Chairman Address			

Session B3 Room 4					
Session Topic: Micro-flow					
Session Chairman: Dr Elsa Batista					
Session Number	Presenter	Paper Title	Country		
B.3.1	Dr Florestan Ogheard	Experimental Study of Buoyancy and Surface Tension Effects of an Immersed Capillary Gravimetric Micro-Flow Facility	France		
B.3.2	Mr Anthony (Casey) Rombouts	Improvements of the Dynamic Gravimetric Flow Standard (DGFS) Below 0.2 Mg·s ⁻¹ N2 (10 Sccm)	United States		
B.3.3	Dr Elsa Batista	SIP-HL T07 Contributions to Method Improvement in Syringe Pumps Calibration	Portugal		
B.3.4	Dr Theerarak Chinarak	Calibration Guidelines for the Infusion Pump Analyzer Applied in Secondary Laboratories in Thailand	Thailand		
				Session Chairman Address	

FLOMEKO 2016 Conference Programme

Start	Finish	Wednesday 28th September 2016			
		Session A4 Room 3			
		Session Topic: CFVN			
		Session Chairman: Dr Khaled Chahine			
		Session Number	Presenter	Paper Title	Country
9:00	9:20	A.4.1	Dr John Wright	Back Pressure Ratio and the Transonic Resonance Mechanism of Low Unchoking in Critical Flow Venturis	United States
9:20	9:40	A.4.2	Dr Bulent Unsal	Numerical Findings on the Boundary Layer Transition of Critical-Flow Venturi Nozzles	Turkey
9:40	10:00	A.4.3	Mr Sven Brinkhorst	Experimental Investigation of Cavitating Herschel Venturi-Tube Configuration	Germany
10:00	10:20	A.4.4	Mr Young-cheol Ha	The Uncertainties in the Critical Flow Functions Predicted By AGA8-DC92 and GERG-2008	Korea South
10:20	10:30	Session Chairman Address			
		Session B4 Room 4			
		Session Topic: Coriolis Meters			
		Session Chairman: Dr Chun-Min Su			
		Session Number	Presenter	Paper Title	Country
		B.4.1	Dr Alfred Rieder	Development Process and Third Party Test Results of a Coriolis Mass Flow Meter with Superior Density Performance	Germany
		B.4.2	Dr Hao Zhu	An Innovative Technology for Coriolis Metering under Entrained Gas Condition	Germany
		B.4.3	Prof Yuming Shen	Analysis of Coriolis Flowmeters Effected by Cryogenic Fluid Based on Stiffness Model	China
		B.4.4	Mr Terence Cousins	Should Reynolds Number Correction and Linearization of Flow Meters be Standardize	United States
		Session Chairman Address			
10:30	11:00	Morning Tea Break			
		Session A5 Room 3			
		Session Topic: Multiphase Flow			
		Session Chairman: Dr Michael Reader-Harris			
		Session Number	Presenter	Paper Title	Country
11:00	11:20	A.5.1	Dr Seok Hwan Lee	Measurement of Two-Phase Hydrocarbon Spray Flows using Laser Plasma Spectroscopy	Korea South
11:20	11:40	A.5.2	Dr Peter Lucas	Intercomparison Between Multiphase Flow Test Facilities	Netherlands
11:40	12:00	A.5.3	Mr Keelan O'Neill	Application of Earth's Field Nuclear Magnetic Resonance to Multiphase Flow Metering	Australia
12:00	12:20	A.5.4			
12:20	12:30	Session Chairman Address			
		Session B5 Room 4			
		Session Topic: Volume and Liquid Flow Standards 1			
		Session Chairman: Dr Michael Moldover			
		Session Number	Presenter	Paper Title	Country
		B.5.1	Dr Miroslava Benkova	Experience with Calibration of the Piston Prover for Cold and Hot Water Test Equipment	Czech Republic
		B.5.2	Dr Hugo Bissig	Recent Innovations In the Field of Traceable Calibration of Liquid Milli-Flow Rates with Liquids other than Water	Switzerland
		B.5.3	Dr Hae-Man Choi	Development of Water Flow Standard System for Calibrating Water Flow Meters up to 2000 m ³ /h In KRIS	Korea South
		B.5.4	Mr ShunLi Wang	Development of Vibration Tube Liquid Density Meter Standard In XJMT	China
		Session Chairman Address			
12:30	13:30	Lunch			
		Session A6 Room 3			
		Session Topic: Orifice Plate			
		Session Chairman: Dr Yong Moon Choi			
		Session Number	Presenter	Paper Title	Country
13:30	13:50	A.6.1	Dr Michael Reader-Harris	Diagnostics and Orifice Plates: Theoretical and Computational Work	United Kingdom
13:50	14:10	A.6.2	Dr Nicolas Lancial	Discharge Coefficient Prediction by Experimental and Numerical Simulations Through an Orifice Plate in a Round Pipe: Experimental and Numerical Investigation	France
14:10	14:30	A.6.3	Dr Michael Reader-Harris	The Expansibility Factor Equations in ISO 5167-2 and ISO5167-4: Do They Deliver What They Promise?	United Kingdom
14:30	14:50	A.6.4			
14:50	15:00	Session Chairman Address			
		Session B6 Room 4			
		Session Topic: General Flow Topics 1			
		Session Chairman: Dr Mark Ballico			
		Session Number	Presenter	Paper Title	Country
		B.6.1	Dr Liji Huang	A Novel Vortex Flow Meter with Mems Flow Sensor	United States
		B.6.2	Dr John Wright	Characterization and Uncertainty of NIST's Scale-Model Smokestack Simulator	United States
		B.6.3	Dr Mark Ballico	Flow Metrology at NMIA: Current and Future Projects	Australia
		B.6.4			
		Session Chairman Address			
15:00	15:30	Afternoon Tea Break			
		Session A7 Room 3			
		Session Topic: CFVN 2			
		Session Chairman: Dr Bodo Mickan			
		Session Number	Presenter	Paper Title	Country
15:30	15:50	A.7.1	Dr Masahiro Ishibashi	Possibility of Universal CFVN -- Forced Boundary Layer Transition in CFVNs --	Japan
15:50	16:10	A.7.2	Prof Ernst von Lavante	Influence of Upstream Shape Factors on Discharge Coefficient of Critical Flow Venturi Nozzles	Germany
16:10	16:30	A.7.3	Dr Masahiro Ishibashi	Dead Volume Correction for the Calibration of CFVNs - Differential Calibration and Optimum Estimation -	Japan
16:30	16:50	A.7.4	Dr Chunhui Li	The Influence of Stagnation Pressure on Discharge Coefficient of the Sonic Nozzle	China
16:50	17:00	Session Chairman Address			
		Session B7 Room 4			
		Session Topic: Volume and Liquid Flow Standards 2			
		Session Chairman: Dr Miroslava Benkova			
		Session Number	Presenter	Paper Title	Country
		B.7.1	Dr Richard Steven	Wedge Meters with Low Reynolds Number Flow	United States
		B.7.2	Mr Daniel Schumann	Development of a Calibration System for Water Meters Close to Real World Conditions	Germany
		B.7.3	Mr Mika Huovinen	New Gravimetric National Standard for Water Flow Measurements In Finland	Finland
		B.7.4	Mr Markus Juling	LDA Volume Flow Rate Standard for Water using High Spatial Resolution LDA for Traceable Measurements in Power Plants	Germany
		Session Chairman Address			

FLOMEKO 2016 Conference Programme

Start Finish **Thursday 29th September 2016**

Session A8 Room 3		Session Topic: Ultrasonic Metering			
Session Chairman: Dr Masahiro Ishibashi		Session Number	Presenter	Paper Title	Country
9:00	9:20	A.8.1	Dr Heming Hu	Study on Transducer Protrusion Effect of Ultrasonic Flowmeter using Wind Tunnel and LDV	China
9:20	9:40	A.8.2	Mr Seungjun Lee	Effect on Ultrasonic Gas Flow Meters Due to Operating Conditions of Natural Gas Metering Station	Korea South
9:40	10:00	A.8.3	Mrs Xiaoyu Li	The Influence of Ultrasonic Transducer Temperature adaptability on the Measurement Results	China
10:00	10:20	A.8.4	Dr Heming Hu	Experimental Study on Velocity Representation of Ultrasonic Transit-time Discharge Measurement in Open Channel	China
10:20	10:30	Session Chairman Address			

Session B8 Room 4		Session Topic: Air Speed			
Session Chairman: Prof Ernst von Lavante		Session Number	Presenter	Paper Title	Country
		B.8.1	Dr Liji Huang	Calibration of a Mems Anemometer	United States
		B.8.2	Dr Yoshiya Terao	Establishment of a National Primary Standard for Air Speed up to 90 m/s at NMIJ	Japan
		B.8.3	Dr Chun-Min Su	Pitot Tubes Calibration and System Integration of Automated 3D Traverse Stage with the Wind Tunnel	Taiwan
		B.8.4	Dr Liang Zhang	NIM's Research Progress on Flue Gas Flowrate Measurement	China
		Session Chairman Address			

10:30 11:00 **Morning Tea Break**

Session A9 Room 3		Session Topic: High Pressure Standard			
Session Chairman: Dr Chun-Min Su		Session Number	Presenter	Paper Title	Country
11:00	11:20	A.9.1	Dr Chunhui Li	The Uncertainty Analysis and Capability Verification for the High Pressure PVTt Gas Flow Facility of NIM	China
11:20	11:40	A.9.2	Mr Thomas Kegel	Reducing the Uncertainty of a High Pressure, High Flowrate Calibration Facility	United States
11:40	12:00	A.9.3	Mr Wen-Bin Wang	Towards the Improvement of a Blow-Down Type High Pressure Air Flow Calibration Rig	Taiwan
12:00	12:20	A.9.4			
12:20	12:30	Session Chairman Address			

Session B9 Room 4		Session Topic: General Flow Topics 2			
Session Chairman: Mr Steve Caldwell		Session Number	Presenter	Paper Title	Country
		B.9.1	Dr Xiao Ming	Spindle - New Type of Differential Pressure Flowmeter	China
		B.9.2	Mr Antony Cockshott	Ensuring a High Level Confidence in Sonic Test Equipment Used to Certify Domestic Gas Meters	Australia
		B.9.3	Dr Bin Wang	Research on Calibration Device using Plunger Metering Cylinder for Turbine Flowmeter	China
		B.9.4	Dr Rainer Engel	Laboratory Inter-Comparison Measurements - Means of Proving Traceability in Liquid Flow Metering	Germany
		Session Chairman Address			

12:30 13:30 **Lunch**

Session A10 Room 3		Session Topic: Hydrocarbon Flow 2			
Session Chairman: Dr Bulent Unsal		Session Number	Presenter	Paper Title	Country
13:30	13:50	A.10.1	Mr Simon Dignan	A Facility for the Calibration of Flow Meters using LPG at Near-Boiling Conditions	Australia
13:50	14:10	A.10.2	Mr Thomas Kegel	Uncertainty Analysis of a Multi-Viscosity Liquid Hydrocarbon Calibration Facility	United States
14:10	14:30	A.10.3	Mr Simon Dignan	An Automated System for Flow and Pressure Control at NMIA'S Liquid Hydrocarbon Flow Facility	Australia
14:30	14:50	A.10.4	Mr Terence Cousins	The Development and Performance of a Low Uncertainty Flexible Multi-Viscosity Calibration Facility	United States
14:50	15:00	Session Chairman Address			

Session B10 Room 4		Session Topic: General flow Topics 3			
Session Chairman: Dr Michael Reader-Harris		Session Number	Presenter	Paper Title	Country
		B.10.1	Dr Elsa Batista	Volume Comparison on Calibration of Micropipettes - Gravimetric and Photometric Method	Portugal
		B.10.2	Dr Sejong Chun	Microfluidic Measurement of an Infusion Pump using a Loadcell	Korea South
		B.10.3	Mr Tao Meng	Comparison of Test Methods for Measuring Flow Stability	China
		B.10.4	Dr Denis F. Hinz	Conditioning of Swirling and Stratified Pipe-Flow: Analysis with Laser-Doppler Velocimetry	Denmark
		Session Chairman Address			

15:00 15:30 **Afternoon Tea Break**

Session A11 Room 3		Session Topic: General Flow Topics 4			
Session Chairman: Dr Woong Kang		Session Number	Presenter	Paper Title	Country
15:30	15:50	A.11.1	Dr Woong Kang	Measurement of Air Flowrate in an Engine Inlet Duct for Altitude Engine Tests	Korea South
15:50	16:10	A.11.2	Dr Yiping Liu	The Residual Oil Film Adhering to the Rough Inner Wall of Bell Prover	China
16:10	16:30	A.11.3	Dr Sonja Schmelter	Numerical Simulation of the Gas Mixing Behavior in a Soot Conditioning System	Germany
16:30	16:50	A.11.4			
16:50	17:00	Session Chairman Address			

Session B11 Room 4		Session Topic: International Key Comparisons 2			
Session Chairman: Dr John Wright		Session Number	Presenter	Paper Title	Country
		B.11.1	Dr Bodo Mickan	Extended Data Analysis of Bilateral Comparisons with Air and Natural Gas Up To 5 Mpa	Germany
		B.11.2	Dr Liang Zhang	The Comparison of Low Pressure Gas Flowrate among NIM, PTB and VNIIR	China
		B.11.3	Dr Han Zhang	Investigation on Error Model of Turbine Flowmeters Based on The Reynolds Number	China
		B.11.4			
		Session Chairman Address			

Papers Only		
Author	Paper Title	Country
Dr Lijun Sun	Development of a CO2 Two-phase Flow Rig for Flowmeters Calibration under CCS Conditions	China
Dr Lijun Sun	A Novel Motor-driven Flow Diverter with an Enclosed Structure	China

FLOMEKO 2016 Conference Programme

Poster Session - Level 2 Lobby			
Session Number	Presenter	Poster Title	Country
1	Mr Ali Quraishi	AGA Reports 8 & 9	United States
2	Dr Michael Reader-Harris	ISO/AWI 21354 – Measurement of Multiphase Fluid Flow	United Kingdom
3	Mrs Xiaoyu Li	The influence of ultrasonic transducer temperature adaptability on the measurement results	China
4	Mr ShunLi Wang	Development of Vibration Tube Liquid Density Meter Standard in XJMT	China
5	Dr Chun-Min Su	Pitot Tubes Calibration and System Integration of Automated 3D Traverse Stage with the Wind Tunnel	Taiwan
6	Dr Sejong Chun	Proficiency test for measurement equivalence in water flow metering with Coriolis mass flow meters in South Korea	Korea South
7	Mr Mika Huovinen	Water Flow Meter Calibration in NMI Laboratory of Finland	Finland