



16th Multiphase Flow Conference and Short Course:  
Simulation, Experiment and Application  
Dresden, 13 - 16 November 2018



Tuesday, 13 November 2018				
Short Course on Multiphase Flows				
Time		Lecturer	Affiliation	Title
08:30	09:15	Registration		
09:15	09:25	G. Gerbeth	Helmholtz-Zentrum Dresden-Rossendorf, Germany	Welcome
09:25	10:25	G. Scheuerer	ISimQ GmbH, Warngau, Germany	Mathematical Models for Multiphase Flows: Overview & Basic Equations
10:25	10:45	Break with Coffee, Tea & Beverages		
10:45	11:45	T. Esch	ANSYS Germany, Otterfing	Lagrangian Two-Phase Flow Modelling
11:45	12:05	Break with Coffee, Tea & Beverages		
12:05	13:05	G. Scheuerer	ISimQ GmbH, Warngau, Germany	Eulerian Multiphase Flow Modelling: Phase Interaction Models
13:05	13:10	Group Photo		
13:10	14:00	Lunch		
14:00	15:00	U. Hampel	Helmholtz-Zentrum Dresden-Rossendorf, Germany	Measurement Techniques and Experimental Investigations for Multiphase Flows
15:00	15:20	Break with Coffee, Tea & Beverages		
15:20	16:20	E. Krepper	Helmholtz-Zentrum Dresden-Rossendorf, Germany	Interfacial Heat and Mass Transfer Models
16:20	16:40	Break with Coffee, Tea & Beverages		
16:40	17:40	T. Esch	ANSYS Germany	Practical Demonstration of Eulerian & Lagrangian CFD Simulation
17:40	18:10	All	Discussion, Questions & Answers	
18:15		Transfer to Dresden		
19:00		Short Course Dinner @ Restaurant "Schillergarten"		



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Wednesday, 14 November 2018				
Short Course on Multiphase Flows - Simulation Branch				
Time		Lecturer	Affiliation	Title
09:00	10:00	R. Rzehak	Helmholtz-Zentrum Dresden-Rossendorf, Germany	Dispersed Flow Modelling - Multiple-Size Group Modelling - MUSIG
10:00	10:15	Break with Coffee, Tea & Beverages		
10:15	11:00	T. Höhne	Helmholtz-Zentrum Dresden-Rossendorf, Germany	Stratified & Segregated Flow Modelling - Interfacial Area Density Model - AIAD
11:00	11:15	Break with Coffee, Tea & Beverages		
11:15	12:00	D. Lucas	Helmholtz-Zentrum Dresden-Rossendorf, Germany	Multi-Scale Modelling Techniques - GENTOP
12:00	13:00	Lunch		
Short Course on Multiphase Flows - Experimental Branch				
Time		Lecturer	Affiliation	Title
09:00	12:00	U. Hampel & E. Schleicher	Helmholtz-Zentrum Dresden-Rossendorf, Germany	Interactive Seminar on the Application of Two-Phase Flow Measuring Techniques - Wire-Mesh Sensors & Gamma CT
12:00	13:00	Lunch		
12:30	13:00	Registration Conference		



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Wednesday, 14 November 2018 - Multiphase Flow Conference - Session 1				
Chair:		T. Höhne	Helmholtz-Zentrum Dresden-Rossendorf	
Time		Presenter	Affiliation	Title
13:00	13:10	R. Sauerbrey	HZDR, Germany	Welcome
13:10	13:35	E. Schmeyer	Physikalisch-Technische Bundesanstalt, Germany	Comparison between RANS and LES for multiphase flow simulations
13:35	14:00	P. Sassi	Universitat Rovira i Virgili, Spain	Experimental Analysis on three-phase flows in pipelines
14:00	14:25	M. Tekavcic	Jožef Stefan Institute, Slovenia	Three-dimensional simulations of liquid waves in isothermal vertical churn flow with interFoam
14:25	14:50	F. Denner	Otto-von-Guericke-Universität Magdeburg, Germany	Pressure-based algorithm for interfacial flows in all Mach number regimes
14:50	15:15	G. Gruszczyński	Warsaw University of Technology, Poland	Modelling of immiscible multiphase flows using phase-field, Cascaded Lattice Boltzmann Method
15:15	15:45	Coffee, Tea & Beverages		
Multiphase Flow Conference - Session 2				
Chair:		T. Esch	ANSYS Germany, Darmstadt	
Time		Presenter	Affiliation	Title
15:45	16:10	R. F. Lazaro de Cerqueira	Federal University of Santa Catarina, Brazil	Deep learning techniques applied to the measurement of two-phase bubbly pipe flows using particle image velocimetry
16:10	16:35	W. Shi	The University of Nottingham Ningbo, China	A modified bubble breakage model accounting the effect of bubble-induced turbulence energy spectrum distributions
16:35	17:00	C. Muilwijk	University of Limerick, Ireland	Experiments on bubbly flows in a 2D mixing layer
17:00	18:30	Visit of the Experimental Facilities @ Institute of Fluid Dynamics		
18:30		Transfer to the hotels		



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Thursday, 15 November 2018				
Multiphase Flow Conference - Session 3				
Chair:		R. Rzehak	Helmholtz-Zentrum Dresden-Rossendorf	
Time		Presenter	Affiliation	Title
09:00	09:45	V. Ranade	Queen's University of Belfast, UK	Keynote: Modelling and Applications of Hydrodynamic Cavitation
09:45	10:10	Z. Cao	Lund University, Sweden	Experimental study of pool boiling heat transfer and a heat transfer model for low heat fluxes on modified surfaces
10:10	10:35	L. Zhang	Chongqing University, China	The measurement of gas-liquid flow in vertical rod bundle
10:35	11:00	S. Tietze	PSI, Switzerland	Measurement of gaseous iodine species retention in FCVS
11:00	11:30	Coffee, Tea & Beverages		
Multiphase Flow Conference - Session 4				
Chair:		U. Hampel	Helmholtz-Zentrum Dresden-Rossendorf	
Time		Presenter	Affiliation	Title
11:30	11:55	N. Hidman	Chalmers, Sweden	Numerical Simulation of a Laser-Induced Vapour Bubble
11:55	12:20	P. Lin	University of Dundee, UK	A Thermodynamically Consistent Phase-Field Model For Two-Phase Flows And Its Mass Conservative & Energy Stable Finite Difference Method
12:20	12:45	X. Zhu	Technical University of Denmark, Denmark	Large scale simulation of flow evaporation in plate heat exchangers using volume of fluid method
12:45	12:50	Group Photo		
12:50	13:45	Lunch		





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Multiphase Flow Conference - Session 5				
Chair:		G. Scheuerer	ISimQ GmbH	
Time		Presenter	Affiliation	Title
13:45	14:10	O.J.I. Kramer	Delft University of Technology , The Netherlands	Improvement of the Richardson-Zaki liquid-solid fluidisation model on the basis of hydraulics
14:10	14:35	F. Maluta	University of Bologna, Italy	Predictions of dense solid-liquid stirred tanks by RANS-based two fluid model simulations
14:35	15:00	V. Verma	Delft University of Technology, The Netherlands	A Solid-Stresses-Based Multiphase Particle-in-Cell Model For Gas-particle Flow in Fluidized Beds
15:00	16:30	Poster Session with Coffee, Tea & Beverages - Votes for the Best Poster Award - see Poster list		
Multiphase Flow Conference - Session 6				
Chair:		E. Krepper	Helmholtz-Zentrum Dresden-Rossendorf	
16:30	16:55	J. Lee	Chungbuk National University, South Korea	Computational Identification of Debris Flow prone Region
16:55	17:20	J. Chaudhuri	TU Dortmund, Germany	Pressure drop in randomly oriented fibrous filters
17:20	17:45	M. Martinez	Universitat Rovira i Virgili, Spain	Clustering, caustics and collisions of long flexible fibers in two-dimensional flow fields
17:45	18:10	Y. Fatt	Khalifa University of Science and Technology, UAE	Pore-Scale Modeling of Deposition in Porous Media
18:15		Transfer to the Restaurant "Pulverturm"		
19:00	21:30	Conference Dinner @ Restaurant "Pulverturm"		



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Friday, 16 November 2018				
Multiphase Flow Conference - Session 7				
Chair:		D. Lucas	Helmholtz-Zentrum Dresden-Rossendorf	
Time		Presenter	Affiliation	Title
09:00	09:45	M. Klein	Universität der Bundeswehr, Munich, Germany	Keynote: Towards LES of multiphase flows with moving interfaces
09:45	10:10	M. Abdullahi	Imperial College, UK	Experimental measurements of gas entrainment rates in gas-liquid two-phase slug flows in horizontal and slightly inclined pipes
10:10	10:35	C. Redondo	Universidad Politécnica de Madrid, Spain	High-order Discontinuous Galerkin solver for the two phases incompressible-Navier-Stokes/Cahn-Hilliard system
10:35	11:05	Coffee, Tea & Beverages		
Multiphase Flow Conference - Session 8				
Chair:		F. Schlegel	Helmholtz-Zentrum Dresden-Rossendorf	
Time		Presenter	Affiliation	Title
11:05	11:30	M. Shah	Curtin University, Australia	Simultaneous measurements of gas and liquid phases using an optical probe
11:30	11:55	P. Rostami	Max Planck Institute for Polymer Research, Germany	Gas phase induced Marangoni flows causes instable wetting film during drop merging.
11:55	12:20	F. Viereckl	TU Dresden, Germany	Investigation of flow patterns during boiling in a slightly inclined tube
12:20	12:30	Closure		
12:30	13:00	Snacks & Beverages		
13:00		Transfer to Hotels or Airport		



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Poster - Best poster will be selected by the participants			
1	O. Keplinger	HZDR, Germany	Bubble motion in liquid metal with and without a magnetic field
2	J. Sangwai	Indian Institute of Technology Madras, India	High Pressure Rheology of Gas Hydrate in Multiphase Flow Systems
3	E. Paladino	Federal University of Santa Catarina, Brazil	Experimental investigation of the flow structure around Taylor bubbles in the presence of dispersed bubbles in vertical ducts
4	D. Lote	Institute of Chemical Technology, India	Numerical Simulations of the Gas-Liquid two phase flow using population balance modelling in Vertical Pipe
5	T. Höhne	HZDR, Germany	Stratified & Segregated Flow Modelling - Interfacial Area Density Models - AIAD
6	K. Liu	Dalian University of Technology, China	Numerical simulation of the Taylor instability in liquid metal batteries
7	Y. Liao	HZDR, Germany	Baseline Model for CFD of Dispersed Bubbly Flow
8	R. F. Lazaro de Cerqueira	Federal University of Santa Catarina, Brazil	Development of high-speed image processing techniques for the study of gas-liquid flows with different interfacial length scales in vertical ducts
9	S. Srinivasan	University of Limerick, Ireland	A parallel implementation of immersed boundary lattice Boltzmann method for simulating dense suspension flows
10	E. Krepper	HZDR, Germany	Baseline Model for CFD of Dispersed Bubbly Flow
11	C. Kupsch	TU Dresden, Germany	Super-resolution ultrasound flow measurement of the non-Newtonian multiphase suspension in a zinc-air flow battery
12	D. Lucas	HZDR, Germany	Multiphase CFD activities at HZDR
13	M. Olbrich	Physikalisch-Technische Bundesanstalt, Germany	Analysis of horizontal slug flow with spectral proper orthogonal decomposition
14	A. Goharzadeh	Khalifa University of Science and Technology, UAE	Experimental Study of Asphaltene Deposition in Transparent Porous Media and Capillary Systems
15	P. Lobanov	Kutateladze Institute of Thermophysics, Russia	Heat transfer in liquid downflow with isolated Taylor bubble
16	H. Hessekemper	HZDR, Germany	Airlift reactor - experiment and CFD simulation
17	J. Kolliyil	Technische Universität Dortmund, Germany	CFD Simulation of Spray Formation Combining the Volume of Fluid (VOF) and the Discrete Phase Model (DPM)
18	M. Azhar	ANSYS Inc., Lebanon, USA	On the assessment, implementation, validation, and verification of drag and lift forces for the CFD codes FLUENT and CFX





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19	F. Schlegel	HZDR, Germany	A flow pattern adaptive multi-field two-fluid concept for turbulent two-phase flows
20	R. Rzehak	HZDR, Germany	Euler-Euler-Modeling of Reactive Bubbly Flows
21	H. Yuan	Nuclear Power Institute of China, China	Subcooled Boiling Heat Transfer in a Vertical Tube under Low Flow and Low Velocity
22	A. Hazarika	University of Chemistry and Technology Prague, Czech Republic	Modelling of Gas Hold-Up in Gas-Liquid Stirred Tank
23	L. Lуго	Nuclear Power Institute of China, China	CFD simulation on void fraction distribution of adiabatic two phase 5*5 bundle flow with mixing vane spacer grid
24	P. Zedler	TU Dresden, Germany	Experimental study of the Influence of cross-overflow on the decay heat removal from spent fuel pools
25	S. Lee	Chungbuk National University, South Korea	Numerical Model for Debris Flow Using Open Source
26	J. Bak	Pusan National University, South Korea	Experiment for the local two-phase parameters in the subcooled boiling flow with 4 x 4 rod bundle
27	B. Sun	Curtin University, Australia	Experimental and Numerical Studies of Structured Packing Column
28	M. Almarouf	King Abdullah University of Science and Technology, Saudi Arabia	A multistage high-order level-set based method for compressible flow in moving complex geometry
29	L. Feierabend	Zentrum für BrennstoffzellenTechnik, Germany	Macroscopic Flow Simulation of Multiphase Suspension Electrodes for Zinc-Air Batteries
30	A. Bashkatov	HZDR, Germany	Study of the hydrogen bubble dynamics: Marangoni convection and shape oscillations
31	D. Jerng	Chung-Ang University, South Korea	Numerical Investigations of Two-phase Flow Instability in a Vertical Tube Bundle under Natural Convection Conditions
32	T. Hafemann	TU Dresden, Germany	Simulation of particle focusing in curved microfluidic channels
33	S Sahil Hossain	HZDR, Germany	Study of capillary effects during hydrogen evolution at a microelectrode
34	S. Ashraf	Indian Institute of Technology Delhi, India	Capillary driven flows in multiple interacting capillaries
35	D.-K. Sohn	Korea Institute of Nuclear Safety, South Korea	CFD Simulation of Multiphase Flow Phenomena Related to In-Service Test Program
36	W. Ding	HZDR, Germany	Critical Heat Flux: Experiment, Modelling and CFD Simulation
37	R. Cano Sanchez	Higher Institute of Technology and Applied Science Havana, Cuba	Thermohydraulic Study and Modeling of a High Temperature Nuclear Reactor considering contact between tails