

Monday, 8 November 2021				
Short Course on Multiphase Flows				
Time		Lecturer	Affiliation	Title
10:00		Online conference tool available - Meet & Discuss		
12:30	12:50	D. Lucas	Helmholtz-Zentrum Dresden-Rossendorf, Germany	Welcome & General Information
12:50	13:50	G. Scheuerer	ISimQ GmbH, Warngau, Germany	Lecture 1: Mathematical Models for Multiphase Flows: Overview & Basic Equations
13:50	14:10	Meet & Discuss		
14:10	15:10	G. Scheuerer	ISimQ GmbH, Warngau, Germany	Lecture 2: Lagrangian Two-Phase Flow Modelling
15:10	15:30	Meet & Discuss		
15:30	16:30	R. Rzehak	Helmholtz-Zentrum Dresden-Rossendorf, Germany	Lecture 3: Euler-Euler Modelling of Disperse Flows
16:30	16:50	Meet & Discuss		
16:50	17:50	U. Hampel	Helmholtz-Zentrum Dresden-Rossendorf, Germany	Lecture 4: Measurement Techniques and Experimental Investigations for Multiphase Flows
17:50	...	Meet & Discuss		

Tuesday, 9 November 2021				
Short Course on Multiphase Flows				
Time		Lecturer	Affiliation	Title
08:30	09:30	M. Peric	Siemens Industry Software GmbH, Germany	Lecture 5: Modelling of free-surface flows with focus on the VOF Method
09:30	09:50	Meet & Discuss		
09:50	10:50	M. Peric	Siemens Industry Software GmbH, Germany	Lecture 6: Interfacial Heat and Mass Transfer Models
10:50	11:10	Meet & Discuss		
11:10	11:55	R. Rzehak	Helmholtz-Zentrum Dresden-Rossendorf, Germany	Lecture 7: Poly-Disperse Bubbly Flows & Chemical Reaction
11:55	13:00	Break for Lunch		
13:00	13:45	T. Höhne	Helmholtz-Zentrum Dresden-Rossendorf, Germany	Lecture 8: Multiscale Multiphase Flow Modelling - AIAD & GENTOP
13:45	14:05	Meet & Discuss		
14:05	15:05	A. Sommer / H. Hessenkemper	Helmholtz-Zentrum Dresden-Rossendorf, Germany	Lecture 9: Optical measurement techniques in bubbly flows: From pattern recognition with neuronal networks to 3D liquid flow fields with Tomographic PIV
15:05	15:25	Meet & Discuss		
15:25	16:25	F. Schlegel / Ch. Greenshields	HZDR Germany / OpenFOAM foundation, UK	Lecture 10: Flexible development framework for the Euler-Euler approach
16:25	...	Meet & Discuss		

Wednesday, 10 November 2021				
Short Course on Multiphase Flows - Code Capabilities				
Time		Lecturer	Affiliation	Title
Plenum				
08:30	09:10	Amine Ben Hadj Ali	ANSYS Germany	Lecture 11: Multiphase Flow Features in ANSYS: Model Transition Journey
09:10	09:20	Meet & Discuss		
09:20	10:00	F. Klippel	Siemens PLM, UK	Lecture 12: Multiphase Flow Capabilities in Simcenter STAR-CCM+
10:00	10:10	Meet & Discuss		
10:10	10:50	Ch. Greenshields	OpenFOAM foundation, UK	Lecture 13: Multiphase Flow Capabilities in OpenFOAM
10:50	11:00	Meet & Discuss		
Parallel Sessions				
11:00	12:00	Henning Eickenbusch	ANSYS Germany	Lecture 14: Meet the Specialists from ANSYS
11:00	12:00	C. Santarelli & F. Klippel	Siemens PLM, Germany	Lecture 15: Simcenter STAR-CCM+ demonstration
11:00	12:00	Ch. Greenshields	OpenFOAM Foundation	Lecture 16: OpenFOAM demonstration
12:00	13:00	Break for Lunch		

Wednesday, 10 November 2021				
Multiphase Flow Conference - Session 1				
Chair:		D. Lucas	Helmholtz-Zentrum Dresden-Rossendorf, Germany	
Time		Presenter	Affiliation	Title
13:00	13:10	D. Lucas	Helmholtz-Zentrum Dresden-Rossendorf, Germany	Welcome
13:10	13:35	N. Valle Marchante	University of Groningen, Netherlands	Conservation of energy in the DNS of interface-resolved multiphase flows. Application to Bubble Induced Turbulence
13:35	14:00	M. Hundshagen	Ruhr University Bochum, Germany	3D-CFD simulations of the transition from bubbly to pocket flow regime in two-phase radial centrifugal pump flows
14:00	14:25	F. Mangani	TU Wien, Austria	Large and deformable bubbles in wall-bounded turbulence: effects of inertial and viscous forces
14:25	14:50	N. Shaparia	IMT Nord Europe, Douai, France	Numerical simulation study on the flow and heat transfer characteristics of R1234yf flow boiling in conventional channels
14:50	15:15	E. Spricigo	Institute of Fluid-Flow Machinery, Gdansk, Poland	Multiphase SPH simulation of the moon pool
15:15	15:45	Meet & Discuss		
Multiphase Flow Conference - Session 2				
Chair:		R. Meller	Helmholtz-Zentrum Dresden-Rossendorf, Germany	
Time		Presenter	Affiliation	Title
15:45	16:10	T. Hafemann	TU Dresden, Germany	Simulation of the migration process of non-spherical particles in curved channels
16:10	16:35	A. V. Patil	SINTEF, Trondheim, Norway	A CFD-DPM model for wet granulation mechanism in a rotary drum
16:35	17:00	S. Varela	Universitat Rovira i Virgili, Tarragona, Spain	Influence of solid particles on the slug frequency of Gas-Liquid-Solid Three-Phase flows in a Long Pipeline System
17:00	...	Meet & Discuss		

Thursday, 11 November 2021				
Multiphase Flow Conference - Session 3				
Chair:		R. Rzehak	Helmholtz-Zentrum Dresden-Rossendorf, Germany	
Time		Presenter	Affiliation	Title
08:30	09:15	J. Magnaudet	Institut de Mécanique des Fluides de Toulouse, France	<u>Keynote:</u> Three-dimensional dynamics of rising bubble pairs released in line
09:15	09:40	T. Tolle	TU Darmstadt, Germany	A collocated unstructured finite volume Level Set / Front Tracking method for two-phase flows with large density ratios
09:40	10:05	J. Wang	University of Padova, Italy	Respiratory droplets dynamics: transport & low order modeling
10:05	10:30	H. Liu	Harbin Institute of Technology, China	Visual experimental investigation on vapor-liquid interface fluctuation characteristics near CHF conditions
10:30	11:00	Meet & Discuss		
Multiphase Flow Conference - Session 4				
Chair:		R. Lehnigk	Helmholtz-Zentrum Dresden-Rossendorf, Germany	
Time		Presenter	Affiliation	Title
11:00	11:25	G. Giustini	Imperial College London, UK	Modelling interfacial mass transfer on arbitrary meshes
11:25	11:50	T. Hertwig	TU Braunschweig, Germany	Modeling Condensing Flows of Humid Air in Transonic Nozzles
11:50	12:15	M. Thumfart	K1-MET GmbH, Linz, Austria	Observations of steel bubble dynamics and complex multi-phase flow in a vacuum chamber
12:15	13:15	Break for Lunch		

Thursday, 11 November 2021				
Multiphase Flow Conference - Session 5				
Chair:		I. Evdokimov	Helmholtz-Zentrum Dresden-Rossendorf, Germany	
Time	Presenter	Affiliation	Title	
13:15	13:40	M. Bösenhofer	TU Wien, Austria	A generic Euler-Euler multi-phase chemistry framework for OpenFOAM
13:40	14:05	D. Pieloth	TU Dortmund, Germany	Characterization of Sprays by Image Recognition with Neural Networks
14:05	14:30	K. Li	University of Birmingham, UK	Fluid Motion in Turbulent Flow Governed by Hidden Coherent Structures
14:30	16:00	Online "Poster" Session - Votes for the Best Poster Award		
Multiphase Flow Conference - Session 6				
Chair:		A. Moonesi	Helmholtz-Zentrum Dresden-Rossendorf, Germany	
16:00	16:25	P. Lins Barros	Ryerson University, Toronto, Canada	Numerical simulation of an aerated coaxial mixer containing xanthan gum solutions
16:25	16:50	M. Marek	Częstochowa University of Technology, Poland	Simulation of two-phase flow over complex solid surfaces - immersed boundary method approach
16:50	17:15	P. Mishra	Ryerson University, Toronto, Canada	Investigation of suspension and distribution of solid particles in Newtonian and non-Newtonian fluids with coaxial mixers through tomography and numerical modeling
17:15	17:40	E. N. dos Santos	Universidade Tecnológica Federal do Paraná, Curitiba, Brazil	Experimental analyses of the gas-liquid interface annular flow using wire-mesh sensor and conductive sensor
17:40	...	Meet & Discuss		

Friday, 12 November 2021				
Multiphase Flow Conference - Session 7				
Chair:		T. Höhne	Helmholtz-Zentrum Dresden-Rossendorf, Germany	
Time		Presenter	Affiliation	Title
08:30	09:15	S. Jakirlic	TU Darmstadt, Germany	<u>Keynote:</u> Sensitized-RANS modelling of turbulence: physical rationale and application to bubbly flows
09:15	09:40	E. Trautner	Bundeswehr University Munich, Germany	A Direct Numerical Simulation study of droplet sizes and Weber numbers in primary atomization of liquid jets
09:40	10:05	Y. Liao	Helmholtz-Zentrum Dresden-Rossendorf, Germany	Investigation on pool-scrubbing hydrodynamics with VOF interface-capturing method
10:05	10:35	Meet & Discuss		
Multiphase Flow Conference - Session 8				
Chair:		H. Hessenkemper	Helmholtz-Zentrum Dresden-Rossendorf, Germany	
Time		Presenter	Affiliation	Title
10:35	11:00	E. Frense	TU Dresden, Germany	Providing a reference configuration for the transport of a small number of bubbles in T-junction channel flow
11:00	11:25	K. Khasawneh	Pusan National University, Busan, Korea	Experimental investigation on local droplet parameters in a rod bundle geometry using a double sensor optical fiber probe
11:25	11:50	M. Norouzi	Universitat Rovira i Virgili, Tarragona, Spain	Shape development of long flexible fibers in viscous cellular flow: effects of fiber properties
11:50	12:15	A. Saraswat	Institute for Plasma Research, Gandhinagar, India	Development of compact multivariable sensor probe for two-phase detection in high-temperature lead-lithium/argon vertical columns
12:15	12:30	Closure		

Poster - Best poster will be selected by the participants

Poster - Best poster will be selected by the participants		
Baluni, S.	Friedrich-Alexander-University of Erlangen-Nuremberg, Germany	Investigation of the solids distribution in a fluidized bed with high-speed gas jets through numerical simulations
Bartocci, P.	CSIC, Instituto de Carboquimica, Zaragoza, Spain	Batch fluidized bed model in MFIX software for simulation of chemical looping combustion
Babich, A.	Helmholtz-Zentrum Dresden-Rossendorf, Germany	Motion reversals of rising electrogenerated hydrogen bubbles
Castro Bolivar, J. E.	São Carlos School of Engineering, São Carlos, Brazil	Concept of a long-wavelength flow meter for gas flow measurements and experiments
Choi, C.-J.	Seoul National University, Korea	CFD Simulation of Liquid Film Off-take in Reactor Vessel Upper Downcomer Using VOF-slip Model
Collado, F.J.	Universidad de Zaragoza, Spain	Void Fraction Thermodynamics for Subcooled Flow Boiling
Di Giusto, D.	University of Udine, Italy	Axisymmetric particle rotations in shear flow
Draw, M.	Helmholtz-Zentrum Dresden-Rossendorf, Germany	CFD Simulation of Gas-Solid-Liquid Bubble Column
Elmisaoui, S.	Mohamed IV Polytechnic University, Marrakech, Morocco	Assessment of RANS turbulence closure models for predicting the hydrodynamics of a large scale multiphase stirred reactor
Evdokimov, I.	Helmholtz-Zentrum Dresden-Rossendorf, Germany	Implementing HZDR Interactive Baseline Closure Concept Using Fuzzy Logic and Snakemake Workflows
Hessenkemper, H.	Helmholtz-Zentrum Dresden-Rossendorf, Germany	Lift force coefficient of ellipsoidal single bubbles in water
Hurtiš, R.	Comenius University, Bratislava, Slovakia	The Elder problem with reactive infiltration effects
Jadhav, A.J.	University of Birmingham, UK	Experimentally validated Eulerian-Lagrangian modelling of multiphase flow and mixing in a stirred vessel
Jansson, M.	Linköping University, Linköping, Sweden	High-speed Imaging of Column Separation in Oil-hydraulic Pipe Flow
Kardaś, D.	Institute of Fluid-Flow Machinery, Gdansk, Poland	Partially non-stationary one dimensional calculation method for a horizontal tube-side condenser
Kewalramani, R.G.	TU Bergakademie Freiberg, Germany	Aluminothermic Welding Process: 3D CFD Simulation of Solid-Liquid Phase Change and Experimental Validation using Photogrammetry

Poster - Best poster will be selected by the participants		
Khan, H.	Helmholtz-Zentrum Dresden-Rossendorf, Germany	Simulation of mass transfer in Bubble columns
Qi, W.	Chongqing University, China	CFD Investigations on Dry-out Critical Boiling in a Vertical Tube under Swing Conditions
Rahimzadeh, A.	Ryerson University, Toronto, Canada	A novel scale-up approach for gas dispersion in non-Newtonian fluids in coaxial mixer: experimental and numerical methods
Savari, C.	University of Birmingham, UK	A Lagrangian Trajectory-Wavelet Scheme for Analysis of Multiphase Flow Mixing
Schlegel, F.	Helmholtz-Zentrum Dresden-Rossendorf, Germany	Recent Advances Towards a Flow Pattern Adaptive Hybrid Multifield Two-Fluid Model
Siriano, S.	Sapienza University of Rome, Italy	Bubble motion in high-density ratio two-phase mixtures using InterIsoFoam
Swaminathan, S.	K1-MET GmbH, Linz, Austria	Euler-Euler model to investigate the performance of an industrial scale rotary kiln
Tholan, V.	Helmholtz-Zentrum Dresden-Rossendorf, Germany	Effect of the size of air bubbles when used as tracers in a turbulent jet
Torres, P.	The University of Manchester, UK	Impact of Viscoelasticity and Pulse Frequency on the Consistency of the Periodic Ejection of Liquids through Round Nozzles
Zhang, T.	Shanghai Jiao Tong University, China	Numerical verification of a morphology-adaptive hybrid model for a vane-type gas-liquid separator