

IJMF50 - PROGRAM SUMMARY

	Wednesday, August 30, 2023 Kuppelsaal, TU Wien (Resselgasse, 1040 Vienna)	CHAIRPERSON
10:30-11:10	Welcome Coffee Welcome Session	S. Balachandar; A. Soldati
11:10-11:50	Welcome address from IJMF & TU Wien: A. Soldati, S. Balachandar and C. Bauer	
11:50-12:20	<i>IJMF History</i> (A. Prosperetti)	
12:20-14:00	Lunch break Multiphase Flows, Session I	A. Prosperetti
14:00-14:20	<i>Melting of Ice</i> (D. Lohse)	
14:20-14:40	<i>Visualizing multiphase flows with X-rays</i> (T. Heindel)	
14:40-15:00	<i>The dynamics of rising spherical droplets (experiments and simulations)</i> (E. Climent)	
15:00-15:20	<i>Hydrodynamics and heat transfer around an isolated bubble in a shear flow in microgravity</i> (C. Colin)	
15:20-15:40	<i>On surface wettability effects on boiling onset to discover the profound nature of nucleation phenomena: a scientific journey</i> (M. Marengo)	
15:40-16:10	Coffee Break Multiphase Flows, Session II	V. Garbin
16:10-16:30	<i>Recent advances in kinetic-based models for polydisperse multiphase flows</i> (R. Fox)	
16:30-16:50	<i>Lagrangian statistics of dense suspensions</i> (F. Toschi)	
16:50-17:10	<i>How to improve airtanker performance?</i> (D. Legendre)	
17:10-17:30	<i>A physics-constrained machine learning model for secondary breakup in two-phase flows</i> (A. Mani)	
18:30-19:30	Buffet Dinner	
20:00-23:00	Concert at Musikverein	
	Thursday, August 31, 2023 Kuppelsaal, TU Wien (Resselgasse, 1040 Vienna)	CHAIRPERSON
	Multiphase Flows, Session III	M. Marengo
09:00-09:20	<i>Modeling of complex interface dynamics in drop-laden turbulence</i> (A. Soldati)	
09:20-09:40	<i>Enhancing VOF methods to enable sub-grid scale modeling of topology change in multiphase flow simulations</i> (O. Desjardin)	
09:40-10:00	<i>Morphology, statistics, and time dynamics of the liquid jet in coaxial two-fluid atomization</i> (N. Machicoane)	
10:00-10:20	<i>Why do some bubbles rise faster in viscoelastic liquids?</i> (G. Brenn)	
10:20-10:40	<i>Spectral analysis of turbulent fluctuations in the presence of discontinuities caused by fluid interfaces</i> (F. Risso)	T. Heindel
10:40-11:10	Coffee Break Multiphase Flows, Session IV	
11:10-11:30	<i>Simulations and characterization of complex multiphase flow</i> (G. Tryggvason)	
11:30-11:50	<i>Two-phase flow predictions using numerical simulations and machine learning approaches</i> (O. Matar)	

11:50-12:10	<i>Challenges for the CFD-modelling in the multi-fluid framework</i> (D. Lucas)	
12:10-12:30	<i>An open-source computational framework for reactive solid-liquid flows</i> (D. Marchisio)	
12:30-14:00	Lunch Break	
	Multiphase Flows, Session V	F. Zonta
14:00-14:20	<i>Beyond VOF, Edge-based interface tracking</i> (S. Zaleski)	
14:20-14:40	<i>Parametric sensitivity analysis and model-based design of experiments on a mechanistic model for dispersed liquid-liquid pipe flows</i> (P. Angeli)	
14:40-15:00	<i>Direct Numerical Simulation of fluid structure interaction problems with hydraulic fracturing and damage</i> (F. Picano)	
15:00-15:20	<i>Experiments and modeling of liquid-liquid stratified flow: stability, waves and entrainment</i> (O. Rodriguez)	
15:20-15:40	<i>Settling of magnetic rods in quiescent fluid</i> (M. Bourgoïn)	
15:40-16:10	Coffee Break	
	Multiphase Flows, Session VI	C. Casciola
16:10-16:30	<i>Modelling of fluid pseudo-turbulence and particle fluctuating motion in liquid-solid fluidized bed</i> (O. Simonin)	
16:30-16:50	<i>Particle transport on the surface of turbulent water</i> (F. Coletti)	
16:50-17:10	<i>Combined measurements of flow field and fiber motion in a coaxial jet flow</i> (R. van Hout)	
17:10-17:30	<i>Flexible fibers in turbulent channel flow</i> (C. Marchioli)	
17:30-17:50	<i>In the footsteps of Albert Einstein - Recent Advances in a kinetic theory for turbulent gas-particle flows</i> (M. Reeks)	
19:00-22:30	Social Dinner (Sky & Roofgarden at STEFFL, Kärntner Str. 19, 1010 Wien)	

	Friday, September 1, 2023 Kuppelsaal, TU Wien (Resselgasse, 1040 Vienna)	CHAIRPERSON
	Multiphase Flows, Session VII	C. Marchioli
09:00-09:20	<i>Physics-Inspired Machine Learning for Multiphase Flow</i> (S. Balachandar)	
09:20-09:40	<i>Understanding solid particle transport in a gas cyclone separator</i> (M. Sommerfeld)	
09:40-10:00	<i>Maxworthy's 1970 experiment in a computer</i> (J. Magnaudet)	
10:00-10:20	<i>Simulation and analysis of turbulent flows laden with spherical and non-spherical particles</i> (L.-P. Wang)	
10:20-10:40	<i>Bubble dynamics in yield-stress fluids</i> (V. Garbin)	
10:40-11:10	Coffee Break	
	Multiphase Flows, Session VIII	M. Villalba
11:10-11:30	<i>The Dynamics of Inertial Particles in Turbulence: role of density ratio, turbulence scales, and gravity on preferential accumulation and relative velocity</i> (A. Aliseda)	
11:30-11:50	<i>The Role of Compressibility on the Dynamics of Developed Cavitation</i> (S. Ceccio)	
11:50-12:10	<i>The nucleation process: Cavitation, Boiling, and Coupling with the Macroscale</i> (C. Casciola)	

12:10-12:30	<i>An experimental study on scaling of pool boiling critical heat flux in lunar and martian gravity</i> (P. Di Marco)	
12:30-14:00	Lunch Break	
	Multiphase Flows, Session IX	M. De Paoli
14:00-14:20	<i>Towards hybrid simulations of cavitation with resolved and sub-grid bubbles</i> (T. Colonius)	
14:20-14:40	<i>DNS of droplet-laden homogeneous shear turbulence</i> (A. Ferrante)	
14:40-15:00	<i>Ejecta clouds from high-speed jet impingement on granular beds</i> (L. Villafane)	
15:00-15:20	<i>On the clustering of settling particles: shape matters</i> (M. Villalba)	
15:20-16:00	Coffee Break	
17:00-19:00	Visit, art Gallery	