

Dispersed Two-Phase Flows 2018

224th session of Scientific and Technical Committee of SHF

17-19 September, 2018

ENSEEIHT, 2 rue Camichel, 31000 Toulouse (F)

[Program \(30082018\)](#)

Monday 17th

8h30:9h00 Welcome ceremony

Session 1: Fluidized beds

9h00:10h00 Keynote: The role of two and three-phase flows modeling in the extrapolation of industrial processes, **Jamal CHAOUKI**, *Polytech (Canada)*

10h00:10h20 Numerical & experimental investigation of electrostatic effects in heterogeneous media, **Youssef NASRO-ALLAH**, R. Ansart, O. Simonin, R. E Fox, *LGC, IMFT, INPT UPS (F)*

10h20:10h40 Simulation of a reactive fluidized bed reactor using couples CFD/DEM, **Yann DUFRESNE**, V. Moreau, A. Massi, G. Lartigue, O. Simonin, *CORIA, IMFT (F)*

10h40:11h10 Coffee Break

Session 2: Bubbly Flows (part 1)

11h10:11h30 (PBM of industrial bubble columns, **Luca GEMELLO**, F. Augier, C. Plais, D. Marchisio, *IFP Energies nouvelles, Politecnico di Torino (F & Italy)*

11h30:11h50 Sub-grid stochastic hydro-dynamic forces modelling for bubbles in homogeneous, **Z. ZHANG**, R. Zamansky, D. Legendre, *IMFT (F)*

11h50:12h10) On the effect of buoyancy on turbulent dispersion in bubbly flow, **Guillaume BOIS**, A. du Cluzeau, A. Toutant, N. Léoni, *CEA STMF (F)*

12h10:12h30 Heat transfer in bubble columns, **Elise ALMERAS**, B. Gvozdic, On U Dung, D. Van Gils, *University of Twente (Netherlands)*

12h30 14h00 Lunch & POSTER session

Session 3: Particulate Flows (part 1)

14h00:14h20 Multi-fluid approach for the numerical prediction of wall erosion in an elbow, **Wenchao YU**, Pascal Fedé, Eric Climent, Sean Sanders, *IMFT, University of Alberta (F & Canada)*

14h20:14h40 Discharge rate of gas and granular media out of a reservoir, Pierre Ruyer, **Z. ZOU**, P. Aussilous, *IRSN, CNRS, IUSTI (F)*

14h40:15h00 (Agglomeration and breakup on cyclone separators, **Oscar SGROTT**, Martin Sommerfeld, O.V. Guericke, *Universität Magdeburg (Germany)*

15h00:15h20 Volume averaged technique for the simulation of particulate flows, **Jean-Lou PIERSON**, F. Audard, H. Bouteloup, *IFPEN (F)*

15h20:15h40 Towards gas-particles simulations of cavity phenomena with an unresolved CFD-DEM method, **Edouard IZARD**, F. Romano, *ARCELOR MITTAL (F)*

15h40:16h00 Coffee Break

Session 4: Droplet Flows (part 1)

16h00:16h20 Gas-liquid flow regimes in a rectangular millimetric channel and liquid fragmentation at the channel exit, **Adrien BOLCAIN**, P. Ern, C. Colin, V. Ciais, *IMFT, Université de Toulouse, (F)*

16h20:16h40 Overview of spray modeling and wall condensation in the Neptune _CFD for nuclear safety, **Stéphane MIMOUNI**, *EDF (F)*

16h40:17h00 Eulerian-Lagrangian Simulation of evaporating sprays including experimental and modelling uncertainties, **Paolo ERRANTE**, C. Corre, S. Makhlof, *LMFA, Ecole Centrale de Lyon, (F)*

17h00:17h20 Water round jet atomization in irrigation, F. Felis, **Séverine TOMAS**, A. Vallet, M. Amielh, F. Anselmet, *LGC, IRSTEA, IRPHE (F)*

17h20:17h40 Turbulence effect on dispersed phase dynamics and distribution in dispersed gas-liquid and liquid-liquid flows, **Jamel CHAHED**, G. Bellakhel, A. Aouadi, M. Rezig, *INIT (Tunisia)*

Tuesday 18th

8h00: 8h40 Welcome coffee

Session 5: Particulate Flows (part 2)

8h40:9h00 A Lagrangian accurate numerical model for high-density ratio Two phase mixtures, **Thomas FONTY**, M. Ferrand, A. Leroy, A. Jomy, D. Violeau, *EDF (F)*

9h00:9h20 Dynamics of flexible fibers in turbulent channel flow, **Cristian MARCHIOLI**, D. Dotto, *University of Udine (Italy)*

9h20:9h40 Analysis of the enhanced settling rate of inertial particles in homogeneous turbulence using PDF-based models, **Christopher P. STAFFORD**, D.C. Swailes, N. Chakraborty, M.W. Reeks, *School of Engineering, Newcastle University (UK)*

9h40:10h00 Lagrangian Point Force regularization for dispersed two-phase flows, **Jean-François POUSTIS**, J.M. Senoner, D. Zuzio, Ph. Villedieu, *ONERA / DMPE (F)*

10h00:10h20 Response of a cylinder free to move to bubble-induced agitation, **Clément TOUPOINT**, V. Roig, P. Ern, B. Rim, L. Gamete, *IMFT, IFP Energies nouvelles, (F)*

10h20:10h40 Turbulence modulation by inertial particles in a swirling flow, **Romain VOLK**, J. Vassaire, M. Bourgoïn, *University of Lyon, ENS de Lyon (F)*

10h40:11h10 Coffee Break

Session 6: Dynamics & mechanisms at local scale

11h10:11h30 Melting of a solid surface by a hot liquid jet, **Alexandre LECOANET**, Nicolas Rimbart, Célien Zacharie, M. Hadj Achour, F. Payot, M. Gradeck, *LEMETA, CEA (F)*

11h30:11h50 Hydrodynamics and Conjugate Mass Transfer from a Translating Spherical Droplet in a Continuous Phase, **Azeddine RACHIH**, S. Charton, D. Legendre, E. Climent, *CEA DEN/IMFT(F)*

11h50:12h10 Coalescence of surfactant-laden drops by Phase Field Method, **Giovanni SOLIGO**, A. Roccon, A. Soldati, *Technische Universität Wien, University of Udine (Italy & Austria)*

12h10:12h30 Experimental study of reactive mass transfer around a bubble rising in a confined cell, **Francisco FELIS**, N. Dietrich, A.M. Billet, F. Strassl, F. Strassl, S. Herres-Pawlis, V. Roig, K. Loubière, *FERMaT, IMFT, LGC, RWTH Aachen University (F & Germany)*

12h30:14h00 Lunch & POSTER session

Session 7: Numerical developments

14h00:14h20 Simulating Fluid-structure Interaction in 2 phase Flows with NEPTUNE_CFD, **William BENGUIGUI**, J. Laviéville, S. Mimouni, E. Longatte, *IMSIA, UMR, ENSTA, EDF R & D (F)*

14h20:14h40 A three-field model with the two-group interfacial area transport equation model for simulating cap-bubbly and churn turbulent flows, **E KUIDJO**, M.G. Rodio, R. Abgrall, P. Sagaut, *CEA DEN STMF, University of Zürich, Marseille University, (F & Switzerland)*

14h40:15h00 Multi-Phase flow with two velocities modelling for jet atomization simulations, **Pierre CORDESSE**, M. Massot, A. Murrone, *Ecole Polytechnique, ONERA (F)*

15h00:15h20 Geometrical properties of two-phase Flows: surface tension estimation through interface 3D reconstruction and modeling elements for a diffuse-interface model containing capillary effects, **Ruben DI BATTISTA**, M. Essadki, M. Massot, S. de Chaisemartin, *Ecole Polytechnique, IFPEen, CEA (F)*

15h20:15h40 Evaluation of Level Set reinitialisation algorithms for phase change simulation, **Guillaume SAHUT**, G. Ghigliotti, Ph. Marty, G. Blarac, *Univ. Grenoble Alpes, CNRS, Grenoble INP, LEGI (F)*

15h40:16h10 Coffee Break

Session 8: Bubbly Flows (part 2)

16h10:16h30 X-ray imaging of high temperature furnace applied to glass melting, **Franck PIGEONNEAU**, D. Boloré, M. Gibilaro, L. Massot, E. Cid, P. Chamelot, O. Masbernat *St-Gobain, LGC, MINES ParisTech (F)*

16h30:16h50 Oscillations and mass transfer on bubble swarms, **Manuel TABORDA**, M. Muniz, M. Sommerfield, *University of Magdeburg (Germany)*

16h50:17h10 Direct Numerical Simulation of boiling flows using Local Front Reconstruction Method, **A.H. RAJKOTWALA**, C. Van der Geld, J.G Kuerten, A.J. Peters, *Eindhoven University of Technology (Netherlands)*

17h10:17h30 Stability of Taylor bubbles in confined highly porous media, **Valérie VIDAL**, M. Serres, M. L Zanota, T. Maison, *ENS LYON (F)*

17h30:17h50 Turbulence interaction with large drops, **Giovanni SOLIGO**, A. Roccon, A. Soldati, *Technische Universität Wien, University of Udine (Italy & Austria)*

19h30 Diner - Rowing Club, Toulouse

Wednesday 19th

8h30:8h45 Welcome Coffee

Session 9: Bubbly Flows (part 3)

8h45:9h05 Coalescence in a swarm of confined high re-bubbles rising in a thin-gap cell, **J.RUIZ-RUZ**, Bolanos-Jimenéz, P. Ern, V. Roig, *University of Jaen, IMFT (Spain & F)*

9h05:9h25 Characterization of bubbles clusters in bubble column, **Yann MEZUI**, A. Cartellier, M. Obligado, *Université Grenoble Alpes, CNRS, Grenoble INP, LEGI (F)*

9h25:9h45 Assessment of multi-scale two-fluid approach by simulating the emptying of a bottle, **Samuel MER**, O. Praud, V. Roig, H. Neau, N. Méricoux, J. Magnaudet, *IMFT, EDF R&D (F)*

9h45:10h05 A new technic for Euler-Lagrange simulations of bubbly flows in which bubble wakes are resolved, **Florian Le Roy de Bonneville**, R. Zamansky, F. Risso, A. Boulin, J.F. Haquet, *IMFT, CEA Cadarache (F)*

10h05:10h40 Coffee Break

Session 10: Droplet Flows (part 2)

10h40:11h00 Hydrodynamics and Conjugate Mass Transfer from a Translating Spherical Droplet in a Continuous Phase, **Azeddine Rachih**, Sophie Charton, Dominique Legendre, Eric Climent, *CEA, DEN, IMFT, Université de Toulouse, CNRS (F)*

11h00:11h20 Yield stress water-entry, **Anselmo PEREIRA**, L. Sardo, R.Castellani, R. Valette, Romain Castellani, Elie Hachem, *MINES ParisTech, PSL Research University, CEMEF, CNRS UMR 7635 (F)*

11h20:11h40 Dispersed Droplets crossing a Liquid-Liquid Interface, **Hassan EL ITAWI**, B. Lalanne, O. Masbernat, E. Cid, A. Pontier, G. Massiera, N. Le Sauze, *LGC, L2C, Université de Montpellier(F)*

11h40:12h00 Experimental μ -LIF studies of mass transfer in liquid-liquid plug flow in micro channels, **Hashi WEHELIYE**, D. Tsaoulidis, P. Angeli, *University College of London (UK)*

12h00:13h10 Lunch & POSTER session

Session 11: Particulate Flows (part 3)

13h10:13h30 A stochastic model for small rodes in homogenous isotropic turbulence, **Lorenzo CAMPANA**, M. Bossy, J.P. Minier, *INRIA, EDF R&D MFEE (F)*

13h30:13h50 Is the kinetic equation for turbulent gas-particle flows ill-posed? **Michael W REEKS**, D. Swails, A. Bragg, *Newcastle University, Duke University, Imperial college (UK)*

13h50:14h10 Self-conditioned LES description of dispersed Two-phase flows, **David MERCIER**, A. Vie, M. Massot, *CNRS, Centrale Supélec (F)*

14h10:14h30 Aerosol scavenging by droplets: impact of rear capture for low inertia aerosol and moderate to transitional Reynolds number, **Emmanuel BELUT**, *INRS (F)*

14h30:14h50 Particle-resolved numerical simulations of the gas-solid heat transfer in a dense regime: fluctuating gas velocity-temperature correlation induced by the presence of the particles, Elhadji I. Thiam, **Enrica Masi**, Eric Climent, Olivier Simonin, Stéphane Vincent, *IMFT, Université Paris-Est Marne-La-Valle (F)*

14h50:15h10 Coffee Break

Session 12: Particulate Flows (part 4)

15h10:15h30 Surfacing of micro swimmers in free surface turbulence, **Harshit BHATIA**, C. Marchioli, A. Soldati, *UDINE University, TU Wien (Italy & Austria)*

15h30:15h50 Numerical simulations of short- and long rang interaction forces in gas-particle flows, **Athanasios BOUTSIKAKIS**, P. Fede, C. Montilla, O. Simonin, *IMFT, LGC (F)*

15h50:16h10 Settling velocity alteration by turbulence: what can we learn from simultaneous flow/particle measurements? **David DE SOUZA**, R. Monchaux, A. Dejoan, *ENSTA PARIS-TECH, CNRS, CEA, EDF, Université Paris-Saclay (F)*

16h10:16h20 Closure speech and end of conference

LIST OF POSTERS

- ° Electrical resistivity tomography used to characterize bubble distribution in semi-industrial MBR, Marion ALLIET, E. Suard, R. Clément, Y. Fayolle, C. Albasi, S. Gillot, *Irstea UR HBAN, UR REVERSAAL, University of Toulouse, CNRS INPT UPS (F)*
- ° Image reconstruction algorithms for ECVT systems: Application for fluidized bed configurations, Carlos MONTILLA, E. Cid, R. Ansart, O. Simonin, *LGC, University of Toulouse, INPT, UPS (F)*
- ° Modelling of dispersion forces and Bubble-induced Turbulence in turbulent bubbly up-flow from direct Numerical Simulation, Antoine du CLUZEAU, G. Bois, A. Toutant, N. Léoni, *CEA-DEN, CNRS (F)*
- ° Bulles et microbulles pour moyens d'essais en hydrodynamique, Yves LECOFFRE, G. Maj, *HYDEO France (F)*
- ° M2: a novel interferometric optical fiber sensor for 2 phase flow characterization, Anthony LEFEBVRE, N. Zuanon, B. Maze, S. Gluck, *A2 Photonic Sensors/INP Minatec (F) - Exhibitor*
- ° Study of an air-lift under depression, Mahmoud EL HAJEM, A Haasan, J.Y. Champagne, *INSA LYON (F)*

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Écoulements Diphasiques Dispersés DTPF - DISPERSED TWO-PHASE FLOWS

Toulouse, 17-19 September 2018

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