

International Research Network WORKSHOP University of
Bordeaux (<https://irn-hydrobio.cnrs.fr>)



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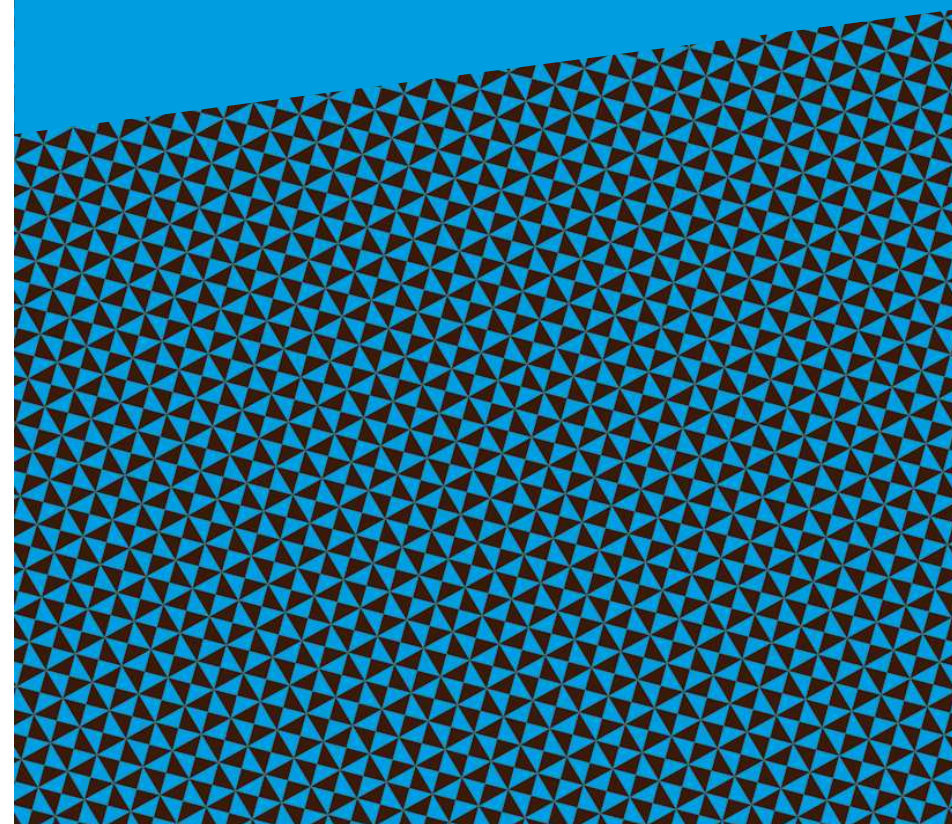
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For more information: <https://hydrobio2023.sciencesconf.org/>

2nd Workshop

Hydrodynamics at small scales: from soft
matter to bioengineering

June 14-16, 2023
Amphitheater of Building B6
University of Bordeaux



Workshop Agenda

Wednesday, 14th of June 2023

9:00 am to 9:30 am	Opening ceremonies: Welcome address by organizers, a few words from the an official of the University of Bordeaux.
9:30 am to 12:20 am	Particles, CHAIR : D. Fuster
9:30 am to 9:50 am	Lift at low Reynolds number (Thomas Salez)
9:50 am to 10:10 am	The added mass effect on particulate Rayleigh-Benard instability (Saad Raza, Silvia Hirata , Enrico Calzavarini)
10:10 am to 10:30 am	Microscale liquid flow driven by the capillary interaction with an isolated micro-particle (Harunori Yoshikawa , Georg Dietze, Farzam Zoueshtiagh, Lizhong Mu, Ichiro Ueno)
10:30 am to 11:00 am	COFFEE BREAK
11:00 am to 12:20 am	Drops and bubbles I, CHAIR : G. Biswas
11:00 am to 11:20 am	On the jetting direction during the collapse of a bubble in contact with a wall (Daniel Fuster , Mandeep Saini , Erwan Tanné, Stéphane Zaleski, Michel Arrigoni)
11:20 am to 11:40 am	Understanding the Impact Dynamics of Emulsions and Air-in-Liquid Compound Droplets (Susmita Dash , Deekshith Naidu, Srijan Kumar)
11:40 am to 12:00 am	Experimental Investigation of Bubble Rising Through Liquid-Liquid Interface in Presence and Absence of Surfactant (Bahni Ray , Rabbani Ghulam)
12:00 am to 12:20 pm	Three Phase Systems under Electric Field: From 'Kissing' Droplets to Threading Glass beads (Dipankar Bandyopadhyay)
12:20 pm to 02:00 pm	LUNCH BREAK

02:00 pm to 03:40 pm	Drops and bubbles II, CHAIR : H. Kellay
02:00 pm to 02:20 pm	Dynamics of Collision of Two Arbitrarily Placed Evaporating Drops (Gautam Biswas , Ashwani Pal)
02:20 pm to 02:40 pm	Droplet size distribution using in-line holography and machine learning (Kirti Sahu)
02:40 pm to 03:00 pm	Droplet growth in warm cumulus clouds (Anubhab Roy)
03:00 pm to 03:20 pm	Hydrodynamics of microlayer formation (Mandeep Saini , Xiangbin Chen, Stéphane Zaleski, Daniel Fuster)
03:20 pm to 03:40 pm	Light responsive liquid-liquid phase separation in microfluidic droplets (Nicolas Martin , Zi Lin, Thomas Beneyton, Jean-Christophe Baret)
03:40 pm to 04:10 pm	COFFEE BREAK and POSTER SESSION
04:10 pm to 06:10 pm	Hydrodynamics I, CHAIR : K. Sahu
04:10 pm to 04:30 pm	Viscocapillary Lift Force at the Fluid Interface (Aditya Jha , Yacine Amarouchene, Thomas Salez)
04:30 pm to 04:50 pm	Hydrodynamic dispersion in porous media enhances reaction in spherical fronts (Pratyaksh Karan , Uddipta Ghosh, Yves Meheust, Tanguy Le Borgne)
04:50 pm to 05:10 pm	activity induced rigidity of liquid droplets (Hamid Kellay)
05:10 pm to 05:30 pm	Self-organisation and rheology of phoretic suspensions in shear flows (Prathmesh Vinze , Sebastien Michelin)
05:30 pm to 05:50 pm	Jet from a very large surface gravity wave (Ratul Dasgupta , Lohit Kayal)
05:50 pm to 06:10 pm	The spread of a thin film and hydraulic jump formation (Roger Khayat)
07:30 pm	Dinner (for invited fellows)

Workshop Agenda

Thursday, 15th June 2023

9:00 am to 10:40 pm	Electric/Acoustic fields, <u>CHAIR: J.P Delville</u>
9:00 am to 9:20 am	Electrophoresis in complex fluids: applications to separation processes (<u>Uddipta Ghosh</u>)
9:20 am to 9:40 am	Acoustical tweezers: a new tool to probe soft and biological matter (<u>Diego Baresch</u>)
9:40 am to 10:00 am	Asymmetric streaming induced by large amplitude vibrations near a sharp obstacle (<u>Philippe Brunet</u>)
10:00 am to 10:20 am	(<u>Online</u>) Ultrasound resonance in a coflow exposed to bulk acoustic waves (<u>Ashis Sen</u> , Sazid Zamal Hoque)
10:20 am to 10:40 am	An experimental study on the role of heat generation on the morphology and microstructure in thin-layer electrodeposition, Farzam Zoueshtiagh
10:40 am to 11:10 am	COFFEE BREAK and POSTER SESSION
11:10 am to 12:50 pm	Biofluids, <u>CHAIR : C. Misbah</u>
11:10 am to 11:30 am	Mechano-Physical Responsiveness of Deformable Microchannels – How the Flow Medium Matters (<u>Suman Chakraborty</u> , Sampad Laha)

11:30 am to 11:50 am	Confinement-triggered non-trivial dynamics of red blood cells under conjugate interplay of electric field and Poiseuille flow (<u>Somnath Santra</u> , Alexander Farutin, Chaouqi Misbah)
11:50 am to 12:10 pm	Rheology of soft attractive microcapsules (<u>Hugues Bodique</u> , Clement de Loubens, Mehdi Maleki)
12:10 am to 12:30 pm	A Cahn-Hilliard-Stokes model for cell aggregates dynamics (<u>Giuseppe Sciumè</u>)
12:30 pm to 12:50 am	Direct Numerical Simulation of Cavitation Inside Blood Vessels (<u>Ahmed Basil Kottilingal</u> , Stéphane Zaleski)
12:50 pm to 02:00 pm	Lunch Break
2:00 pm to 05:30 pm with a coffee break from 3:30 pm to 4:00pm	Visits of 2 labs: I2M and LOMA
7:30 pm	Dinner (for invited fellows)

Friday, 16th June 2023

9:00 am to 11:00 am	Hydrodynamics II, <u>CHAIR: D. Bandyopadhyay</u>
09:00 am to 09:20 am	Light-induced interface instability: optical Taylor cones/jets & breakup, Antoine Girot, Raphael Saiseau, Julien Petit, Hamza Chraïbi, Thomas Guerin, Ulysse Delabre, <u>Jean-Pierre Delville</u>
09:20 am to 09:40 am	Coupled electrohydrodynamic transport in rough fractures: a generalized lubrication theory Mainendra K. Dewangan, <u>Uddipta Ghosh</u> , Tanguy LeBorgne and Yves Meheust
9:40 am to 10:00 am	A second-order coupling of Carman-Koseny expression with Navier-Stokes equations for modelling fluid-structure interactions (<u>S Venkatesan Diwakar</u>)
10:00 am to 10:20 am	Thin fluid film over a spherical surface: Contact line driven fingering instability (Ananthan Mohan, <u>Gaurav Tomar</u>)
10:20 am to 10:40 am	The nature of branching in electrohydrodynamic instability and its comparison with Rayleigh Taylor instability of a viscoelastic fluid (<u>B. Dinesh</u> , R. Narayanan)
10:40 am to 11:00 am	Grid dependent collapse in Volume of Fluid simulations of atomisation of a dense pulsating jet: A solution with the Manifold Death method (Yash Kulkarni, Raphael Viliers, Cesar Pairetti, Marco Crialessi-Esposito, Stéphane Popinet, Stéphane Zaleski)

11:00 am to 11:30 am	COFFEE BREAK and POSTER SESSION
11:30 am to 12:30 pm	Biofluids II, <u>CHAIR: S. Chakraborty</u>
11:30 am to 11:50 am	Hydrodynamics of Droplet Based Lysozyme Protein Crystal Growth (<u>Pradipta Panigrahi</u>)
11:50 am to 12:10 pm	Red Blood Cell Dependent Calcium Dynamics from Endothelial Cells (<u>Ananta Kumar Nayak</u> , Sovan Lal Das, Chauqi Misbah)
12:10 pm to 12:30 pm	Universal spreading dynamics of blood through porous matrix: Effect of cellular aggregation and limited sample volume in the micro-porous domain (<u>Sampad Laha</u> , Shantimoy Kar, Suman Chakraborty)
12:30 pm to 2:00 pm	Lunch Break
2:00 pm to 4:00 pm	<u>Round table : discussions with S. Kaveri, Director of the CNRS Office in India</u>
4:00 pm	<u>End of the workshop</u>