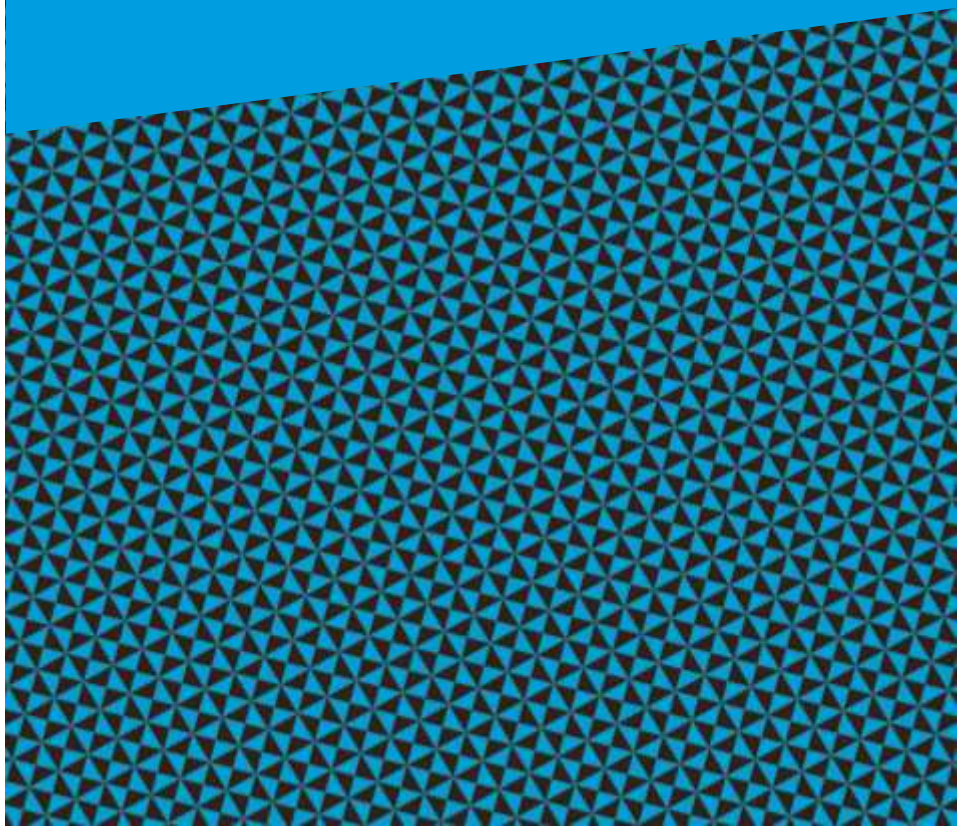
International Research Network WORKSHOP University of Bordeaux (https://irn-hydrobio.cnrs.fr)

2nd Workshop

Hydrodynamics at small scales: from soft matter to bioengineering

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



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

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	Self-organisation and rheology of phoretic suspensions in shear flows (Prathmesh Vinze, Sebastien Michelin)
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 Collison 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	Jet from a very large surface gravity wave (Ratul Dasgupta, Lohit Kayal)
05:30 pm to 05:50 pm	The spread of a thin film and hydraulic jump formation (Roger Khayat)
07:30 pm	**Dinner (for invited fellows)**

Workshop Agenda

Thurday, 15th June 2023

9:00 am to 10:40 pm	**Electric/Acoustic fields, CHAIR: J.P Delville**
9:00 am to 9:20 am	Electrophoresis in complex fluids: applications to separation processes (Uddipta Ghosh)
9:20 am to 9:40 am	Acoustical tweezers: a new tool to probe soft and biological matter (Diego Baresch)
9:40 am to 10:00 am	(Online) Asymmetric streaming induced by large amplitude vibrations near a sharp obstacle (Philippe Brunet)
10:00 am to 10:20 am	(Online) Ultrasound resonance in a coflow exposed to bulk acoustic waves (Ashis Sen, Sazid Zamal Hoque)
10:20 am to 10:40 am	Sound velocity and acoustic impedance measured with picosecond laser-ultrasonics in a microfluidic channel. (Bertrand Audoin, François Bruno, Jacques Leng)
10:40 am to 11:10 am	**COFFEE BREAK and POSTER SESSION**
11:10 am to 12:50 pm	**Biofluids, CHAIR : S. Chakraborty**
11:10 am to 11:30 am	Mechano-Physical Responsiveness of Deformable Microchannels – How the Flow Medium Matters (Suman Chakraborty, 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 (Somnath Santra, Alexander Farutin, Chaouqi Misbah)
11:50 am to 12:10 pm	A Cahn-Hilliard-Stokes model for cell aggregates dynamics (Giuseppe Sciumè)
12:10 pm to 12:30 am	Direct Numerical Simulation of Cavitation Inside Blood Vessels (Ahmed Basil Kottilingal, Stéphane Zaleski)
12:30 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 10:40 am	Hydrodynamics II, CHAIR: D. Bandyopadhyay
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, Jean-Pierre Delville
9:20 am to 9:40 am	A second-order coupling of Carman-Koseny expression with Navier-Stokes equations for modelling fluid-structure interactions (S Venkatesan Diwakar)
9:40 am to 10:00 am	Thin fluid film over a spherical surface: Contact line driven fingering instability (Ananthan Mohan, Gaurav Tomar)
10:00 am to 10:20 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)
10:20 am to 11:00 am	**COFFEE BREAK and POSTER SESSION**

11:00 am to 12:00 am	Biofluids II, CHAIR: C. Misbah
11:00 am to 11:20 am	On-demand collective and cooperative dynamics of dense active systems, L. Alvarez, E. Sesé, D. Levis, Pagonabarraga, L. Isa
11:20 am to 11:40 am	Hydrodynamics of Droplet Based Lysozyme Protein Crystal Growth (Pradipta Panigrahi)
11:40 am to 12:00 pm	Red Blood Cell Dependent Calcium Dynamics from Endothelial Cells (Ananta Kumar Nayak, Sovan Lal Das, Chaouqi Misbah)
12:00 pm to 12:20 pm	Universal spreading dynamics of blood through porous matrix: Effect of cellular aggregation and limited sample volume in the micro-porous domain (Sampad Laha, Shantimoy Kar, Suman Chakraborty)
12:20 pm to 2:00 pm	**Lunch Break**
2:00 pm to 4:00 pm	**Closure session and round table : discussions with S. Kaveri, Director of the CNRS Office in India**
4:00 pm	**End of the workshop**