



# Fluid dynamics meets synchrotron X-ray high-speed imaging

ESRF Auditorium - Grenoble - France

21 - 22 March 2024



THURSDAY 21 MARCH		
08:15 - 09:00	Registration and Welcome coffee	ESRF Central Building Entrance Hall
SESSION 1		
09:00-09:30	Welcome and Introduction to EBS ESRF	<b>Veijo Honkimaki</b> ESRF
09:30-10:20	Invited Talk - To see what cannot be seen	<b>Michel Versluis</b> University of Twente
COFFEE BREAK		
10:35 – 11:25	Invited Talk: Application of x-ray imaging to the characterization of high-speed cavitating flows	<b>Olivier Coutier-Delgosha</b> Virginia Tech
11:25 – 11:45	Poster pitch 1	
LUNCH BREAK		
SESSION 2		
13:15 – 14:05	Invited Talk: Concentration Measurements in Dense Particle Clouds Induced by Jet Impingement on a Granular Substrate	<b>Laura Villafañe Roca</b> University of Illinois at Urbana-Champaign
Contributed talks on Cavitation and Shock dynamics Chair: Outi Supponen		
14:10 – 14:25	Pulsed power driven exploding wires: a new approach for shockwave experiments in arbitrary geometries	<b>Jergus Strucka</b> Imperial College London
14:25 – 14:40	Underwater shock waves interacting with antibubbles serving as liquid payload carriers	<b>Guillaume Bokman</b> ETH Zurich
14:40 – 14:55	X-ray visualization of a shock-wave-induced cavitation cloud inside liquid perfluorohexane droplets	<b>Samuele Fiorini</b> ETH Zurich
14:55 – 15:10	Unravelling bubbles formation and bubbles dynamics in pulsed laser ablation in liquids	<b>Vito Coviello</b> Università di Padova
14:10 – 15:25	Flow instabilities in cavitating microchannels	<b>Matevz Dular</b> University of Ljubljana
COFFEE BREAK AND GROUP PHOTO		
SESSION 3: Contributed talks on Breakup, Coalescence and Jetting processes Chair: Nathanaël Machicoane		
15:40 – 15:55	Shape mode-induced repeated jetting of ultrasound-driven microbubbles	<b>Marco Cattaneo</b> ETH Zurich
15:55 – 16:10	Synchrotron x-ray phase-contrast imaging of ultrasonic drop atomization	<b>Anunay Prasanna</b> ETH Zurich
16:10 – 16:25	High-speed synchrotron x-ray analysis of non-contact jetting process	<b>Jesper Sallander</b> Mycronic AB
16:25 – 16:40	High-speed spray formation probed by Synchrotron X-ray	<b>Santanu Kumar Sahoo</b> CNRS
16:40 – 16:55	Poster pitch 2	
16:55 – 18:55	ESRF tours and Beamline visit at ID19 (2 X 50 min)	Meeting point: ESRF Central Building Entrance Hall
19:00-21:00	Poster session (poster prize) + cheese and wine evening event	ESRF Central Building Entrance Hall
FRIDAY 22 MARCH		
08:45-09:00	Casual coffee and discussion on ESRF access	
09:00 – 09:50	Invited Talk: Multiphase flows from swarming bubbles to schooling fish: from the advancement of optic measurements to data assimilation	<b>Rui Ni</b> Johns Hopkins University
SESSION 3: Contributed talks on Instrumentation and Techniques Chair: Alexander Rack		
09:50 – 10:05	Multiphase Flow Studies at the APS 7-BM Beamline	<b>Alan Kastengren</b> Argonne National Laboratory

<b>10:05 – 10:20</b>	Advances X-Ray Techniques for Fluid Dynamics at Lab and Synchrotron Scale	<b>Simo Mäkiharju</b> University of California Berkley
<b>10:20 – 10:35</b>	X-ray multi-projection imaging: enabling fast volumetric information for fluid dynamics	<b>Pablo Villanueva-Perez</b> Lund University

**COFFEE BREAK**

**SESSION 4: Contributed talks on Flow in porous media and Granular system**  
Chair: Marie-Jean Thoraval

<b>10:50 – 11:05</b>	4D imaging of Haines jumps with sub-millisecond temporal resolution	<b>Dag Werner Breiby</b> Norwegian University of Science & Technology
<b>11:05 - 11:20</b>	4D X-ray velocimetry of multiphase flows in porous media	<b>Tom Bultreys</b> Ghent University
<b>11:20 – 11:35</b>	Dynamics of Binary Granular Materials: Unraveling the Phenomena of Rising Granular Bubbles and Splitting Granular Droplets	<b>Jens Metzger</b> ETH Zurich
<b>11:35 – 11:50</b>	X-ray analysis of air bubble rise in granular suspension: Application to concrete de-airing	<b>Bastian Strybny</b> Institute of Building Materials Science

<b>11:50 – 12:00</b>	Closing remarks take-home message
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**LUNCH BREAK**