S4 - Cavitation and Multiphase Flows

Organizers: Yuka Iga, Mohamed Farhat, Shin-ichi Tsuda

The session Cavitation and Multiphase flows of ISROMAC 18 aims at gathering, exchanging and sharing information between researchers and engineers about experimental and numerical basic research about cavitation, bubbly flows, droplet flows and free surface flows. Proposals of new numerical and mathematical models, new measuring techniques and newly found characteristics about cavitation and multiphase flows are welcome.

Non-exhaustive list of suggested topics

- Sheet and cloud cavitation
- Vortex cavitation
- Cavitation erosion
- Bubbles
- Droplets
- Free surface flows
- New experimental methods
- Numerical models and methods

Organizers

Yuka Iga is working as a professor at Institute of Fluid Science, Tohoku University, Japan. She received B. S., M.S. and Phd. Eng. from Tohoku University. Her main research interests are cavitation and phase change, especially in cavitation instabilities in liquid propellant rocket turbopump and thermodynamic effects of cavitation in cryogenic fluid.

Mohamed Farhat is Senior Scientist at EPFL-LMH and Head of the Cavitation Research Group. He graduated at École Nationale Supérieure d'Hydraulique et de Mécanique de Grenoble (France) and completed in 1994 a Ph.D. thesis on Cavitation at EPFL Laboratory for Hydraulic Machines. His research is mainly focused on Cavitation and Multiphase Flows, Fluid-Structure Interaction, Free Surface Flows, Hydrodynamics of Turbines and Pumps, Bioreactors and Hemodynamics.

Shin-ichi Tsuda is an associate professor in Department of Mechanical Engineering at Kyushu University, Japan. He received B.S. and M.S. from Tohoku University, and Phd. Eng. from the University of Tokyo. His main research interest is multi-scale modeling of cavitation in water and in cryogenic fluids, employing molecular dynamics simulation on bubble nucleation-growth or collapse and CFD simulation around simple bodies. Also he has engaged in *ab-initio* evaluation of thermophysical properties of liquid rocket propellant such as hydrogen and oxygen.

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