

Program at a Glance

Topics			
T01	Nucleation and Inception	T08	Cavitation in Marine Propeller
T02	Bubble Dynamics and Bubbly Flows	T09	Cavitation in Fluid Machinery
T03	Advanced Computational Modeling	T10	Cavitation Induced Noise and Vibration
T04	Sheet and Cloud Cavitation	T11	Cavitation Control and Supression
T05	Tip Vortex Cavitation	T12	Cavitation in Biology and Bioengineering
T06	Supercavitation	T13	Sonochemistry and Sonoluminescence
T07	Cavitation Erosion	T14	Advanced Measurement Techniques

Time(KST)	Day 1 (May 10)							
	Z1	Z2	Z3	Z4	Z5	Z6	Z7	Z8
10:00 PM	CAV2021 Opening, Announcement							
10:05 PM								
10:10 PM								
10:15 PM								
10:20 PM								
10:25 PM								
10:30 PM	Keynote Speech (I) Computations of Compressible Cavitating Flows: Numerical Methods and Engineering Applications Prof. Chongam Kim (Seoul National University, Korea)							
10:35 PM								
10:40 PM								
10:45 PM								
10:50 PM								
10:55 PM								
11:00 PM								
11:05 PM								
11:10 PM	Break							
11:15 PM								
11:20 PM	Break							
11:25 PM								
11:30 PM	T11-02 P00131	T02-02 P00017	T13-02 P00097	T03-02 P00024	T09-02 P00035	T06-02 P00009	T07-02 P00021	T08-02 P00019
11:35 PM								
11:40 PM	Break							
11:45 PM								
11:50 PM	Break							
11:55 PM								
12:00 AM	Break							
12:05 AM								
12:10 AM	T11-04 P00211	T02-04 P00031	T13-04 P00145	T04-02 P00022	T09-04 P00040	T06-04 P00045	T07-04 P00042	T08-04 P00033
12:15 AM								
12:20 AM	Break							
12:25 AM								
12:30 AM	Break							

Program at a Glance

Time(KST)	Day 4 (May 13)							
	Z1	Z2	Z3	Z4	Z5	Z6	Z7	Z8
10:00 PM	T03-15	T02-23	T02-24	T04-09	T05-07	T10-05	T12-07	T09-13
10:05 PM	P00171	P00200	P00205	P00105	P00174	P00138	P00148	P00096
10:10 PM								
10:15 PM	T03-16	T02-25	T02-26	T04-10	T05-08	T10-06	T12-08	T09-14
10:20 PM	P00191	P00215	P00221	P00107	P00175	P00023	P00172	P00119
10:25 PM								
10:30 PM	Break							
10:35 PM	Keynote Speech (IV) Cavitation Instabilities of Pumps: From Linear Analysis to Experimental Observations Prof. Satoshi Watanabe (Kyushu University, Japan)							
10:40 PM								
10:45 PM								
10:50 PM								
10:55 PM								
11:00 PM								
11:05 PM								
11:10 PM								
11:15 PM	Keynote Speech (IV) Cavitation Instabilities of Pumps: From Linear Analysis to Experimental Observations Prof. Satoshi Watanabe (Kyushu University, Japan)							
11:20 PM								
11:25 PM								
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11:35 PM								
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11:45 PM								
11:50 PM								
11:55 PM	Break							
12:00 AM	Keynote Speech (IV) Cavitation Instabilities of Pumps: From Linear Analysis to Experimental Observations Prof. Satoshi Watanabe (Kyushu University, Japan)							
12:05 AM								
12:10 AM								
12:15 AM								
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12:25 AM								
12:30 AM								
12:35 AM								

※ Subject to change.

※ KST = UTC+09:00

Time Zones during the Symposium

Location	Opening / Live Discussion
Daejeon, Korea	10:00 PM
Europe	3:00 PM
Sydney, Australia	11:00 PM
Los Angeles, USA	6:00 AM
Mexico City, Mexico	8:00 AM
New York, USA	9:00 AM

Schedule for Live Discussion of CAV2021

Presentation Code	Paper No.	Paper Title	Authors	S.Date	S.Zoom	Topic	Topic order	Presentation time
1021-T11-01	P00070	Control of Laser-induced Cavity Bubble behind the Metallic Sinking Sphere	Kyuseong Choi*, Nayoung Kim, Guwon Seon, Wontae Hwang, Hyungmin Park (Seoul National University)	Day 1 (May 10)	Zoom 1	T11	01	11:25 PM-11:40 PM
1021-T11-02	P00131	Delay and Mitigation of Cavitation of Impeller using Superhydrophilic Surface	Hongseok Choi, Hyungmin Park* (Seoul National University), Seungtae Oh, Kyoungwan Song, Young-Su Ko, Younsuk Nam, Choongyeop Lee (Kyunghee University)	Day 1 (May 10)	Zoom 1	T11	02	11:40 PM-11:55 PM
1021-T11-03	P00195	Numerical Study on the Evolution Characteristics of Cavitating Flow Field around a Hydrofoil with Vortex Generator	Xuemei Li, Tiezhi Sun*, Di Zhang, Guiyong Zhang (Dalian University of Technology)	Day 1 (May 10)	Zoom 1	T11	03	12:05 AM-12:20 AM
1021-T11-04	P00211	Fuel Temperature Effect on a Cavitation-Suppressing Injector Design for a Heavy-Duty Diesel Injector Operating with Gasoline	Roberto Torelli*, Sibendu Som (Argonne National Laboratory), Yuanjiang Pei, Michael Traver (Aramco Services Company)	Day 1 (May 10)	Zoom 1	T11	04	12:20 AM-12:35 AM
1022-T02-01	P00012	A Model for a Laser-induced Cavitation Bubble	Xiaoxu Zhong, Javad Eshraghi, Pavlos Vlachos, Sadeq Dabiri, Arezoo M. Ardekani* (Purdue University)	Day 1 (May 10)	Zoom 2	T02	01	11:25 PM-11:40 PM
1022-T02-02	P00017	Cavitation Modeling in Liquids Subject to Large Accelerations	Maathangi Ganesh*, Arezoo Ardekani, Sadeq Dabiri (Purdue University)	Day 1 (May 10)	Zoom 2	T02	02	11:40 PM-11:55 PM
1022-T02-03	P00027	Analytical Solution and Frequency Response Curves for the R-P Equation with a Surfactant and a Maxwell Fluid as Damping Agents using a Refined Asymptotic Perturbation Method	C. Yepes*, J. Naude, F. Mendez (UNAM), M. Navarrete (PUNTA - UNAM)	Day 1 (May 10)	Zoom 2	T02	03	12:05 AM-12:20 AM
1022-T02-04	P00031	Numerical Investigation on Underwater Explosion with Thermodynamic Cavitation Process	Kyungjun Choi*, Hyunji Kim, Chongam Kim (Seoul National University)	Day 1 (May 10)	Zoom 2	T02	04	12:20 AM-12:35 AM
1023-T13-03	P00014	Sonochemistry in Light of Third Reactivity Paradigm	Sergey I. Nikitenko* Timothé Di Pasquale, Tony Chave, Rachel Pflieger (Institut de Chimie Séparative de Marcoule)	Day 1 (May 10)	Zoom 3	T13	03	12:05 AM-12:20 AM
1023-T13-01	P00079	Estimation of Luminescence Intensity of Hydrodynamic Cavitation Considering Sound Velocity in the Cavitating Flow Field	Hitoshi Soyama* (Tohoku University)	Day 1 (May 10)	Zoom 3	T13	01	11:25 PM-11:40 PM
1023-T13-02	P00097	A Comparative Study on the Static Pressure Limit for Acoustically-Driven Bubble and Laser-Induced Bubble	Kewen Peng* (China University of Petroleum-Beijing, Dongguan University of Technology), Frank G. F. Qin (Dongguan University of Technology), Shoucong Tian, Yiqun Zhang (China University of Petroleum-Beijing)	Day 1 (May 10)	Zoom 3	T13	02	11:40 PM-11:55 PM
1023-T13-04	P00145	Experimental Investigation of Cavitation in a Jet Regarding Process Optimization	Julius-Alexander Nöpel*, Jochen Fröhlich, Frank Rüdiger (Technische Universität Dresden)	Day 1 (May 10)	Zoom 3	T13	04	12:20 AM-12:35 AM
1024-T03-01	P00013	Advanced Collapse Clustering Algorithms for Numerical Cavitation Erosion Prediction	Theresa Trummer* (Technical University of Munich, Bundeswehr University Munich), Fabian Thier, Steffen J. Schmidt, Nikolaus A. Adams (Technical University of Munich)	Day 1 (May 10)	Zoom 4	T03	01	11:25 PM-11:40 PM
1024-T04-01	P00016	Numerical Investigation of Sheet Cavitation over a 3-D Venturi Configuration	Camille Gouin*, Carlos Junqueira-Junior, Jean-Christophe Robinet (ENSA Paris), Eric Goncalves Da Silva (ISAE-ENSMA)	Day 1 (May 10)	Zoom 4	T04	01	12:05 AM-12:20 AM
1024-T04-02	P00022	Kelvin-Helmholtz Instability Driven Shedding of Cavitation Clouds in Microchannels	Darjan Podbevšek, Martin Petkovešek, Matevž Dular* (University of Ljubljana), Claus Dieter Ohl (Otto von Guericke University)	Day 1 (May 10)	Zoom 4	T04	02	12:20 AM-12:35 AM
1024-T03-02	P00024	Numerical Simulation of Vortex Cavitation in a Submerged Impulsive Water Jet by Compressible Mixture Flow Method	Guoyi Peng*, Ryouga Ishitsuka, Yasuyuki Oguma (Nihon University), Yanbo Peng, Hong Ji (Janzhou University of Technology)	Day 1 (May 10)	Zoom 4	T03	02	11:40 PM-11:55 PM
1025-T09-01	P00030	Computations of Cavitating Flows: Cryogenic Cavitation of Inducer and Supercavitating Underwater Vehicle	Hyunji Kim*, Yohan Choe, Kyungjun Choi, Chongam Kim (Seoul National University)	Day 1 (May 10)	Zoom 5	T09	01	11:25 PM-11:40 PM
1025-T09-02	P00035	Study on a Rapid Decrease of Flow Rate in Auxiliary Feedwater System using CFD	Jae-Min Lee*, Sang-Gyu Lim, Suk-Ho Lee (Korea Hydro & Nuclear Power Co., Ltd.)	Day 1 (May 10)	Zoom 5	T09	02	11:40 PM-11:55 PM
1025-T09-03	P00038	Three Dimensional Numerical Simulation Analysis of Two-Phase Flow in Nozzle with Grooves	Wei Yunpeng*, Fan Liyun, Zhang Hanwen, Peng Huaili (Harbin Engineering University)	Day 1 (May 10)	Zoom 5	T09	03	12:05 AM-12:20 AM
1025-T09-04	P00040	Large Eddy Simulation of the Transient Cavitating Vortical Flow in the Wake of a Hydrofoil	Jian Chen, Linlin Geng, Xavier Escaler* (Universitat Politècnica de Catalunya)	Day 1 (May 10)	Zoom 5	T09	04	12:20 AM-12:35 AM
1026-T06-01	P00007	Motion Simulations of a Supercavitating Body with Variable Ventilations	Wang Zou*, Tingxu Liu, Jiaxin Wang (Shanghai Jiao Tong University)	Day 1 (May 10)	Zoom 6	T06	01	11:25 PM-11:40 PM
1026-T06-02	P00009	Flow Characteristic Experiments of Water Entry Ventilated Supercavitation with Liquid Jet Cavitator	Le Shen, Yang Li (Sun Yat-sen University), Jia Li, Jing Guo, Hui Qi (Harbin Engineering University), Yunhua Jiang* (Sun Yat-sen University, Southern Marine Science and Engineering Guangdong Laboratory)	Day 1 (May 10)	Zoom 6	T06	02	11:40 PM-11:55 PM
1026-T06-03	P00032	Interaction Mechanism between the Ventilated Supercavity and the Tail Jetting Flow	Min Xiang*, Xiaoyu Zhao, Bo Liu (National University of Defense Technology)	Day 1 (May 10)	Zoom 6	T06	03	12:05 AM-12:20 AM
1026-T06-04	P00045	Experimental Verification of Mathematical Model of the Supercavitating Underwater Vehicle Dynamics	Volodymyr Moroz*, Viktor Kochin, Volodymyr Semenenko (Institute of Hydromechanics of NAS of Ukraine), Bu-Geun Paik (Korea Research Institute of Ships&Ocean Engineering)	Day 1 (May 10)	Zoom 6	T06	04	12:20 AM-12:35 AM
1027-T07-01	P00018	Three-Dimensional Simulation of Bubble Collapse near a Wall	Eric Goncalves da Silva*, Philippe Pamaudeau (ISAE-ENSMA)	Day 1 (May 10)	Zoom 7	T07	01	11:25 PM-11:40 PM
1027-T07-02	P00021	Wavelet Analysis of Impact Force due to Single Bubble Shock-Induced Collapse near Rigid and Coated Surfaces	Rubani Firiy*, Kazuki Inaba, Kikuo Kishimoto (Tokyo Institute of Technology), Farid Triawan (Tokyo Institute of Technology, Ebara Corporation), Keisuke Hayabusa, Hiroaki Nakamoto (Ebara Corporation)	Day 1 (May 10)	Zoom 7	T07	02	11:40 PM-11:55 PM
1027-T07-03	P00036	Risk Assessment of Erosive Aggressiveness due to the Condensation Shock by Numerical Simulation	Wei Zhang* (Marine Design and Research Institute of China), Bing Zhu (University of Shanghai for Science and Technology)	Day 1 (May 10)	Zoom 7	T07	03	12:05 AM-12:20 AM
1027-T07-04	P00042	Experimental Device for the Study of Erosion by Ultrasonic Cavitation	Javier Rosas, Javier Zenteno, Rodrigo Mayén-Mondragón, Margarita Navarrete* (PUNTA - UNAM)	Day 1 (May 10)	Zoom 7	T07	04	12:20 AM-12:35 AM
1028-T08-01	P00010	Accuracy Verification of Cavity Shape Measurement using Combination Line CCD Camera Measurement Method	Koichiro Shiraishi*, Yuki Sawada, Junichi Fujisawa (National Institute of Maritime, Port, and Aviation Technology)	Day 1 (May 10)	Zoom 8	T08	01	11:25 PM-11:40 PM
1028-T08-02	P00019	Performance Prediction of Composite Marine Propeller in Non-cavitating and Cavitating Flow	Ji-Hye Kim*, Hyongsuk Lee (Hyundai Heavy Industries), Sung-Hoon Kim, Hee-Young Choi, Zoo-Hwan Hah (Korea Shipbuilding & Offshore Engineering), Han-Shin Seol (Korea Research Institute of Ships & Ocean Engineering)	Day 1 (May 10)	Zoom 8	T08	02	11:40 PM-11:55 PM
1028-T08-03	P00029	Cavitation Performance Evaluation Results for a Waterjet Propulsion System with an Amphibious Vehicle Hull	Taehyung Kim*, Jeongil Seo (Agency for Defense Development), Jaemoon Han, Dojun Kim (Hanwha Defense)	Day 1 (May 10)	Zoom 8	T08	03	12:05 AM-12:20 AM
1028-T08-04	P00033	A Numerical Approach to the Prediction of Cavitation Behavior and Hull Pressure Fluctuation induced by Marine Propeller at Full-Scale	Jung-yun Won*, Jaewook Hur, Jeong-yong Park, Hyongsuk Lee (Hyundai Heavy Industries Co. Ltd.)	Day 1 (May 10)	Zoom 8	T08	04	12:20 AM-12:35 AM

Schedule for Live Discussion of CAV2021

Presentation Code	Paper No.	Paper Title	Authors	S.Date	S.Zoom	Topic	Topic order	Presentation time
1121-T01-01	P0062	Pairwise Coalescence of Surface Nuclei in Diffusion-Driven Nucleation	Benedict C. Depp, Grigorios Hatzissawidis, Gerhard J. Ludwig, Peter F. Pelz* (Technische Universität Darmstadt)	Day 2 (May 11)	Zoom 1	T01	01	10:00 PM-10:15 PM
1121-T01-02	P00100	An Experimental Consideration of Occurrence Condition of Gaseous Cavitation in Oil	Yuka Iga*, Junnosuke Okajima, Shunpei Takahashi, Yousuke Iбата (Tohoku University)	Day 2 (May 11)	Zoom 1	T01	02	10:15 PM-10:30 PM
1121-T01-03	P00113	The Role of Potassium Iodide (KI) Solution in the Development of Hydrodynamic Cavitation on a Chip	Mohammad Jafarpour, Farzad Rokhsar Talabazar, Ali Kogar (Sabanci University, Sabanci University Nanotechnology Research and Application Center), Morteza Ghorbani* (Sabanci University Nanotechnology Research and Application Center, KTH Royal Institute of Technology)	Day 2 (May 11)	Zoom 1	T01	03	11:25 PM-11:40 PM
1121-T01-04	P00121	Reynolds Number Effects on Pressure Fluctuations and Cavitation Inception in a Turbulent Shear Layer	Karuna Agarwal*, Omri Ram, Jin Wang, Yuhui Lu, Joseph Katz (Johns Hopkins University)	Day 2 (May 11)	Zoom 1	T01	04	11:40 PM-11:55 PM
1121-T01-05	P00127	Attached Cavitation Inception Sustained by Residual Nuclei Generated during Collapse of Previous Events	Omri Ram*, Karuna Agarwal, Joseph Katz (Johns Hopkins University)	Day 2 (May 11)	Zoom 1	T01	05	12:05 AM-12:20 AM
1121-T01-06	P00130	Direct Numerical Simulation of Heterogeneous Bubble Nucleation	M. Saini*, S. Zaleski, D. Fuster (Sorbonne université)	Day 2 (May 11)	Zoom 1	T01	06	12:20 AM-12:35 AM
1122-T02-05	P00052	Unsteady Dynamics of Bubble Plume	Hyunseok Kim, Hyungmin Park* (Seoul National University)	Day 2 (May 11)	Zoom 2	T02	05	10:00 PM-10:15 PM
1122-T02-06	P00054	Weakly Nonlinear Propagation of Pressure Waves in a Flowing Water Containing Translational Bubbles Acting a Drag Force: Multiple-Scales Theory and Long-Period Computation	Takahiro Yatabe, Tetsuya Kanagawa*, Takahiro Ayukai (University of Tsukuba)	Day 2 (May 11)	Zoom 2	T02	06	10:15 PM-10:30 PM
1122-T02-07	P00055	Nonlinear Waves in Bubbly Liquids with a Strong Thermal Effect: Interaction between Wave Nonlinearity and Thermodynamics inside Bubble and Contribution of Thermal Conduction at Bubble-Liquid Interface	Takafumi Kamei, Takahiro Ayukai, Tetsuya Kanagawa* (University of Tsukuba)	Day 2 (May 11)	Zoom 2	T02	07	11:25 PM-11:40 PM
1122-T02-08	P00056	Evaluation of the Kelvin Impulse on Single Bubble Shock-Induced Collapse Near Flexible Boundaries	Rubani Firiy, Kazuaki Inaba, Kikuo Kishimoto (Tokyo Institute of Technology), Farid Triawan (Tokyo Institute of Technology, Sampoerna University), Keisuke Hayabusa, Hiroaki Nakamoto (Ebara Corporation)	Day 2 (May 11)	Zoom 2	T02	08	11:40 PM-11:55 PM
1122-T02-09	P00059	The Dynamics of a Single Cavitation Bubble in a Micro-Confinement	Konstantin Leonov*, Iskander Akhatov (Skolkovo Institute of Science and Technology)	Day 2 (May 11)	Zoom 2	T02	09	12:05 AM-12:20 AM
1122-T02-10	P00066	Compressible 3D-Simulations of Spherical Bubble Collapses in Viscoelastic Fluids	Christian Lang*, Steffen J. Schmidt, Nikolaus A. Adams (Technical University of Munich)	Day 2 (May 11)	Zoom 2	T02	10	12:20 AM-12:35 AM
1123-T03-03	P00047	A Numerical Study of Unsteady Hydrodynamic Characteristics on Hydrofoils with Leading Edge Protuberances: Cavitation Investigation with LES	Mohammad-Reza Pendar (University of Beira Interior), Ehsan Roohi* (Xi'an Jiaotong University)	Day 2 (May 11)	Zoom 3	T03	03	10:00 PM-10:15 PM
1123-T03-04	P00048	Cavitating Flow Structure and Noise Suppression Analysis of a Hydrofoil with Wavy Leading Edges	Mohammad-Reza Pendar (University of Beira Interior), Ehsan Roohi* (Xi'an Jiaotong University)	Day 2 (May 11)	Zoom 3	T03	04	10:15 PM-10:30 PM
1123-T03-05	P00049	Conditional Moment Method for Fully Coupled Phase-averaged Cavitation Models	Spencer H. Bryngelson*, Tim Colonius (California Institute of Technology), Franz O'Meally (Johns Hopkins University), Rodney O. Fox (Iowa State University)	Day 2 (May 11)	Zoom 3	T03	05	11:25 PM-11:40 PM
1123-T03-06	P00083	Multiphase Flows Analysis of an Axisymmetric Body using Improved Interface Capturing Method with a Cavitation Model	Trong-Nguyen Duy, Van-Tu Nguyen, Thanh-Hoang Phan, Quang-Thai Nguyen, Wam-Gyu Park* (Pusan National University)	Day 2 (May 11)	Zoom 3	T03	06	11:40 PM-11:55 PM
1123-T03-07	P00088	Eulerian Framework for Bubble-Cloud-Kidney Stone Interaction	Jean-Sebastien Spratte*, Mauro Rodriguez, Spencer H. Bryngelson, Shunxiang Cao, Tim Colonius (California Institute of Technology)	Day 2 (May 11)	Zoom 3	T03	07	12:05 AM-12:20 AM
1123-T03-08	P00098	Design of Cavitating Micro-reactor using Computational Fluid Dynamics	Gaurav Dastane, Prachi Dwidmutha, Aniruddha. B. Pandit* (Institute of Chemical Technology)	Day 2 (May 11)	Zoom 3	T03	08	12:20 AM-12:35 AM
1124-T04-03	P00041	Detachment of Cavitating Rings in a Long-throat Venturi Tube	Javier Rosas, Rodrigo Mayén, Margarita Navarrete* (PUNTA-UNAM), Jorge Naude, Federico Méndez (UNAM)	Day 2 (May 11)	Zoom 4	T04	03	10:00 PM-10:15 PM
1124-T04-04	P00061	Modal Decomposition of Cloud Cavitation about a NACA 0015 Hydrofoil	Grigorios Hatzissawidis, Benedict C. Depp, Gerhard J. Ludwig, Peter F. Pelz* (Technische Universität Darmstadt)	Day 2 (May 11)	Zoom 4	T04	04	10:15 PM-10:30 PM
1124-T04-05	P00068	Decomposition of Unsteady Sheet/Cloud Cavitation Dynamics in Fluid-Structure Interaction	Yunqing Liu, Qin Wu*, Biao Huang, Guoyu Wang (Beijing Institute of Technology)	Day 2 (May 11)	Zoom 4	T04	05	11:25 PM-11:40 PM
1124-T04-06	P00073	Coupled Vorticity and Velocity Divergence Equations, Applied to Cavitating 2-D Hydrofoils	Konstantinos Iliopoulos*, Spyros A. Kinnas (The University of Texas at Austin)	Day 2 (May 11)	Zoom 4	T04	06	11:40 PM-11:55 PM
1124-T04-07	P00078	Visualization Study on the Flow Field Characteristics of Self-resonating Cavitating Nozzle	Xiaoya Wu, Yiqun Zhang*, Gensheng Li, Yawen Tan, Wei Wang (China University of Petroleum), Kewen Peng (China University of Petroleum, Dongguan University of Technology)	Day 2 (May 11)	Zoom 4	T04	07	12:05 AM-12:20 AM
1124-T04-08	P00090	Experiment Study of Partial Cavitation on Heated NACA0015 Hydrofoil	Ning Yang*, Junnosuke Okajima, Yuka Iga (Tohoku University)	Day 2 (May 11)	Zoom 4	T04	08	12:20 AM-12:35 AM

Schedule for Live Discussion of CAV2021

Presentation Code	Paper No.	Paper Title	Authors	S.Date	S.Zoom	Topic	Topic order	Presentation time
1125-T05-01	P00111	Controlled Surface Roughness Application in Tip Vortex Mitigation and Inception Delay	Rickard E. Bensow*, Abolfazl Asnaghi (Chalmers University of Technology), Urban Svennberg (Kongsberg Maritime Sweden AB)	Day 2 (May 11)	Zoom 5	T05	01	10:00 PM-10:15 PM
1125-T05-02	P00075	On Scale Effect of Propeller Tip Vortex Cavitation with a Detached Eddy Simulation Method	Rong-Gang Nie, Zi-Ru Li, Wei He* (Wuhan University of Technology)	Day 2 (May 11)	Zoom 5	T05	02	10:15 PM-10:30 PM
1125-T05-03	P00132	Mechanisms of Diffusion Driven Growth of Vortex-Cavities Following Inception	Swaraj Nanda*, Jerry Westerweel, Gerrit Elsinga (Technical University of Delft), Tom van Terwisga (Technical University of Delft, Maritime Research Institute of the Netherlands)	Day 2 (May 11)	Zoom 5	T05	03	11:25 PM-11:40 PM
1125-T05-04	P00144	Optical Cavitation Inspection System (OCIS) for Higher Order Pressure Fluctuations	Eric Ebert*, Nils Damaschke (University of Rostock), Frank Pagels, Frank Papenfuss, Sven Karsten (FORTech GmbH)	Day 2 (May 11)	Zoom 5	T05	04	11:40 PM-11:55 PM
1125-T05-05	P00153	Simulation of Linear and Non-Linear Dynamics of Tip-Vortex Cavities with a Panel Method using Explicit Relaxation Zones	Roland Gosda*, Robinson Peric, Moustafa Abdel-Maksoud (Hamburg University of Technology)	Day 2 (May 11)	Zoom 5	T05	05	12:05 AM-12:20 AM
1125-T05-06	P00167	An Experimental Study of Cavitation Inception due to Vortex Interaction	Daniel Knister*, Elizabeth Callison, Harish Ganesh, Steven L. Ceccio (University of Michigan)	Day 2 (May 11)	Zoom 5	T05	06	12:20 AM-12:35 AM
1126-T09-05	P00044	Introduction to CFD Simulation Cases for Cavitation Flow in the In-service Testing related Components	Gong-Hee Lee*, June-Ho Bae, Soon-Ho Kang (Korea Institute of Nuclear Safety)	Day 2 (May 11)	Zoom 6	T09	05	12:05 AM-12:20 AM
1126-T06-05	P00063	Study of Flow Problems a Super-Cavitating Body under Conditions of Significant Accelerations of Motion	Vladimir Serebryakov* (National Academy of Sciences, Ukraine)	Day 2 (May 11)	Zoom 6	T06	05	10:00 PM-10:15 PM
1126-T09-06	P00084	Numerical Study on the Flow of Test Section and Diffuser of Large Cavitation Tunnel	Jung-Kyu Choi* (Mokpo National University), Hyoung-Tae Kim, Chang-Sup Lee (Chungnam National University), Seung-Jae Lee, Hyunse Yoon (Daewoo Shipbuilding & Marine Engineering Co., Ltd)	Day 2 (May 11)	Zoom 6	T09	06	12:20 AM-12:35 AM
1126-T06-06	P00093	Numerical Simulation of Supercavitating Flow around a Submerged Projectile near a Free Surface	Van-Tu Nguyen*, Thanh-Hoang Phan, Trong-Nguyen Duy, Warn-Gyu Park (Pusan National University)	Day 2 (May 11)	Zoom 6	T06	06	10:15 PM-10:30 PM
1126-T06-07	P00146	An Experimental Study on Ventilated Supercavitation by Injection of 1,000°C Combustion Gas	David Nagarathinam*, Ji-Woo Hong, Ki-Seong Kim, Bahan Ji, Van Duyen Pham, Byoung-Kwon Ahn (Chungnam National University)	Day 2 (May 11)	Zoom 6	T06	07	11:25 PM-11:40 PM
1126-T06-08	P00161	On Supercavitation around a Rectangular Body	Damien Colombet*, Frédéric Ayela (Université Grenoble Alpes), Eric Goncalves Da Silva (ISAE-ENSMA), Lionel Perrin, Gilles Ledoux (Université Claude Bernard Lyon 1)	Day 2 (May 11)	Zoom 6	T06	08	11:40 PM-11:55 PM
1127-T07-05	P00058	Mechanism of Cavitation Erosion in a Hydraulic Control Valve	Gaia Kobayashi, Kohei Okita* (Nihon University), Teruyuki Funakawa, Yuusuke Miyamoto, Shinobu Nagura (Komatsu Ltd.), Shu Takagi, Hiroharu Kato (The University of Tokyo)	Day 2 (May 11)	Zoom 7	T07	05	10:00 PM-10:15 PM
1127-T07-06	P00077	Ultrasonic Cavitation Erosion Mechanism of Free-Floating Al3Zr Intermetallics	Abhinav Priyadarshi*, Shazamin Bin Shahrani, John Durodola (Oxford Brookes University), Tungky Subroto (Brunel University), Koulis Pericleous (University of Greenwich), Dmitry Eskin (Brunel University, Tomsk State University), Iakovos Tzanakis (Oxford Brookes University, University of Oxford)	Day 2 (May 11)	Zoom 7	T07	06	10:15 PM-10:30 PM
1127-T07-07	P00092	Investigation on Cavitation Erosion in Axisymmetric Nozzles	Insu Lee, Woonhan Seok, Shin Hyung Rhee (Seoul National University), Sunho Park* (Korea Maritime and Ocean University)	Day 2 (May 11)	Zoom 7	T07	07	11:25 PM-11:40 PM
1127-T07-08	P00095	Experimental and Numerical Investigation of Cavitation Erosion in Ultrasonic Erosion Devices with Varying Gap Widths	Felix Schreiner*, Romuald Skoda (Ruhr University Bochum)	Day 2 (May 11)	Zoom 7	T07	08	11:40 PM-11:55 PM
1127-T07-09	P00102	Numerical Assessment of Cavitation Erosion for a Nozzle Flow Configuration	Mehmet Ozgunoglu*, Mohammad Hossein Arabnejad, Rickard Bensow (Chalmers University of Technology), Michael Oevermann (Chalmers University of Technology, Brandenburgische Technische Universität Cottbus)	Day 2 (May 11)	Zoom 7	T07	09	12:05 AM-12:20 AM
1127-T07-10	P00106	Characterisation of the Acoustic Pressure Fields in Ultrasound Liquid Phase Processing of Graphite in Water	Justin A. Morton, Iakovos Tzanakis* (Oxford Brookes University), Dmitry G. Eskin (Brunel University London), Nicole Grobert (University of Oxford, Williams Advanced Engineering), Jiawei Mi (University of Hull), Kyriakos Porfyriakis (University of Greenwich)	Day 2 (May 11)	Zoom 7	T07	10	12:20 AM-12:35 AM
1128-T08-05	P00080	Numerical Investigation of Full-Scale Cavitating Propeller Underwater Radiated Noise	Savas Sezen*, Batuhan Aktas, Mehmet Atlar, Patrick Fitzsimmons (University of Strathclyde)	Day 2 (May 11)	Zoom 8	T08	05	10:00 PM-10:15 PM
1128-T08-06	P00110	A Simplified Method to Assess Cavitation Erosion on Marine Propellers and Its Application to Blade Section Design	Zhibo Zeng*, Ziyang Xiong, Zhengqing Dong, Gongzheng Xin (China Ship Scientific Research Center)	Day 2 (May 11)	Zoom 8	T08	06	10:15 PM-10:30 PM
1128-T08-07	P00112	Tip Vortex Cavitation Suppression by Tip Modification of a Ship Propeller	Keun Woo Shin* (MAN Energy Solutions), Poul Andersen (Technical University of Denmark)	Day 2 (May 11)	Zoom 8	T08	07	11:25 PM-11:40 PM
1128-T14-01	P00143	Cavitation Nuclei Detection and Classification in Interferometric Imaging by Deep Learning	Eric Ebert*, Nils Damaschke (University of Rostock)	Day 2 (May 11)	Zoom 8	T14	01	12:05 AM-12:20 AM
1128-T14-02	P00147	Adaptive Visualization for Cavitation and Shock Waves Phenomena	Vid Ažrež, Tomaž Požar, Rok Petkovšek* (University of Ljubljana)	Day 2 (May 11)	Zoom 8	T14	02	12:20 AM-12:35 AM
1128-T08-08	P00176	The Numerical Study of the Cavitation Flow of the Propeller in the Wake of the Ice Block	Shi Liang Hu*, Shen Wu, Feng Diao (China Ship Scientific Research Center)	Day 2 (May 11)	Zoom 8	T08	08	11:40 PM-11:55 PM

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Presentation Code	Paper No.	Paper Title	Authors	S.Date	S.Zoom	Topic	Topic order	Presentation time
1221-T10-01	P00028	Numerical Investigation of Tip Vortex Bursting and Induced Hull Pressure Pulses on a Container Vessel	Muye Ge*, Rickard E. Bensow (Chalmers University of Technology), Urban Svenberg (Kongsberg Hydrodynamic Research Center)	Day 3 (May 12)	Zoom 1	T10	01	11:25 PM-11:40 PM
1221-T10-03	P00082	Experimental Study on the Reduction of Underwater Radiated Noise from Propeller Cavitation of Commercial Vessel	Taegoo Lee*, Gisu Song, Kyungjun Lee, Yongchul Lee, Hyun Joe Kim (Samsung Heavy Industries Co., Ltd), Cheolsoo Park (Korea Research Institute of Ships & Ocean Engineering)	Day 3 (May 12)	Zoom 1	T10	03	12:05 AM-12:20 AM
1221-T10-04	P00135	Experimental Investigation of Unsteady Cavitating Flows around Rigid and Flexible Hydrofoils	Yuxing Lin*, Ebrahim Kadivar, Simon Tödter, Jens Neugebauer, Ould el Moctar (University of Duisburg-Essen)	Day 3 (May 12)	Zoom 1	T10	04	12:20 AM-12:35 AM
1221-T10-02	P00140	A Study on the Vibration and Noise Characteristics of a Delft Twist11 Hydrofoil according to Cavitation Number	Hong-Sik Hwang, Kwang-Jun Paik*, Soon-Hyun Lee (Inha University), Gisu Song (National Korea Maritime & Ocean University)	Day 3 (May 12)	Zoom 1	T10	02	11:40 PM-11:55 PM
1221-T01-07	P00212	Nucleation Dynamics in Cloud Cavitation	Patrick S. Russell*, Paul A. Brandner (University of Tasmania)	Day 3 (May 12)	Zoom 1	T01	07	10:00 PM-10:15 PM
1221-T01-08	P00213	The Effect of Nuclei on the Attachment Hysteresis in Cavitating Trailing Vortices	James A. Venning*, Rhys A. Paul, Bryce W. Pearce, Paul A. Brandner (University of Tasmania), Matthew T. Khoo (University of Tasmania, Defence Science and Technology Group)	Day 3 (May 12)	Zoom 1	T01	08	10:15 PM-10:30 PM
1222-T02-11	P00086	Numerical Study on Pressure Wave Propagation in Bubbly Liquid by a Weakly Nonlinear Equation based on a Two-Fluid Model	Takahiro Ayukai, Tetsuya Kanagawa* (University of Tsukuba)	Day 3 (May 12)	Zoom 2	T02	11	10:00 PM-10:15 PM
1222-T02-13	P00111	Unsteady Bubbly Cavitating Nozzle Flows using a Novel Reduced-Order Gas Pressure Law	Senay Pasiñoğlu, Mehmet Kaya, Erkan Ayder, Uğurcan Morkoyun (Istanbul Technical University), Can F. Detale (MEF University)	Day 3 (May 12)	Zoom 2	T02	13	10:15 PM-10:30 PM
1222-T02-15	P00126	Basic Theory on an Interaction between Nonlinear and Thermal Effects toward Microbubble - Enhanced Focused Ultrasound Treatment	Shunsuke Kagami, Tetsuya Kanagawa* (University of Tsukuba)	Day 3 (May 12)	Zoom 2	T02	15	11:25 PM-11:40 PM
1222-T02-17	P00157	Acoustically-Induced Bubble Growth and Phase Change Dynamics near Compliant Surfaces	Mauro Rodriguez*, Spencer H. Bryngelson, Tim Colonius (California Institute of Technology)	Day 3 (May 12)	Zoom 2	T02	17	11:40 PM-11:55 PM
1222-T02-19	P00184	Experimental Evidence of Thermodynamic Effects in Columnar Cavitation Bubble Dynamics	Xu Meng, Haochen Zhang, Zhigang Zuo, Shuhong Liu (Tsinghua University), Hui Chen (Xi'an Aerospace Propulsion Institute)	Day 3 (May 12)	Zoom 2	T02	19	12:05 AM-12:20 AM
1222-T02-21	P00193	Bubble Shock Waves Interaction in Gelatin	Slew-Wan Ohl*, Claus-Dieter Ohl (Otto-von-Guericke-Universität Magdeburg)	Day 3 (May 12)	Zoom 2	T02	21	12:20 AM-12:35 AM
1223-T02-12	P00104	Numerical Study of Microbubble Cavitation on a Solid Surface	Seongjin Hong, Gihun Son* (Sogang University)	Day 3 (May 12)	Zoom 3	T02	12	10:00 PM-10:15 PM
1223-T02-14	P00118	On the Characteristics of Air Layer Regimes	Lina Nikolaidou*, Angeliki Laskari, Christian Poelma (Delft University of Technology), Tom van Terwisga (Delft University of Technology, Maritime Research Institute of the Netherlands)	Day 3 (May 12)	Zoom 3	T02	14	10:15 PM-10:30 PM
1223-T02-16	P00150	Theoretical Study based on Weakly Nonlinear Wave Equations for Bubbly Liquid with the Initial Polydispersity of Bubble Size	Takuma Kawame, Reona Ishitsuka, Tetsuya Kanagawa* (University of Tsukuba)	Day 3 (May 12)	Zoom 3	T02	16	11:25 PM-11:40 PM
1223-T02-18	P00183	Dynamics of Cavitation Bubbles in a Tube: A Study using the Tube-Arrest Approach	Peng Xu* (Tsinghua University, University of Waterloo), Zhigang Zuo, Shuhong Liu (Tsinghua University), Zhao Pan (University of Waterloo)	Day 3 (May 12)	Zoom 3	T02	18	11:40 PM-11:55 PM
1223-T02-20	P00189	Dynamics Characterization of The Acoustically Driven Single Microbubble near A Rigid Boundary	Hao Wu* (Shandong University of Traditional Chinese Medicine, Tianjin University), Yuanyuan Li (Shandong University of Traditional Chinese Medicine), Haixia Yu, Dachao Li (Tianjin University)	Day 3 (May 12)	Zoom 3	T02	20	12:05 AM-12:20 AM
1223-T02-22	P00196	Experimental Observation of Micrometric Bubble Pair Oscillations and Induced Effects	Regnault Gabriel*, Mauger Cyril, Doinikov Alexander A., Blanc-Benon Philippe (École Centrale de Lyon), Insera Claude (Université Claude Bernard Lyon I)	Day 3 (May 12)	Zoom 3	T02	22	12:20 AM-12:35 AM
1224-T03-09	P00115	Numerical Simulation of a Water Cavitation Jet Peening	Zhaofeng Han*, Thibaut Chaise, Cyril Mauger, Thomas Elguedj, Nicolas Boisson, Mahmoud El Hajem (Université Claude Bernard Lyon I)	Day 3 (May 12)	Zoom 4	T03	09	10:00 PM-10:15 PM
1224-T03-10	P00122	Wall-Resolved Large Eddy Simulation Employing Multi-Process Cavitation Model around Clark Y-11.7% Hydrofoil	Shin-ichi Tsuda*, Yuichi Kunishima, Satoshi Watanabe (Kyushu University)	Day 3 (May 12)	Zoom 4	T03	10	10:15 PM-10:30 PM
1224-T03-11	P00129	A Study on Application of Single and Two-Fluid Models to Numerical Simulation of Vortical Cavitating Flows	Takaji Ikeda*, Motohiko Nohmi, Takayuki Suzuki (Ebara Corporation), Satoshi Watanabe, Shin-ichi Tsuda (Kyushu University), Kazuyoshi Miyagawa (Waseda University), Hironori Horiguchi (Osaka University)	Day 3 (May 12)	Zoom 4	T03	11	11:25 PM-11:40 PM
1224-T03-12	P00137	Numerical Simulation of Cavitating Flow Past a Cylindrical Pin Located at the Throat of a Venturi	Mohit Kannan*, Dhiman Chatterjee (Indian Institute of Technology Madras)	Day 3 (May 12)	Zoom 4	T03	12	11:40 PM-11:55 PM
1224-T03-13	P00141	Wave Systems in an Internal Ship Air Cavity and Their Effect on Air Leakage: A Numerical Investigation	Timofey Mukha, Rickard E. Bensow* (Chalmers University of Technology)	Day 3 (May 12)	Zoom 4	T03	13	12:05 AM-12:20 AM
1224-T03-14	P00155	Development of Generalized CFD Model for Cavitating Flows	Sachin Zanje, Janani Sree Muralidharan (Indian Institute of Technology Bombay), Kannan Iyer (Indian Institute of Technology Jammu), Hemant Punekar, Padmesh Mandloi, Vinay Kumar Gupta (ANSYS Software Pvt. Ltd.)	Day 3 (May 12)	Zoom 4	T03	14	12:20 AM-12:35 AM

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1225-T14-07	P00109	Cavitating Nozzle: Effect on Void Fraction and Droplet Size Distribution	Chris Callahan-Dudley*, Simo A. Makharju (University of California)	Day 3 (May 12)	Zoom 5	T14	07	12:05 AM-12:20 AM
1225-T14-03	P00166	A High-Speed Limited Angle X-ray Tomography System for Optically Opaque Multiphase Flows	Nicholas A. Lucido*, Harish Ganesh, Steven L. Ceccio (University of Michigan)	Day 3 (May 12)	Zoom 5	T14	03	10:00 PM-10:15 PM
1225-T14-06	P00188	Application of Hopkinson Bar in Measurement of Electric Spark Bubble Pressure Load	Chunlong Ma* (Harbin Engineering University, Harbin Vocational & Technical College), Dongyan Shi, Dongze He, Hui Ma, Yuxin Gou (Harbin Engineering University)	Day 3 (May 12)	Zoom 5	T14	06	11:40 PM-11:55 PM
1225-T14-04	P00194	Recent Progresses in the Quantitative Measurement of Hydroxyl Radicals Produced by Hydrodynamic Cavitation	Darjan Podbeve, Gilles Ledoux (Université Claude Bernard), Lionel Perrin (Université Claude Bernard, Université Grenoble Alpes), Damien Colombet, Frederic Ayela* (Université Grenoble Alpes)	Day 3 (May 12)	Zoom 5	T14	04	10:15 PM-10:30 PM
1225-T14-05	P00214	Dual-camera Mode Visualization of Cavitating Flows	James A. Venning*, Bryce W. Pearce, Paul A. Brandner (University of Tasmania)	Day 3 (May 12)	Zoom 5	T14	05	11:25 PM-11:40 PM
1226-T09-12	P00071	Measurement of the Influence of Sheet Cavitation on the Heat Generated in a Closed Loop Pumping System	David Bermejo* (Universitat Politècnica de Catalunya, Condorchem Envttech), Xavier Escaler, Rafael Ruiz-Mansilla (Universitat Politècnica de Catalunya), Matevž Dular (University of Ljubljana)	Day 3 (May 12)	Zoom 6	T09	12	12:20 AM-12:35 AM
1226-T09-07	P00199	Experimental Investigation and Pressure Pulsation Analysis on the Vortex Rope in Draft Tube of Francis Turbine	Lingjiu Zhou*, Wenzhe Kang (China Agricultural University), Huan Cheng, Quanwei Liang (Dongfang Electric Machinery Co., Ltd.) Zhengwei Wang (Tsinghua University)	Day 3 (May 12)	Zoom 6	T09	07	10:00 PM-10:15 PM
1226-T09-08	P00201	Detached Eddy Simulation of the Cavitating Flow in a Large-Scale Vaned-Voluted Centrifugal Pump	Zhaoheng Lu, Ruofu Xiao, Ran Tao* (China Agricultural University), Weichao Liu (Dongfang Electric Machinery Co., Ltd.)	Day 3 (May 12)	Zoom 6	T09	08	10:15 PM-10:30 PM
1226-T09-09	P00202	Cavitation Prediction in the LUMEN LCH4 Pump	Christopher Groll* (University of Stuttgart, German Aerospace Center), Tobias Traudt, Stefan Schlichtriem (German Aerospace Center), Michael Oschwald (German Aerospace Center, RWTH Aachen University)	Day 3 (May 12)	Zoom 6	T09	09	11:25 PM-11:40 PM
1226-T09-10	P00219	Comparisons of SST k-omega, VLES and LES Turbulence Models for Cavitating Flow in a Throttle Nozzle	Wei Guan, Zhixia He*, Liang Zhang (Jiangsu University), Zhuang Shao (Chinese Academy of Sciences), Weimin Li (Chinese Academy of Sciences, University of Chinese Academy of Sciences)	Day 3 (May 12)	Zoom 6	T09	10	11:40 PM-11:55 PM
1226-T09-11	P00223	Transition of a Cavitation Vortex Rope from Cylindrical to Elliptical Mode in Francis Turbine Draft Tube	Arthur Favrel*, Zhihao Liu, Mohammad Hossein Khozaei, Tatsuya Irie, Kazuyoshi Miyagawa (Waseda University)	Day 3 (May 12)	Zoom 6	T09	11	12:05 AM-12:20 AM
1227-T07-11	P00128	Numerical Prediction of Cavitation Erosion in a Centrifugal Pump	Motohiko Nohmi*, Tomoki Tsuneda, Shusaku Kagawa, Hiroaki Nakamoto (Ebara Corporation)	Day 3 (May 12)	Zoom 7	T07	11	10:00 PM-10:15 PM
1227-T07-12	P00180	Temperature Effect on Erosion due to High-speed Cavitating Jet	Davide Bernardo Preso*, Mohamed Farhat (École Polytechnique Fédérale de Lausanne), Xiaoxing Peng, Yantao Cao (China Ship Scientific Research Center)	Day 3 (May 12)	Zoom 7	T07	12	10:15 PM-10:30 PM
1227-T07-13	P00182	Evaluation of Compressible and Incompressible 3D Flow Solution Methods for the Assessment of Cavitation Erosion in Ultrasonic Erosion Devices	Magnus Haese*, Felix Schreiner, Romuald Skoda (Ruhr University Bochum)	Day 3 (May 12)	Zoom 7	T07	13	11:25 PM-11:40 PM
1227-T07-14	P00185	Experimental Study on Quantification of Impact of Propeller Cavitation using an On-board Acoustic Sensors	Hongseok Jeong, Hanshin Seol* (Korea Research Institute of Ships & Ocean Engineering)	Day 3 (May 12)	Zoom 7	T07	14	11:40 PM-11:55 PM
1227-T07-15	P00186	Estimation of Cavitation Erosion Damage with Anomaly Detection Neural Networks	Lukas Harsch*, Oliver Kirschner, Stefan Riedelbauch (University of Stuttgart), Jörg Necker (Voith Hydro Holding GmbH & Co. KG)	Day 3 (May 12)	Zoom 7	T07	15	12:05 AM-12:20 AM
1227-T07-16	P00192	Impact of Injector Geometry Details on Cavitation and Erosion Development in a Multi-hole Aluminum Injector Nozzle	Gina M. Magnotti*, Aniket Tekawade, Brandon A. Sforzo, Alan L. Kastengen, Christopher F. Powell, Sibendu Som (Argonne National Laboratory)	Day 3 (May 12)	Zoom 7	T07	16	12:20 AM-12:35 AM
1228-T12-01	P00072	Valve-like Torus-margo Pit of Gymnosperms Regulating Spread of Cavitation	Jooyoung Park*, Jeongeun Ryu, Sang Joon Lee, Sung Ho Park (Pohang University of Science and Technology)	Day 3 (May 12)	Zoom 8	T12	01	10:00 PM-10:15 PM
1228-T12-02	P00076	Aspect of Bubbles in Narrow Tube Imitating Root Canal Induced by ErYAG Laser	Hitoshi Soyama*, Yoshio Yahata, Masahiro Saito (Tohoku University)	Day 3 (May 12)	Zoom 8	T12	02	10:15 PM-10:30 PM
1228-T12-03	P00087	Single Microbubble Collapse Induced by Pressure Waves	Ziga Pandur*, Darjan Podbevešek, Matevž Dular (University of Ljubljana)	Day 3 (May 12)	Zoom 8	T12	03	11:25 PM-11:40 PM
1228-T12-04	P00108	SPH Modeling of Cavitation Impact on Soft Tissue Material	Jingyu Wang*, Steffen J. Schmidt, Nikolaus A. Adams (Technische Universität München)	Day 3 (May 12)	Zoom 8	T12	04	11:40 PM-11:55 PM
1228-T12-05	P00120	Investigation of the Fluid-Structure Interaction of Collapsing Bubbles in the Proximity of Soft Biological Tissue	Armand Shams*, Andreas Papoutsakis, Manolis Gavaikes (University of London)	Day 3 (May 12)	Zoom 8	T12	05	12:05 AM-12:20 AM
1228-T12-06	P00139	Bubble Cloud Formation in Gelatin by the Backscattering of High-Intensity Focused Ultrasound from a Laser-Induced Bubble	Shuhei Ngano, Yi Chen, Toshiyuki Ogasawara*, Hiroyuki Takahira (Osaka Prefecture University)	Day 3 (May 12)	Zoom 8	T12	06	12:20 AM-12:35 AM

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1321-T03-15	P00171	Analysis of Discretization and Modeling Errors in Simulation of Cavitating Flows	Samir Muzafferija, Dejan Radosavljević (Siemens Digital Industries Software), Milovan Perić* (Siemens Digital Industries Software, University of Duisburg-Essen)	Day 4 (May 13)	Zoom 1	T03	15	10:00 PM-10:15 PM
1321-T03-16	P00191	Hydrodynamic Cavitation Investigations with Homogeneous and Inhomogeneous Multiphase Flow Models in OpenFOAM context	Ville Vitanen*, Juho Peltola (VTT Technical Research Centre of Finland Ltd.)	Day 4 (May 13)	Zoom 1	T03	16	10:15 PM-10:30 PM
1321-T03-17	P00204	Preconditioning and Dual-time Stepping based Approach for the Simulation of Cavitating Flows with Low Nuclei Concentration using a Fully-compressible Solver	Mrugank Bhatt, Krishnan Mahesh* (University of Minnesota)	Day 4 (May 13)	Zoom 1	T03	17	11:25 PM-11:40 PM
1321-T03-18	P00207	A Volume-of-fluid (VOF) Methodology for the Prediction of Cavitation Phenomena	Ali Fakhreddine, Karim Alamé, Krishnan Mahesh* (University of Minnesota)	Day 4 (May 13)	Zoom 1	T03	18	11:40 PM-11:55 PM
1321-T03-19	P00210	A Numerical Model for Nonspherical Microbubbles using a Coupled Level Set and Volume-Of-Fluid Method	Bashir M. Alnajar, Michael L. Calvisi* (University of Colorado Colorado Springs), Indrajit Chakraborty (University of Warwick)	Day 4 (May 13)	Zoom 1	T03	19	12:05 AM-12:20 AM
1321-T03-20	P00222	Shock-Raindrop Interaction and Potential for Cavitation-Induced Droplet Breakup	Caroline Anderson, Michael Kinzel* (University of Central Florida)	Day 4 (May 13)	Zoom 1	T03	20	12:20 AM-12:35 AM
1322-T02-29	P00094	Numerical Study on the Wall Pressure caused by Spark-generated Underwater Bubble near a Hemispheric Boundary	Thanh-Hoang Phan, Van-Tu Nguyen, Trong-Nguyen Duy, Wam-Gyu Park* (Pusan National University)	Day 4 (May 13)	Zoom 2	T02	29	11:40 PM-11:55 PM
1322-T02-31	P00125	A Water Tunnel with In-line Cyclone Separator for Removing Freestream Bubble	Yuhui Lu, Omri Ram, Jibu Jose, Kanuna Agarwal, Joseph Katz* (Johns Hopkins University)	Day 4 (May 13)	Zoom 2	T02	31	12:05 AM-12:20 AM
1322-T02-33	P00197	LES of Cavitating Shear Layer	Filipe Brandao, Krishnan Mahesh* (University of Minnesota)	Day 4 (May 13)	Zoom 2	T02	33	12:20 AM-12:35 AM
1322-T02-23	P00200	Experimental Investigation of Fluid Flows Induced by Aspherical Bubbles	Maxime Fauconnier*, Jean-Christophe Béra, Claude Insera (INSERM)	Day 4 (May 13)	Zoom 2	T02	23	10:00 PM-10:15 PM
1322-T02-25	P00215	Nuclei Transport about a Sphere	Rhys A. Paul*, James A. Venning, Paul A. Brandner (University of Tasmania)	Day 4 (May 13)	Zoom 2	T02	25	10:15 PM-10:30 PM
1322-T02-27	P00224	A PIV Measurement for Single, Double Laser-Induced Cavitation Bubbles and Their Near Wall Dynamics	Ben Zhao (Virginia Tech), Kungpeng Long (Laboratoire de Mécanique des Fluides de Lille - Kampé de Fériet), Olivier Coutier-Delgosha (Virginia Tech, Laboratoire de Mécanique des Fluides de Lille - Kampé de Fériet)*	Day 4 (May 13)	Zoom 2	T02	27	11:25 PM-11:40 PM
1323-T02-28	P00089	Compressibility and Vorticity Contributions in the Non-spherical Collapse of a Bubble near a Rigid Boundary	Minki Kim*, Eric Johnsen (University of Michigan), Shahaboddin Alahyari Beig (Continuum Dynamics, Inc)	Day 4 (May 13)	Zoom 3	T02	28	11:25 PM-11:40 PM
1323-T02-30	P00103	Numerical Assessment of Interface Capturing Multicomponent Flow Models in Predicting Non-spherical Bubble Collapse	Aswin Gnaskandan* (Worcester Polytechnic Institute)	Day 4 (May 13)	Zoom 3	T02	30	11:40 PM-11:55 PM
1323-T02-32	P00159	On the Cloud Interaction Parameter and Its Connections with the Coherence and Discrete Spectrum of Bubble Cloud Dynamics	Kazuki Maeda* (Stanford University), Daniel Fuster (Sorbonne Université)	Day 4 (May 13)	Zoom 3	T02	32	12:05 AM-12:20 AM
1323-T02-24	P00205	The Virtual Frame Technique Applied to Cavitation Bubble Collapse: Ex Uno Plures	Armand Sieber*, Mohamed Farhat (EPFL)	Day 4 (May 13)	Zoom 3	T02	24	10:00 PM-10:15 PM
1323-T02-34	P00216	Microbubble Production in a Confined Cavitating Radial Jet	Luka Barbaca*, Rhys A. Paul, Bryce W. Pearce, Paul A. Brandner (University of Tasmania)	Day 4 (May 13)	Zoom 3	T02	34	12:20 AM-12:35 AM
1323-T02-26	P00221	Upward Jet induced by a Vapor Bubble Collapse near an Armored Surface	Fangye Lin, Jun Zou* (Zhejiang University)	Day 4 (May 13)	Zoom 3	T02	26	10:15 PM-10:30 PM
1324-T04-09	P00105	Dynamics of the Re-entrant Jet in a Cavitating Venturi	Udhav U. Gawandakar*, Christian Poelma (Delft University of Technology)	Day 4 (May 13)	Zoom 4	T04	09	10:00 PM-10:15 PM
1324-T04-10	P00107	An Artificial Neural Network Model for Predicting the Behavior of Cavitation Cloud	Yawen Tan, Shouceng Tian*, Chao Yu, Xiaoya Wu, Luyao Ma (China University of Petroleum-Beijing)	Day 4 (May 13)	Zoom 4	T04	10	10:15 PM-10:30 PM
1324-T04-11	P00117	Multi-Scale Proper Orthogonal Decomposition for Cavitating Flows: Applications to Isothermal and Thermosensitive Cavitation	Claudia Esposito* (The von Karman Institute for Fluid Dynamics, KU Leuven), Miguel Alfonso Mendez (The von Karman Institute for Fluid Dynamics), Johan Steelant (ESTEC-ESA), Maria Rosaria Vetrano (KU Leuven)	Day 4 (May 13)	Zoom 4	T04	11	11:25 PM-11:40 PM
1324-T04-12	P00160	Cavitation Dynamics over a Pitching Hydrofoil	Anubhav Bhatt*, Harish Ganesh, S. I. Ceccio (University of Michigan)	Day 4 (May 13)	Zoom 4	T04	12	11:40 PM-11:55 PM
1324-T04-13	P00198	The Intensity and Topology Transition of Sheet/Cloud Cavitation at Elevated Temperatures	Mingming Ge*, Dhruv Apte (Virginia Tech), Guangjian Zhang (Laboratoire de Mécanique des Fluides de Lille - Kampé de Fériet), and Olivier Coutier-Delgosha* (Virginia Tech, Laboratoire de Mécanique des Fluides de Lille - Kampé de Fériet)	Day 4 (May 13)	Zoom 4	T04	13	12:05 AM-12:20 AM

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1325-T05-10	P00081	Numerical Simulation of Tip Vortex Cavitation Inception	Ebrahim Ghahramani*, Rickard E. Bensow (Chalmers University of Technology), Urban Svenberg (Kongsberg Maritime Sweden AB)	Day 4 (May 13)	Zoom 5	T05	10	11:40 PM-11:55 PM
1325-T05-07	P00174	Prediction of Developed Tip Vortex Cavitation via a Panel Method	Seungnam Kim*, Spyros A. Kinnas (The University of Texas at Austin)	Day 4 (May 13)	Zoom 5	T05	07	10:00 PM-10:15 PM
1325-T05-08	P00175	Cavitation Bubble Dynamics in a Rankine Vortex	Pranav Mohan*, Sadeq Dabiri (Purdue University)	Day 4 (May 13)	Zoom 5	T05	08	10:15 PM-10:30 PM
1325-T05-09	P00187	Modeling of Tip Leakage Cavitating Flows with a Multiscale Mathematical Model	Linmin Li*, Zhengdong Wang, Xiaojun Li, Zuchao Zhu (Zhejiang Sci-Tech University)	Day 4 (May 13)	Zoom 5	T05	09	11:25 PM-11:40 PM
1326-T10-06	P00023	Underwater Noise Measurements with a Ship Retrofitted with PressurePores™ Noise Mitigation Technology and using HyDrone™ System	Mehmet Altar, Patrick Fitzsimmons, Moritz Troll, Callum Stark, Savas Sezen, Weichao Shi, Batuhan Aktas, Noriyuki Sasaki (University of Strathclyde), Pepijn Zoet (PZDynamics), Serkan Turkmen (Newcastle University), David Taylor (Oscar Propulsion Ltd)	Day 4 (May 13)	Zoom 6	T10	06	10:15 PM-10:30 PM
1326-T10-05	P00138	An Experimental Study on Tip Vortex Cavitation and Induced Noise Characteristics of Hydrofoils	Suyong Shin* (Chungnam National University, Daewoo Shipbuilding and Marine Engineering), Ji-Woo Hong, Byoung-Kwon Ahn (Chungnam National University), Sung-Gun Park (Daewoo Shipbuilding and Marine Engineering)	Day 4 (May 13)	Zoom 6	T10	05	10:00 PM-10:15 PM
1326-T10-07	P00170	Comparison between Water and Liquid Nitrogen Pressure Surge Experiments to Analyze Cavitation Induced Noise Growth	Sebastian Klein*, Tobias Traudt (German Aerospace Center), Michael Oschwald (German Aerospace Center, RWTH Aachen University)	Day 4 (May 13)	Zoom 6	T10	07	11:25 PM-11:40 PM
1326-T10-08	P00220	Characteristics of a Hydrofoil Flutter under Cavitation Conditions	Tatsuya Irie*, Shunsuke Nakai, Kazuyoshi Miyagawa (Waseda University), Chiharu Kawakita, Koichiro Shiraishi (National Institute of Maritime, Port and Aviation Technology)	Day 4 (May 13)	Zoom 6	T10	08	11:40 PM-11:55 PM
1327-T12-07	P00148	Laser-induced Cavitation near a Concave Surface	Tomaž Požar, Vid Agrež, Rok Petkovšek* (University of Ljubljana)	Day 4 (May 13)	Zoom 7	T12	07	10:00 PM-10:15 PM
1327-T12-08	P00172	Investigation of the Fluid-Structure Interaction of Collapsing Bubbles in the Proximity of Soft Biological Tissue	Armand Shams*, Andreas Papoutsakis, Manolis Gavaises (University of London)	Day 4 (May 13)	Zoom 7	T12	08	10:15 PM-10:30 PM
1327-T12-09	P00173	Investigation of the Thermal Equilibrium Between Liquid and Gas Phases for Collapsing Bubbles using a Multi-Material Diffused Interface Approach	Saeed Bid* (University of London, Sorbonne Université), Andreas Papoutsakis, Phoevos Koukouvins, Manolis Gavaises (University of London)	Day 4 (May 13)	Zoom 7	T12	09	11:25 PM-11:40 PM
1327-T12-10	P00190	Behavior of a Sphere Caused by Pulsed Laser Induced Bubble Simulating Stone Crushing with TUL	Yasuhiro Sugimoto*, Shuma Obata (Kanazawa Institute of Technology)	Day 4 (May 13)	Zoom 7	T12	10	11:40 PM-11:55 PM
1327-T12-11	P00208	Optimal Control of Encapsulated Microbubbles for Biomedicine	Fathia F. Arif, Michael L. Calvisi* (University of Colorado Colorado Springs)	Day 4 (May 13)	Zoom 7	T12	11	12:05 AM-12:20 AM
1328-T09-13	P00096	Experimental Characterization of Thermodynamic Effect on Two-Bladed Inducer Alternate Blade Cavitation	Youngkuk Yoon*, Seung Jin Song (Seoul National University), Changkyoo Park (Agency for Defense Development)	Day 4 (May 13)	Zoom 8	T09	13	10:00 PM-10:15 PM
1328-T09-14	P00119	Hydraulic Performance of Cryogenic Cavitating Orifices: Can It Be Predicted after Isothermal Testing?	Claudia Esposito* (The von Karman Institute for Fluid Dynamics, KU Leuven), Laura Peveroni, Jean-Baptiste Gouriet (The von Karman Institute for Fluid Dynamics), Johan Steelant (ESTEC-ESA), Maria Rosaria Vetrano (KU Leuven)	Day 4 (May 13)	Zoom 8	T09	14	10:15 PM-10:30 PM
1328-T09-15	P00165	Characterisation of Cavitating Flow in Real-Size Optical Injectors for Additised and Renewable Diesel Blends	I.K. Karathanassis* and P. Koukouvins (University of London, Sandia National Laboratories), J. Hwang (Sandia National Laboratories, Mississippi State University), L. Pickett (Sandia National Laboratories), D. Spivey (Lubrizol European Research and Development Centre), M. Gavaises (University of London)	Day 4 (May 13)	Zoom 8	T09	15	11:25 PM-11:40 PM
1328-T09-16	P00203	Experimental Research of the Desulphurization Process used for Diesel Oil	A. Bubulis, J. Vešys, J. Ciganas (Kaunas University of Technology), A.Pauliukas (Vytautas Magnus University)	Day 4 (May 13)	Zoom 8	T09	16	11:40 PM-11:55 PM
1328-T09-17	P00217	Cavitation in Stationary Components of Centrifugal Pumps	Bruno Maroccia, Stefan Berten* (Sulzer Management Ltd.)	Day 4 (May 13)	Zoom 8	T09	17	12:05 AM-12:20 AM