# FSSIC 2025 Program

Last Updated: July 4, 2025

#### Sunday, July 27, 2025

3:00 p.m. to 6:00 p.m.	Registration (Atrium, Science Building)
TBD	FSSIC Proceedings Editors Meeting (invitation only)

#### Monday, July 28, 2025

7:30 a.m. – 9:00 a.m.	Registration (Atrium, Science Building)	
9:00 a.m. – 9:15 a.m.	Welcome and Opening Session (Dr. Peter Zakarow Auditorium UA1350, Science Building)	
9:15 a.m. – 10:00 a.m.	Keynote Lecture (Dr. Peter Zakarow Auditorium UA1350, Science Building) Session Chair: Atef MohanyProf. Marianna Braza Electroactive morphing for disruptive wing design enabling drastic aerodynamic performance increase	
10:00 a.m. – 10:15 a.m.	Coffee Break (Atrium, Science Building)	
10:15 a.m. – 11:55 a.m.	Technical Sessions 1 (Science Building)	
	Session 1A (Room UA1120) Acoustics 1 Session Chair: Philippe Lavoie	Session 1B (Room UA1140) Jets 1 Session Chair: Francisco Huera-Huarte
10:15 a.m.	Leading edge noise from a finite wall- mounted airfoil immersed in a turbulent boundary layer (012) Con Doolan, Roman Kisler, Charitha de Silva, Danielle Moreau	Diffusion mixing of jets with different densities using secondary film flow (017) Norimasa Miyagi, Motoaki Kimura
10:35 a.m.	Measurements of the velocity distribution and noise behind a counter-rotating wind turbine model (043) Yoshifumi Jodai, Yusei Suzuki	Estimation of the turbulent velocity field in a controlled wall jet (055) Bonnie Sim, Joseph W. Hall
10:55 a.m.	Investigation on self-noise of porous samples through acoustic measurements in wind tunnel (033) Nick Connington-Bourbonniere, Joana Rocha, Peter Waudby-Smith	Impact of nozzle geometry on turbulent free jet dynamics: an experimental study (075) Alec Sangster, Amirhossein Hamidi, Ronald Hanson
11:15 a.m.	Aeroacoustic characteristics of the main components of a generic nose landing gear (046) Zhe Lu, Alis Ekmekci	Numerical investigation of self-excited oscillations and aeroacoustic energy exchange in impinging jet flows within HTGR cores (119) <i>Mohammed Alziadeh, Salim El</i> <i>Bouzidi</i>
11:35 a.m.	Which swimmer is noisier in water? Eel or jackfish (102)	On three-dimensional entrainment dynamics of non-circular orifice impinging jets: Time-

	Amirhossein Fardi, Muhammad Saif	resolved tomographic particle image
	Ullah Khalid	velocimetry (038) Hao Qu, Xin Zeng, Peng Wang, Yingzheng Liu
11:55 a.m. – 1:30 p.m.	Lunch (South Village Dining Hall)	
1:30 p.m. – 3:10 p.m.	<b>Technical Sessions 2</b> (Science Building)	
	Session 2A (Room UA1120)	Session 2B (Room UA1140)
	Fluid-Structure Interaction 1	Multiphase Flow
1.00 m m	Session Chair: Dominique Poirel	Session Chair: Sergio Viçosa Möller
1:30 p.m.	A numerical study of flexible flapping wings in highly compressible flows (003) Nathan Widdup, Li Wang, John Young, Fang-bao Tian	Large eddy simulation of turbulent flow in a simplified helical coil steam generator (032) <i>Gihwan Lee, Haecheon Choi</i>
1:50 p.m.	Nonlinear responses of clearance-supported structures subjected to fluidelastic forces experimentally identified using a fractional model (004) José Antunes, Philippe Piteau, Xavier Delaune	Predicting flow-induced forces in two-phase intermittent cross-flow with morphology- adaptive CFD (036) Daniele Vivaldi, Marco Colombo
2:10 p.m.	Linear stability analysis of two parallel inverted flags in axial flow (011) Shaoguang Wang, Mathias Legrand, Michael P. Paidoussis	Bubble rise dynamics in a quiescent liquid and impact on a cylinder (047) Fanny Beltran, William Benguigui, Nicolas Mérigoux, Thomas Bonometti, Catherine Colin
2:30 p.m.	Designing fluid-structure interactions with kirigami: making parachutes out of thin sheets (019) Danick Lamoureux, Sophie Ramananarivo, Frédérick P. Gosselin, David Mélançon	Numerical investigation of snow accumulation on inclined surfaces (116) Kiran P. Keshavan, Martin Agelin- Chaab, Horia Hangan
2:50 p.m.	Characterizing turbulence fluctuations in Stuart vortices through differential elimination algorithms (062) Valencia Negrete, Carla, Romero de Terreros Aramburu, Manuel	Two-phase cross-flow in tube bundles: transition to a high flow rate regime (007) <i>Lucas Prévost, Philippe Piteau</i>
3:10 p.m. – 3:30 p.m.	Coffee Break (Atrium, Science Building)	
3:30 p.m. – 4:10 p.m.	Plenary Lecture (Dr. Peter Zakarow Auditorium UA1350, Science Building)         Session Chair: Atef Mohany         Marwan Hassan         Cross-flow excitation in tube arrays: current understanding and future challenges	
4:10 p.m. – 5:50 p.m.	Technical Sessions 3 (Science Building)	
	Session 3A (Room UA1120) Experimental Techniques Session Chair: Daegyoum Kim	Session 3B (Room UA1140) <b>Wakes 1</b> Session Chair: Martin Agelin-Chaab
4:10 p.m.	Unsteady wall shear-stress measurements on an accelerating cylinder (018) Jesse A. MacArthur, Joseph W. Hall	Three-dimensional wake of a surface- mounted finite-height square prism of small aspect ratio (023) Barbara L. da Silva
4:30 p.m.	Generation of representative on-road yaw distributions in a model-scale automotive wind tunnel (066)	Interaction between two spheres falling side by side across a liquid-liquid interface (070) Eunseong Moon, Dohyun Kim, Daegyoum Kim

	C.S. Kandias, G. Cacho, D. Van	
	Every, P. Waudby-Smith, R. Hanson	
4:50 p.m.	Impact of porous material morphology on	Flow around surface-mounted rectangular
	the sensitivity of triboelectric sound sensors	flat plates of low aspect ratio at different
	(087)	angles of attack (084)
	Mohammad M. Rastegardoost, Siros	K. Baron, E. Montes Gomez, D.
	Khorshidi, Zia Saadatnia, Hani E.	Sumner
	Naguib	
5:10 p.m.	Design and analysis of full-scale truncated	Flexible membranes in bluff body flows: a
	wind tunnel slat model for aeroacoustic	review (089)
	testing (118)	Roham Lavimi, Clément Rouaix,
	Abhijit Roy, Daniel Foster, Alis	Horia Hangan
	Ekmekci	
5:30 p.m.	Surface airflow sensor based on flexible	Linear and nonlinear processes in stratified
	magnetic cilia (051)	turbulence with mean shear (107)
	Zhijian Wen, Yang Liu, Jiamin Chen,	Hideshi Hanazaki, Ayush Parajuli,
	Wenchao Yang	Shinya Okino
5:50 p.m. – 6:00 p.m.	Break	
6:00 p.m. – 8:00 p.m.	Welcome Reception and Tour of Automo	otive Centre of Excellence (ACE)

### Tuesday, July 29, 2025

8:30 a.m. – 10:10 a.m.	Technical Sessions 4 (Science Building)	
	Session 4A (Room UA1120) Acoustics 2 Session Chair: Joana Rocha	Session 4B (Room UA1140) <b>Energy Harvesting</b> Session Chair: Marwan Hassan
8:30 a.m.	Noise source localisation from the interaction of anisotropic turbulence with a flat plate serrated leading-edge (021) Sophia Nicole Rueda Pablo, Con Doolan, Charitha de Silva, Danielle Moreau	Energy harvesting using a one-degree-of- freedom pendulum with and without wake interference (009) <i>Francisco Huera-Huarte</i>
8:50 a.m.	Control of aerodynamic noise from an axial fan in a narrow duct using a resonator-type silencer (061) Hiroshi Yokoyama, Yuto Saito, Yoshiki Kawanishi, Takashi Kuraishi	Energy harvesting potential in pendular tandem cylinder systems (030) Patrick Batista Habowski, Adriane Prisco Petry, Sergio Viçosa Möller, Atef Mohany
9:10 a.m.	Dynamics of the separating and reattaching flow in the flap cove of the 30P30N high-lift airfoil (054) Marinus K. Okoronkwo, Hadar Ben- Gida, Oksana Stalnov, Stephane Moreau, Philippe Lavoie	Vortical structures around a vertical-axis wind turbine (041) Sangwoo Ahnn, Haecheon Choi
9:30 a.m.	The effects of the sweep angle on slat noise characteristics of the 30P30N high-lift model and an investigation of the noise generated by slat accessories (077) Raymond Alsaif, Alis Ekmekci	Efficient ocean wave energy harvesters; an adaptable system (006) Aref Afsharfard, Kyung Chun Kim
9:50 a.m.		Geometry-resolved aero-servo-elastic simulation of an airborne wind energy system (104) Niels Pynaert, Maxim Notable, Thomas Haas, Jolan Wauters,

		Guillaume Crevecoeur, Joris Degroote
10:10 a.m. – 10:50 a.m.	<b>Keynote Lecture</b> (Dr. Peter Zakarow Auditorium UA1350, Science Building) Session Chair: David Sumner	
	<b>Prof. Yu Zhou</b> Progress in artificial intelligence control of	turbulence
10:50 a.m. – 11:20 a.m.	Coffee Break (Atrium, Science Building)	
11:20 a.m. – 12:00 p.m.	Plenary Lecture (Dr. Peter Zakarow Auditorium UA1350, Science Building)         Session Chair: David Sumner         Prof. Njuki Mureithi         Selected problems in flow-induced vibration of nuclear plant components	
12:00 p.m. – 12:10 p.m.	Symposium Photo (Polonsky Commons)	
12:10 p.m. – 1:30 p.m.	Lunch (South Village Dining Hall)	
1:30 p.m. – 3:10 p.m.	Technical Sessions 5 (Science Building)	
	Session 5A (Room UA1120) Fluid-Structure Interaction 2 Session Chair: Frédérick Gosselin	Session 5B (Room UA1140) <b>Wakes 2</b> Session Chair: Amro Elhelaly
1:30 p.m.	FSI study of flexible flippers for uncrewed vessels (026) Xi Lin, Hemant Singh, John Young, Fang-Bao Tian	Assessment of universal wake behaviour for two-dimensional bluff bodies (010) David Sumner
1:50 p.m.	Effect of flow pulsation on the stability of Tollmien-Schlichting and travelling-wave flutter in a compliant-walled channel (045) Mohammad Ramezani, Julien Cisonni, Kostas Tsigklifis, Anthony Lucey	Impact of an elliptical rear design of the Ahmed body on drag and soiling (097) Naseeb Ahmed Siddiqui, Martin Agelin-Chaab
2:10 p.m.	Experimental insights into transverse fluidelastic instability of triangular tube arrays under single-phase and two-phase cross-flows (059) Domenico Panunzio, Philippe Piteau, José Antunes	Instantaneous reattachment and stagnation points for surface-mounted low-aspect-ratio square prisms (085) <i>L. Fradette, B. Petreny, D. Sumner</i>
2:30 p.m.	Fluid torque acting on a tumbling plate (074) Katsuya Hirata, Hiroaki Mihara, Itsuki Yamamoto, Ayumu Mizutani	An analysis into the wing-tip vortex kinematics of a supercritical airfoil at moderate angle of attack (081) Satoshi Baba, Guang C. Deng, Hadar Ben-Gida, Stéphane Moreau, Oksana Stalnov, Philippe Lavoie
2:50 p.m.	Kirigami sheets in uniform and disturbed fluid flow (111) Adrian Carleton, Yahya Modarres- Sadeghi	On the supersonic separation of two bodies with different ballistic coefficients (053) Vladislav Lukashenko, Fedor Maksimov
3:10 p.m. – 3:40 p.m.	Coffee Break (Atrium, Science Building)	
3:40 p.m. – 5:20 p.m.	Technical Sessions 6 (Science Building)	
	Session 6A (Room UA1120) Flow-Induced Vibration 1	Session 6B (Room UA1140) Jets 2

	Session Chair: Danielle Moreau	Session Chair: Joseph Hall
3:40 p.m.	Stall flutter response to longitudinal gusts at transitional Reynolds numbers (057) Xiaoyang Zhang, Dominique Poirel, Weixing Yuan	Al-based virtual engineering technique for active drag reduction of a maglev train (073) <i>Wan Z.R., Deng G.M., Xi L.C., Zhou Y.</i>
4:00 p.m.	Flow-induced vibration of separated two- phase flow in a piping structure with multiple elbows (065) Olufemi E. Bamidele, Wael H. Ahmed, Marwan Hassan	Dynamic flow vectoring by an array of synthetic jet actuators (080) Hossein Khanjari, Ronald Hanson
4:20 p.m.	Work-rate measurements of tubular bundles in single-phase cross flow (117) Amro Elhelaly, Atef Mohany, Marwan Hassan	Combined active and passive excitation of a jet: toward the transition control and enhanced turbulent mixing (072) <i>Linar Gareev, Oleg Ivanov, Vladimir</i> <i>Trifonov, Vasily Vedeneev</i>
4:40 p.m.	Proper orthogonal decomposition analysis of a cylinder fitted with a spanwise tripwire undergoing flow induced vibrations (060) <i>Alis Ekmekci, Pouya Mohtat</i>	Optimized microjet array for drag reduction of a high Reynolds number turbulent boundary layer (093) (Recorded Presentation) Zhang E.D., Wei X.H., Zhou Y.
5:00 p.m.	Performance of flow-induced vibrational power generator by a cantilevered circular cylinder with a finite-length splitter plate (049) Takahiro Kiwata, Haruki Mitani, Mohamed Heragy, Toshiyuki Ueno, Alis Ekmekci	Al-directed drag reduction of an Ahmed body using five independently controlled jet arrays (014) (Recorded Presentation) Yuying Lin, Yukuan Song, Yu Zhou
5:20 p.m.	End of Tuesday activities / supper on own – restaurants off campus are within walking distance	
TBD	International Organising Committee Meeting (invitation only)	
TBD	International Organising Committee Dinne	er (invitation only)

### Wednesday, July 30, 2025

8:30 a.m. – 10:30 a.m.	Technical Sessions 7 (Science Building)	
	Session 7A (Room UA1120)	Session 7B (Room UA1140)
	Acoustics 3	Flow Control
	Session Chair: Alis Ekmekci	Session Chair: Joaquin Moran
8:30 a.m.	The noise radiation and unsteady wall pressure of a tip clearance flow under adverse pressure gradient (035) <i>Manuj Awasthi, Andre Vumbaca,</i> <i>Tingyi Zhang, Con Doolan, Danielle</i> <i>Moreau</i>	Experimental study of variable-incidence angle vortex generators for leading-edge roughness of wind turbine blades (039) Donggeun Kim, SeongWoo Park, Jong-Seob Han
8:50 a.m.	Effect of acoustic boundary conditions of the gas column on the resonance frequencies in burnt gas of hydrogen-containing mixture (098) Yusei Kimura, Akane Uemichi	Hydrodynamic response of a magnetic disk swarm floating on a free surface (064) Dohyun Kim, Eunseong Moon, Daegyoum Kim
9:10 a.m.	Flow-excited acoustic resonance from two tandem square rods (110) <i>Amin Nasrollah, Atef Mohany</i>	Aerodynamic and acoustic characteristics of propeller with mixed serration aspect ratio (040) ChangJin Hong, HyunKyum Kim, JinTae Kim, JongSeob Han

9:30 a.m.	Break	Break
9:35 a.m.	Suppression of flow-induced acoustic resonance from a cylinder using a splitter plate (086) Rasha Noufal, Hossam Kishawy, Atef Mohany	Integrated AI-based optimization of geometric and active control parameters for drag reduction of an underwater vehicle model (016) <i>W.L. Zhao, G.M. Deng, Y. Zhou</i>
9:55 a.m.	Aeroacoustics radiation of a two-bladed rotor with flexible blades (048) <i>F. Hassenforder, S. Prothin, N. Doué</i>	Genetic algorithm-based optimization of miniature vortex generators for drag reduction in turbulent boundary layers (100) Zihuang Yu, Kai Zhang, Zhi Wu, Hongquan Zhang, Yu Zhou
10:15 a.m.	TBD	TBD
10:35 a.m. – 10:50 a.m.	Coffee Break (Atrium, Science Building)	
10:50 a.m. – 11:30 a.m.	<ul> <li>Plenary Lecture (Dr. Peter Zakarow Auditorium UA1350, Science Building) Session Chair: Horia Hangan</li> <li>Prof. Stéphane Moreau</li> <li>Wall-pressure fluctuations: a bridge between aeroacoustics, vibroacoustics and aeroelasticity</li> </ul>	
11:30 a.m. – 1:00 p.m.	Lunch (South Village Dining Hall)	
1:00 p.m.	Buses Leave for Niagara Falls (for those with pre-purchased tickets only)	
2:00 p.m. – 6:00 p.m.	Explore Niagara Falls	
4:00 p.m. – 6:00 p.m.	Guided Tour of the historic Niagara Falls Power Station	
6:30 p.m. – 7:00 p.m.	Reception (for those with pre-purchased tickets only)	
7:00 p.m. – 8:30 p.m.	Symposium Dinner (for those with pre-purchased tickets only)	
8:30 p.m.	Buses Leave for Ontario Tech University and Holiday Inn Express & Suites	
10:30 p.m.	Buses Arrive at Ontario Tech University and Holiday Inn Express & Suites	

## Thursday, July 31, 2025

8:30 a.m. – 10:10 a.m.	Technical Sessions 8 (Science Building)	
	Session 8A (Room UA1120)	Session 8B (Room UA1140)
	Fluid-Structure Interactions 3	Flow-Induced Vibration 2
	Session Chair: José Antunes	Session Chair: Motoaki Kimura
8:30 a.m.	Effect of support clearance on the	Flow induced vibration in a mixed geometry
	fluidelastic response of rotated square tube	tube array (083)
	arrays (101)	Pegah Mehrabian, Njuki Mureithi
	Amro Elhelaly, Joaquin Moran, David	
	Dawson, Marwan Hassan	
8:50 a.m.	Modelling fluidelastic instability in rotated	A novel decay friction model with natural
	square tube arrays (115)	continuity (058)
	Amro Elhelaly, David Dawson, Salim	Abdallah Hadji, Njuki Mureithi
	El Bouzidi, Marwan Hassan	

9:10 a.m.	Fluctuating surface pressure response of a	Vortex-induced vibration of the circular
0.10 4.111.	small rotor exposed to an impinging jet (029)	cylinder near of the seabed including seabed
	Justin Malkki, Yendrew Yauwenas,	erosion (099)
	Con Doolan, Danielle Moreau	Oleg Ivanov, Anastasiia Shishaeva
9:30 a.m.	Experimental study and parametric analysis	Direction-adaptive energy harvesting using
	of the nonlinear aeroelastic dynamics of a	flow induced torsional oscillation of tandem
	pitching flexible cantilever (112)	cylinders (063)
	David van Herpt, Dominique Poirel,	Juncheng Shen, Lang Li, Mark A.
	David Clarabut	Stremler, Wenchao Yang
9:50 a.m.	Theoretical investigation of a partially	Experimental investigation of rotational
	confined pipe simultaneously subjected to	vortex-induced vibrations of a circular
	internal aspirating and external discharging	cylinder attached to an elastic beam (050)
	flows (076)	Yaroslav Demchenko, Oleg Ivanov,
	Darya Mirhosseini, Arun K. Misra, Michael P. Païdoussis	Vasily Vedeneev
10:10 a.m. – 10:40 a.m.	Coffee Break (Atrium, Science Building)	
10:40 a m 10:00 m m	Technical Sessions 9	
10:40 a.m. – 12:00 p.m.	Technical Sessions 9	
	Session 8A (Room UA1120)	Session 9B (Room UA1140)
	Acoustics 4	Machine Learning/Al
	Session Chair: Zia Saadatnia	Session Chair: Yu Zhou
10:40 a.m.	Flap tip vortex dynamics contributing to	Machine learning strategies for accelerating
	noise generation (079)	partitioned fluid-structure interaction
	Neil Farvolden, Hadar Ben-Gida, Oksana	simulations (094)
	Stalnov, Philippe Lavoie	A. Tiba, T. Dairay, F. De Vuyst, J.P.
		Ramirez, I. Mortazavi
11:00 a.m.	Analysis of wake evolution and noise spectra	Analysis of the Duffing nonlinear oscillator
	of a ship propeller using large-eddy	using tropical algebra and physics informed
	simulation: effects of optimized boss cap with fin-foil and wavy rudder (113)	neural networks (067) Carla Victoria Valencia-Negrete,
	Mohammad-Reza Pendar, Duncan	Alonso Octavio Andapia-Viveros,
	Molnammad Mezar Chidal, Duncan McIntyre, Peter Oshkai	Marco Favela-Rodríguez
11:20 a.m.	Investigation of vortex dynamics and radiated	Sparse Bayesian learning of nonlinear
11.20 d.m.	noise sources of the Voith-Schneider	aerodynamics for aeroelastic limit cycle
	propeller with LES (114)	oscillations using wind-tunnel data (108)
	Duncan McIntyre, Mohammad-Reza	David Clarabut, Brandon Robinson,
	Pendar, Michael Palm, Peter Oshkai	Rimple Sandhu, Mohammad Khalil,
		Chris Pettit, Dominique Poirel,
		Abhijit Sarkar
11:40 a.m.	On spatiotemporal evolution of wall noise	Nonlinear aeroelastic prediction using
	sources in high-speed dual-impinging jets:	sparse Bayesian physics-informed neural
	Fast-pressure sensitive paint and	network (109)
	microphone correlation aeroacoustic	Nastaran Dabiran, Brandon
	measurement (037)	Robinson, Dominique Poirel, Abhijit
	Haoyuan Zhang, Hyung Jin Sung, Di Pong, Vingzhong Liu, and Pong Wang	Sarkar
12:00 p.m. – 12:30 p.m.	Peng, Yingzheng Liu, and Peng Wang Closing Session (Dr. Peter Zakarow Audito	Langer Lianger Science Building
12:30 p.m. – 2:00 p.m.	Lunch (South Village Dining Hall)	