

Euromech Colloquium 654 –Program

Wednesday July 9, 2025

8:00-9:00	Registration
9:00-9:10	Welcome and opening
	Session #1 – Chair: Chandan Bose
9:10-9:35	B. Thiria. “Subtle frequency matching reveals resonant phenomenon in the flight of Odonata”
9:35-10:00	C. García-Baena et al. “Three-dimensional deformation and aerodynamic performance in insect-inspired flapping wings”
10:00-10:25	S. Saha et al. “Wing kinematics and drift compensation by <i>Pantala flavescens</i> in tailwind and crosswind.”
10:40-11:15	Coffee Break
	Session #2 – Chair: Karen Mulleners
11:15-11:40	A. Nitti et al. “On the shape-Reynolds number correlation in jellyfish locomotion”
11:40-12:05	A. Hoover & J. Mills “Emergent flow asymmetries from the metachronal motion of the soft flexible paddles of the gossamer worm”
12:05-12:30	T. Steinmann et al. “A morphological innovation enables a several-fold expansion of the ecological niche”
12:30-12:55	Y. Fu & S. Jung “Undulation dynamics inspired by snail and giant larvacean kinematics”
13:00-14:00	Lunch Break
	Session #3 – Chair: Oscar Flores
14:00-14:25	<i>Discussion 1</i>
14:25-14:50	G. Li et al. “An integrated fluid–structure–motion numerical framework for evaluating magnetically actuated soft robot swimming”
14:50-15:15	D. Choi et al. “Design optimization of soft nozzle for rotary propulsors”
15:15-15:40	D. Kolomenskiy et al. “Oscillator conditions in microinsect flight apparatus”
15:40-16:05	A. Khan et al. “Hydrodynamics of insect-like water surface locomotion”
16:05-16:40	Coffee Break
	Session #4 – Chair: Anne Cros
16:40-17:05	K. Dhileep et al. “Effect of flexion ratio on the performance of propulsive fins”
17:05-17:30	S. Tiomkin & J. W. Jaworski “Unsteady aerodynamic functions for membrane airfoils”
17:30-17:55	N. Sarkar et al. “A GPU-accelerated loosely coupled fluid structure interaction scheme for simulation of flow over mechanical heart valves”

Thursday July 10, 2025

	Session #5 – Chair: Ramiro Godoy-Diana
9:00-9:25	N. Widdup et al. “Bio-inspired flight for Martian exploration”
9:25-9:50	M. Lima “Phase-based control mechanisms for flight and swimming under vortex-dominated flows”
9:50-10:15	S. Otomo et al. “Unsteady force evaluation by vortex force map method at Reynolds numbers of 10 – 100”
10:15-10:40	X. Yang et al. “Vortex Force Map for Undulating Swimmers”
10:40-11:15	Coffee Break
	Session #6 – Chair: Christiana Mavroyiakoumou
11:15-11:40	G. Raynaud et al. “Shaping up to explore and exploit fluid-structure interactions of leaf-inspired shapes”
11:40-12:05	F. Huera-Huarte “Energy harvesting from VIV using a pendulum with and without wake interference”
12:05-12:30	R. Godoy-Diana et al. “Water-wave interactions with a horizontal submerged elastic plate”
12:30-12:55	K. Ahmed et al. “Fully coupled FSI simulation of a hydroelastic energy harvester with active and passive foil motion”
13:00-14:00	Lunch Break
	Session #7 – Chair: Marco de Tullio
14:00-14:25	<i>Discussion 2</i>
14:25-14:50	M. Khan et al. “Oscillatory foil propulsion in turbulence: Force and velocity fluctuations over a pitching foil”
14:50-15:15	S. Olivieri et al. “Bio-inspired flapping flight in a turbulent free stream”
15:15-15:40	A. Gayout & D. Lentink “Turbulence enhances bird tail aerodynamics”
15:40-16:15	Coffee Break
	Session #8 – Chair: Melike Kurt
16:15-16:40	H. Liu & D. Y. Wang “An active wall-turbulence drag reduction mechanism using dolphin-inspired skin microvibrations”
16:40-17:05	L.-U. Schrader & D. Das “Bio-inspired compliant coating for low-drag underwater drone”
17:05-17:30	C. Mavroyiakoumou et al. “Modeling flying formations as flow-mediated matter”
17:30-17:55	L. Chao & L. Li “Embodied hydrodynamic interactions in engineered and biological systems”
19:30	Conference dinner

Friday July 11, 2025

	Session #9 – Chair: Manuel Garcia-Villalba
9:00-9:25	A. Goza et al. “A compliant flapping flat plate with heterogeneous, aerodynamically optimal flexibility properties”
9:25-9:50	H. Saddal & C. Bose “Fluid-structure interaction of bio-inspired flexible flaps and morphing foils”
9:50-10:15	C. L. Jawetz et al. “Efficient undulatory swimming through engineered stiffness gradients”
10:15-10:40	F. Bouard et al. “Examination of bending rules in nature”
10:40-11:15	Coffee Break
	Session #10 – Chair: Swathi Krishna
11:15-11:40	J. G. Rivas-Iñiguez et al. “Oscillating reconfiguration of two side-by-side flexible plates”
11:40-12:05	N. Silin et al. “Flexible foil dynamics under shear flow: stabilization through spanwise modulation”
12:05-12:30	J. M. Camacho-Sánchez et al. “The effect of degrees-of-freedom on self-adaptive flaps for 3D blunt body drag reduction”
12:30-12:55	T. Engels. “Break a wing: numerical aerodynamics of flying insects with damaged wings”
13:00-14:00	Lunch Break
14:00-14:15	Closing remarks
14:30-15:30	Visit to Secession Museum

INFORMATION FOR PRESENTERS

All sessions will be held at “TU the Sky”, which is located at the 11th Floor of the BA Building in the Campus of Getreidemarkt 9, Vienna 1060.

Regular presentations will be 18 minutes long, with 5 minutes for questions and 2 minutes for transitions.

WIRELESS INTERNET CONNECTION

Wireless internet is available throughout the conference, enabling participants to use their own laptops and mobile devices.