The 2025 AIAA Region I Students Conference has been organized with the support of AIAA and ÉTS by the AIAA-ÉTS team, Prof. Ruxandra Botez, AIAA Fellow, Academic Advisor of the AIAA-ÉTS and Professor in the Systems Engineering Department.

École de Technologie Supérieure - Pavilion E
1220, rue Notre-Dame Ouest Montréal (QC) H3C 1K5

Thursday March 20 - Morning

Time		Events		
7:30 AM	7:45 AM	**Breakfast & Check-in**		
7:45 AM	8:00 AM			
8:00 AM	8:15 AM			
8:15 AM	8:30 AM	**Prof. Ruxandra Botez - System Engineering Department, École de Technologie Supérieure :** Welcome Remarks (Salon des Diplômés E2033, Pavilion E)		
8:30 AM	8:45 AM	**Mr. Angelo Iasiello - AIAA Executive Vice President, Strategy & International :** Welcome Remarks (Salon des Diplômés E2033, Pavilion E)		
8:45 AM	9:00 AM	**Buffer Time**		
		Room: E2021 Chair: Dr. Seyed Mohammad Hosseini, Co-Chair: Ms. Parisa Darvishmotevally	**Room: E2024** Chair: Ms. Clélia Durandet, Co-Chair: Mr. Hugo Roger	**Room: E2025** Chair: Mr. Léo Bodin, Co-Chair: Mr. Simon Laidet
9:00 AM	9:15 AM	1. LES modelling of NACA0025 airfoil with synthetic jets	2. Flow-Driven Rotor Simulations of Seyi-Chunlei Ducted Turbine	3.Mission SeaLion's Payload-Centric Design of a 3U CubeSat
9:15 AM	9:30 AM	Mira Kim (University of Toronto)	Seyi Oluwadare (Clarkson University)	Christopher Schappi (Old Dominion University)
9:30 AM	9:45 AM	4. IRMA: New Era for Interstellar Travel	5. Aerodynamic Characteristics and Flight Dynamics of a Morphing Wing versus Conventional Wing in Cruise Flight	6.Digital Twin for In-Space Operations
9:45 AM	10:00 AM	Christina Decker (University at Buffalo - The State University of New York)	Mir hossein Negahban (École de Technologie Supérieure)	Katelyn Burke (The Pennsylvania State University)
10:00 AM	10:15 AM	7. TLE Prediction using Machine Learning for Satellite Maneuver Detection	8. The Spectral Difference with Divergence Cleaning Method for 3D Simulations of Solar Magnetic Cycles	9.Evaluation of Tethered Satellite System Models for Simulating Post-Capture Debris Towing
10:15 AM	10:30 AM	Grégoire Marie (École de Technologie Supérieure)	Russell Hankey (larkson University)	Jason Zhang (University at Buffalo)
10:30 AM	10:45 AM	10. How to Fly Forever: A Parametric Design Study of LALE Solar UAV's	11. Fully Compressible Magnetohydrodynamic Simulations of Solar Convection Zones with CHORUS++	12.Advancing Space Situational Awareness: The SOBER Mission for Multispectral Space Object Observation
10:45 AM	11:00 AM	Ling Ming Kong (Toronto Metropolitan University)	Aidan Paoli (Clarkson University)	Lovejivan Sidhu (York University)
11:00 AM	11:15 AM	**Coffee Break**		
11:15 AM	11:30 AM	**Mr. Vincent Myrand Lapierre and Mr. Pierre-Olivier Tardif, from CAE :** High-Fidelity Flight Simulator Modeling and Modular Flight Test Data Analysis at CAE (Salon des Diplômés E2033, Pavilion E)		
11:30 AM	11:45 AM			
11:45 AM	12:00 PM			
12:00 PM	12:15 PM			
12:15 PM	12:30 PM	**Lunch** **Salon Pas Perdus A1600 - Pavilion A, 2nd Floor** **1100, rue Notre-Dame Ouest, Montréal (QC) H3C 1K3**		
12:30 PM	12:45 PM			
12:45 PM	1:00 PM			
1:00 PM	1:15 PM	**Buffer Time**		

Graduate Category	Undergraduate Category	Team Category
Space Systems and Exploration	Space Systems and Exploration	**Space Systems and Exploration**
Aerodynamics and Fluid Dynamics	Aerodynamics and Fluid Dynamics	**Aerodynamics and Fluid Dynamics**
Aircraft Design & Flight Testing	Aircraft Design & Flight Testing	**Aircraft Design & Flight Testing**
Propulsion Systems	Propulsion Systems	**Propulsion Systems**
Structures & Materials	Structures & Materials	**Structures & Materials**
Other	Other	**Other**

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École de Technologie Supérieure - Pavilion E
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Thursday March 20 - Afternoon

Time		Events		
		Room: E2021 Chair: Dr. Seyed Mohammad Hosseini, Co-Chair: Ms. Parisa Darvishmotevally	**Room: E2024** Chair: Ms. Clélia Durandet, Co-Chair: Mr. Hugo Roger	**Room: E2025** Chair: Mr. Léo Bodin, Co-Chair: Mr. Simon Laidet
1:15 PM	1:30 PM	13. Initial Systems Layout and Safety Analysis for the Flying-V Aircraft	14. Resolving Cellular Structures of an Oblique Detonation Wave Using High-Order Finite Volume Methods With Adaptive Mesh Refinement	**15. Design of a CubeSat Radio Telescope Constellation**
1:30 PM	1:45 PM	Joey Vézina (Concordia University)	Gavin Miller (University of Virginia)	Zevulun Lieberman (Worcester Polytechnic Institute)
1:45 PM	2:00 PM	16. Data-Driven Approach for Predicting Flight Dynamics under Various Conditions Using Deep Learning	17. High-Order Simulations of Solar and Planetary Convection Zones Using Oblate Cubed-Spheroid Shells	**18. Exploration of Hermean Polar Ice**
2:00 PM	2:15 PM	Maxime Szymanski (École de Technologie Supérieure)	Max Stephane (Clarkson University)	Hadley Douglas (University at Buffalo - The State University of New York)
2:15 PM	2:30 PM	19. Aircraft Trim Condition Detection Using Flight Test Data and Interval Analysis	20. Design, Challenges, and Innovations of the CREATeV Solar-Powered UAV	**21. Testing the Protective Ability of Liquid Crystal Glass for Photosensitive Components in the Space Environment**
2:30 PM	2:45 PM	Mouhamadou Wade (École de Technologie Supérieure)	Minsu Jou (Toronto Metropolitan University)	Maxwell Friedman (Worcester Polytechnic Institute)
2:45 PM	3:00 PM	22. Anomaly Detection and Analysis of Pilot Maneuvers through Trim condition evaluation	23. Scaling Laws for Empirical Tailsitter Design	**24. Aerodynamic Performance Enhancement of Co-Flow Jet Airfoil with Metamorphic Wing Mechanism**
3:00 PM	3:15 PM	Ilies Rampon (École de Technologie Supérieure)	Trevor Phair (University of Ottawa)	Rawsen Mitchell (Wentworth Institute of Technology)
3:15 PM	3:30 PM	25. Machine Learning Applications in Aircraft Trim Phase Analysis	26. Engine Performance Prediction using Flight Simulation Data for the Mitsubishi CRJ700 Regional Jet aircraft	**27. Design of Morph Wings with Tunable Properties for Ultralight Aircraft**
3:30 PM	3:45 PM	Alioune Cisse (École de Technologie Supérieure)	Elias Zohreh Nejad (École de Technologie Supérieure)	Demi Davis (Worcester Polytechnic Insitute)
3:45 PM	4:00 PM	**Coffee Break**		
4:00 PM	4:15 PM	**Mrs. Sandrine De Jesus Mota and Mr. Cyrille Leclere, from Airbus :** Airbus Canada and How It Pioneers Sustainable Aviation in Canada and Around the World (Salon des Diplômés E2033, Pavilion E)		
4:15 PM	4:30 PM			
4:30 PM	4:45 PM			
4:45 PM	5:00 PM			
5:00 PM	5:15 PM	**Mr. Walter Gordon - AIAA Region I AIAA Niagara Frontier Section :** "Once There Was an Arrow" Presentation (Salon des Diplômés E2033, Pavilion E)		
5:15 PM	5:30 PM			
5:30 PM	7:30 PM	**Social Event (Salon des Diplômés E2033, Pavilion E)**		

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Friday March 21 - Morning

Time		Events		
7:30 AM	7:45 AM	**Breakfast & Check-in**		
7:45 AM	8:00 AM			
8:00 AM	8:15 AM			
8:15 AM	8:30 AM			
8:30 AM	8:45 AM	**Mrs Kathy Baig - Chief Executif Officer, École de Technologie Supérieure :** Welcome Remarks & Aerospace Engineering at ÉTS (Salon des Diplômés - Pavilion E)		
8:45 AM	9:00 AM	**Buffer Time**		
		Room: E2021 Chair: Ms. Parisa Darvishmotevally, Co-Chair: Dr. Seyed Mohammad Hosseini	**Room: E2024** Chair: Mr. Hugo Roger, Co-Chair: Ms. Clélia Durandet	**Room: E2025** Chair: Mr. Simon Laidet, Co-Chair: Mr. Léo Bodin
9:00 AM	9:15 AM	28. Modeling of the Motor and Electronic Speed Controller of a Small UAV	29. Airfoil Design & Analysis Using Conformal Transformations	30. Design of a Water Vapor Generation System for Supplying Propellant to a Microwave Electrothermal Thruster
9:15 AM	9:30 AM	Lori Mazloomian (Toronto Metropolitan University)	Sarina Sohaili Yekta (Toronto Metropolitan University)	Nandini Kumbhojkar (Pennsylvania State University)
9:30 AM	9:45 AM	31. Design of a Simple, Modular Diagnostic Suite for Electrospray Propulsion Systems	32. Extraction of Induced and Wave Drag from CFD Solutions	33. Design and Analysis of a Self-Propelled Nanosatellite for a Mission Beyond Low Earth Orbit
9:45 AM	10:00 AM	Allison Bergenhus (Royal Military College of Canada)	Anja Vogel (The Pennsylvania State University)	Zoë Jaeger-Letts (Concordia University)
10:00 AM	10:15 AM	34. Turbofan modelling from Machine Learning and Simulated Flight Data	35. Large Eddy Simulation of Turbulent Flows Around Two Canoe Paddles	36. Dynamic Simulation of Small Satellite Hybrid Attitude Control Technology
10:15 AM	10:30 AM	Mahefatiana Andrianantara (École de Technologie Supérieure)	Peter Parrish (Clarkson University)	Theodore Sopchak (Wentworth Institute of Technology)
10:30 AM	10:45 AM	37. Strategic Framework for Future Adaptive Hybrid RPAS Models in Swarm Logistics	38. A 3D Surface Generation Tool for Block Boundaries for Turbomachinery Blade Passages	39. Particle Swarm Optimization-Based Costate Initialization for Minimum Time Transfers Between Cislunar Periodic Orbits
10:45 AM	11:00 AM	Armin Mahmoudi (Carleton University)	Justin Smart (University of Windsor)	Chloe Saldanha (University at Buffalo)
11:00 AM	11:15 AM	**Coffee Break**		
11:15 AM	11:30 AM	**Dr. Fassi Kafyeke from Bombardier** : Research and Development, Engine of Innovation in Aerospace (Salon des Diplômés E2033, Pavilion E)		
11:30 AM	11:45 AM			
11:45 AM	12:00 PM			
12:00 PM	12:15 PM			
12:15 PM	12:30 PM	**Lunch** **Salon Pas Perdus A1600 - Pavilion A, 2nd Floor** **1100, rue Notre-Dame Ouest, Montréal (QC) H3C 1K3**		
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Friday March 21 - Afternoon

Time		Events		
		Room: E2021 Chair: Ms. Parisa Darvishmotevally, Co-Chair: Dr. Seyed Mohammad Hosseini	**Room: E2024** Chair: Mr. Hugo Roger, Co-Chair: Ms. Clélia Durandet	**Room: E2025** Chair: Mr. Simon Laidet, Co-Chair: Mr. Léo Bodin
1:15 PM	1:30 PM	40. Environmental Footprint of General Aviation: A Comparative Study of Airframe Materials in Colombia	41. Numerical Analysis of Inlet Turbulence in an Airfoil Cascade	42. High-Fidelity Dynamics Modeling for Near-Earth and Cislunar Space Incorporating Non-Conservative Effects
1:30 PM	1:45 PM	Martin Zorrilla (Concordia University)	Melik Demirel (The Pennsylvania State University)	Audra Robinson (The Pennsylvania State University)
1:45 PM	2:00 PM	43. Surrogate-Based Thermal Risk Tool of Aircraft System Placement Optimization	44. Visual Exploration with UAVs: Solving the Next-Best-View Problem with Limited A Priori Information	45. Structural Analysis and Testing of a Student-Designed UAV Wing
2:00 PM	2:15 PM	Reem Mahmoud (McGill University)	Coleman Henner (The Pennsylvania State University)	Jack Snyder (Clarkson University)
2:15 PM	2:30 PM	46. Flying Qualities Analysis and Comparison Between an Airliner and a Fighter Jet Aircraft	47. Design of a Helium Recovery System for a Hypersonic Expansion Tunnel Facility	48. Design, Fabrication, and Installation of Morphing Control Surfaces for Small-Scale UAS
2:30 PM	2:45 PM	Pierrick Loranchet (École de Technologie Supérieure)	Phoebe Wonnacott (Rutgers University - New Brunswick)	Kyle Purser (Old Dominion University)
2:45 PM	3:00 PM	49. Enhancing Time and Frequency Response of an Inverted Pendulum Using the B Controller	50. Identifying and Mitigating Hub-Induced Power Losses in Ducted Wind Turbine	51. An Investigation into Metal-Based Energy Absorption Systems for Usage on Rotorcraft Landing Skids: Addressing Hard Landings and Repeated Impact Scenarios
3:00 PM	3:15 PM	Mohamed Djohor (École de Technologie Supérieure)	Gitvik Mamoria (Clarkson University)	Alex Duffy (The Pennsylvania State University)
3:15 PM	3:30 PM		52. The Design and Manufacture of a Dedicated Aeroelastically Scaled Flutter Demonstrator Aircraft	53. Fatigue Behaviors of Carbon Fiber Reinforced Plastics Integrated with Carbon Nanotubes
3:30 PM	3:45 PM		Ryan Hall (Clarkson University)	Thomas Barkauskas (The Pennsylvania State University)
3:45 PM	4:00 PM	**LARCASE Laboratory Tour**		
4:00 PM	4:15 PM			
4:15 PM	4:30 PM			
4:30 PM	4:45 PM	**Mr. Walter Gordon - AIAA Region I AIAA Niagara Frontier Section :** Awards Presentation (Salon des Diplômés E2033, Pavilion E)		
4:45 PM	5:00 PM			
5:00 PM	5:15 PM	**Closing Remarks - Mr. Mouhamadou Wade**, PhD Student, **Mr. Rojo Princy Andrianantara**, PhD Candidate, **Dr. Seyed Mohammad Hosseini**, **Prof. Ruxandra Botez**, AIAA-ÉTS Oragnisation Committee & **Mrs Lindsay Mitchell - AIAA Director, Regions, Sections and Student Branches**		
5:15 PM	5:30 PM			
5:30 PM	7:30 PM	**Social Event (Salon des Diplômés E2033, Pavilion E)**		

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