

3rd International Forum on Aerospace and Aeronautics

December 11-13, 2023 | San Diego, USA

Continuum
Forums



Final Program

AEROFORUM2023



<https://www.continuumforums.com/2023/aeroforum>

08:00-09:00 | Registrations

09:00 - 09:35	P	Title: Recent Investigations of Transonic, Supersonic, and Hypersonic Flow Phenomena Phil Ligrani, University of Alabama, USA
09:35 - 10:10	P	Title: Neutrino Radiation by Neutron Superfluid Vortex and Its Effects Qiuhe Peng, Nanjing University, China
10:10 - 10:45	P	Title: Smart Connected Manufacturing Nourredine Boubekri, University of North Texas, USA
10:45 - 11:10	I	Title: Compressive Properties of Strut Lattice Structure with Controlled Irregularity Okubo Satoshi, Tokyo Metropolitan Industrial Technology Research Institute, Japan

11:10 - 11:20 | Refreshment Break

11:20- 11:45	I	Title: A Multi Objective Optimization of Transonic Low Reynolds Number Airfoil Based on Improved Genetic Algorithm Zhaolin Chen, Nanjing University of Aeronautics and Astronautics, China
11:45 - 12:10	I	Title: A Dynamic Health Index Approach for Aviation Electrical Assets Based on the Detection of Partial Discharges and their Harmfulness Gian Carlo Montanari, Florida State University, USA
12:10 - 12:35	I	Title: Impact of Launch Vehicle Loads Requirements on Payload Design and Development Mahantesh Hiremath, SC Solutions, USA
12:35 - 13:00	I	Title: Rotor Blade Aerodynamic Innovation, Thrust and Power Eldad Avital, Queens Mary University, UK

13:00-13:10 | Group Photo

13:10 - 13:50 | Lunch

13:50 - 14:15	I	Title: Winglet Shape Aerodynamic Impact on the Performance of an Aircraft; A Structural Health Monitoring Approach Dees Haley, Kent State University, USA
14:15 - 14:40	I	Title: An Assumption to Philippine Air Transportation Sustainability in Global Pandemic: Way Forward Marwin Dela Cruz, Philippine State College of Aeronautics, Philippine
14:40 - 15:05	I	Title: Status and Future Prospects for X-Ray Polarimetry Raffaella Bonino, University of Turin, Italy
15:05 - 15:30	I	Title: High Sensitivity Magnetic Microscope with an Optically Pumped Magnetometer Young Jin Kim, Los Alamos National Laboratory, USA

15:30 - 15:55	I	Title: The Morphology of Ionic Liquid Taylor Cone on A Porous Emitter Under Electric Field Chengjin Huang , Shenzhen Technology University, China
15:55 - 16:05 Refreshment Breaks		
16:05 - 16:30	I	Title: Ab Initio Study on the Defects in Topological Semimetals Wei Cheng , Beijing Normal University, China
16:30 - 16:50	PP	Title: Optimization of the Construction and Utilization of Light Combat Unmanned Aerial Vehicles Using 3D Printing Daniel Krupniewski , Polish Air Force University, Poland
Special Invited Vortex Workshop Keynote Speakers		
17:00 - 23:59 US Pacific Time (9:00 am-4:00 pm Beijing Time, Dec. 12)		
17:00 - 18:00	I	Title: Hierarchical Clustering of Vortical Dynamics in Transitional Boundary Layers Kazuo Matsuura , Graduate School of Science and Engineering, Ehime University, Japan
18:00 - 19:00	I	Title: Towards Automated Vortex Analysis Through Axis Line Extraction Li Xi , Department of Chemical Engineering, McMaster University, Canada
19:00 - 20:00	I	Title: Liutex – A Unique and Rigorous Vortex Definition and Identification Chaoqun Liu , Department of Mathematics, The University of Texas at Arlington, USA
20:00 - 21:00	I	Title: Comparison of Liutex and Other Methods Based on Four Typical Vortex Models Yifei Yu , Department of Mathematics, The University of Texas at Arlington, USA
21:00 - 21:30 Break		
21:30 - 22:00	I	Title: Cardiac Vortex Formation and Disruption Sandra Rugonyi , Oregon Health & Science University, USA
22:00 - 22:30	I	Title: What is Liutex Oscar Alvarez , University of Texas at Arlington, USA
22:30 - 23:00	I	Title: Large Eddy Simulation by using Wang's Liutex Based Subgrid Model Emran Hossen , University of Texas at Arlington, USA
23:00 - 23:30	I	Title: Hurricane Visualization Using Liutex Oscar Alvarez , University of Texas at Arlington, USA
23:30 - 23:59	I	Title: Uniform Principal Decomposition of All Velocity Gradient Tensor Chenxi Ma , University of Texas at Arlington, USA
Closing the Conference of Day-1		

DAY 02 | December 12, 2023

Main Conference Virtual Presentations (AEROFORUM2023)

London Time Zone (GMT+0)

09:00 - 09:25	I	Title: Leading Edge Vortex Stability and Its Vorticity Transport Mechanisms Long Chen , Beihang University, China
09:25 - 09:50	I	Title: Aerial Cable Towed Robot Hao Xiong , Harbin Institute of Technology, China
09:50 - 10:15	P	Title: Self Perception, Self Prediction, Self Control, the Future of Electric Propulsion Liqui Wei , Harbin Institute of Technology, China
10:15 - 10:40	I	Title: An Improved Risk Prioritization Method for Propulsion System Based on Heterogeneous Information and Page Rank Algorithm Zhen Hua , Xi'an Jiaotong Liverpool University, China
10:40 - 11:05	I	Title: Numerical Study on Loss Evolution Mechanism of Linear Cascade with Leading Edge Cooling Holes Chiju Jiang , Beihang University, China
11:05 - 11:30	I	Title: A Study of Erosion Corrosion In Hydroprocessing Reactor Effluent Air Cooler (REAC) Systems Abdul Sandy , Beijing University of Chemical Technology, China
11:30 - 11:55	I	Title: Interstellar Travel Almost Fast as Light by Predicted Fifth Force from 5D-Relativity Detlef Hoyer , Technical University of Hamburg, Germany
11:55 - 12:20	I	Title: Drilling of Multi Material Stacks for the Assembly of Aeronautical Structures: From the Characterization of the Cutting Mechanisms to the Development of Smart Drilling Techniques Yann Landon , Paul Sabatier University - Toulouse III, France
12:20 - 12:45	I	Title: The Influence of Lepidoptera Wing Scales on Reducing Energy Dissipation During Flight Zuzanna Kunicka Kowalska , Kazimierz Wielki University, Poland
12:45 - 13:10	I	Title: Several Approaches in Contemporary Light Aircraft Aerodynamic Design Ivan Kostic , University of Belgrade, Serbia
13:10 - 13:35	I	Title: Increasing the Accuracy of the Gravitational Constant Valentyn Nastasenko , Kherson State Maritime Academy, Ukraine
13:35 - 14:15	P	Title: Studies on MagneHydrogen as AeroSpace Fuel Sir Ruggero Santilli , The Institute for Basic Research, USA
14:15 - 14:40	I	Title: An Improved Approach to the Predictability & Reliability of the Onset of Turbulence with Shocks Bjorn Sjogreen , NASA Ames Research Center, USA

End of the Main Conference Virtual Presentations

Vortex Workshop Virtual Presentations

17:00-23:59 US Pacific Time (9:00 am-4:00 pm Beijing Time, Dec. 13)

17:00 - 17:30	I	Title: Study of the Influence of Perturbation Parameters, Conjugate Heat Transfer, and Wall Roughness on Laminar Turbulent Transition William Machaca , Balseiro Institute, Argentina
17:30 - 18:00	I	Title: Vortex Identification and Its Influence on Particle Exposure Characteristics in A Realistic Human Nasal Airway Jingliang Dong , Institute for Sustainable Industries & Liveable Cities, Victoria University, Australia
18:00 - 18:30	I	Title: Liutex Identification in Turbulent Particle-Laden Channel Flows Farid Rousta , Clarkson University, USA
18:30 - 19:00	I	Title: CFD Simulations of Vortex Flow on Unstructured Grids for Rotorcraft Qiuying Zhao , The University of Toledo, USA
19:00 - 19:30	I	Title: Study on the Flow Field of Straight Bladed Vertical Axis Wind Turbines with Different Airfoils Guoqiang Tong , Northeast Agricultural University, China
19:30 - 20:00	I	Title: Impact of Slotted Blade on the Flow Field of Straight Bladed Vertical Axis Wind Turbines Haozhe Cheng , Northeast Agricultural University, China
20:00 - 21:00 Break		
21:00 - 21:30	I	Title: Identification of Vortex Boundaries in Three Dimensional Incompressible Flows Based on the Liutex Shear Interaction Jian-song Zhu , Soochow University, China
21:30 - 22:00	I	Title: Liutex and Deep Reinforcement Learning Based Active Flow Control Shang Jiang , Soochow University, China
22:00 - 22:30	I	Title: Simulation of Droplet Flow in a Baffle Plate: Application of Liutex and the Liutex Omega Criteria Shen Zhang , Tsinghua University, China
22:30 - 23:00	I	Title: Effect of Blade Tip Slot on the Distribution of Blade Tip Vortices in Horizontal Axis Wind Turbines Shengbing Yang , Northeast Agricultural University, Harbin, China
22:30 - 23:00	I	Title: Derivation of Unified Fluid Dynamics Equations for Viscous Flows in Both Rotating and Shearing Stat Shuaichen Zhu , Fudan University, China
23:30 - 23:59	I	Title: Numerical Study on Aerodynamic Performance of the Blade Airfoil for Wind Turbines during De-Icing Process Ting Zhang , Northeast Agricultural University, China

End of the Vortex Workshop Day-2 Virtual Presentations

DAY 03 | December 13, 2023**Vortex Workshop Virtual Presentations**

17:00-23:59 US Pacific Time (9:00 am-4:00 pm Beijing Time, Dec. 14)

17:00 - 17:30 I Title: Investigation on the Vortical Structures by the Liutex method in a Scalloped Riblets Controlled Turbulent Channel

Zhangdan Yu, Soochow University, China

17:30 - 18:00 I Title: Application of a Liutex Based Subgrid Stress Model in Flows Over Periodic Hills

Xin Dong, Soochow University, China

18:00 - 18:30 I Title: Liutex Based Direct Field Inversion and Machine Learning Framework in PHengLEI Solver

Jiajun Long, Nanjing University of Aeronautics and Astronautics, China

18:30 - 19:00 I Title: Vortex Structures Detected by Liutex Vectors in Underwater Supersonic Gas Jet Flows

Yi Huang, Beijing Institute of Astronautical System Engineering, China

19:00 - 19:30 I Title: Impact of Icing on the Flow Field of Wind Turbine Blades with Different Airfoils

Yingwei Zhang, Northeast Agricultural University, China

19:30 - 20:00 I Title: Research on Vortex Motion Mechanism and Artificial Intelligent Flow Control of Turbulent Boundary Layer

Xingrui Dong, University of Shanghai for Science and Technology, China

20:00 - 21:00 | Break

21:00 - 21:30 I Title: Modeling of Reynolds Stress Anisotropy by Neural Networks and Random Forests with Liutex-Induced Quantities as Inputs

Bolei Chen, Imperial College London, UK

21:30 - 22:00 I Title: Numerical Study on Loss Evolution Mechanism of Linear Cascade with Leading Edge Cooling Holes

Chiju Jiang, Beihang University, China

22:00 - 23:00 I Title: A Novel Noise Reduction Procedure

Yazdan Pedram Razi, San Jose State University, USA

23:00 - 23:30 I Open Discussion

23:30 - 23:59 I Open Discussion

End of the Vortex Workshop Day-3 Virtual Presentations



Next Edition Details:

AEROFORUM2024

4th International Forum on
Aerospace and Aeronautics

November 18-20, 2024 | Budapest, Hungary



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