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2020 INTERNATIONAL CONFERENCE ON UNMANNED AIRCRAFT SYSTEMS *ICUAS'20*

ICUAS '20 Technical Sessions and Content List

Technical Program for Wednesday September 2, 2020

WeA1	Macedonia Hall
Autonomy I (Regular Session)	
10:00-10:20	WeA1.1
<i>Deep Reinforcement Learning Automatic Landing Control of Fixed-Wing Aircraft Using Deep Deterministic Policy Gradient</i> , pp. 1-9.	
Tang, Chi	National Cheng Kung University
Lai, Ying-Chih	National Cheng Kung University
10:20-10:40	WeA1.2
<i>Extensions of the Open-Source Framework Aerostack 3.0 for the Development of More Interactive Flights between UAVs</i> , pp. 10-16.	
Giernacki, Wojciech	Poznan University of Technology
Cieślak, Jacek	Poznan University of Technology
Molina, Martin	Universidad Politecnica Madrid
Campoy, Pascual	Universidad Politecnica Madrid
11:00-11:20	WeA1.4
<i>An UAV Autonomous Maneuver Decision-Making Algorithm for Route Guidance</i> , pp. 17-25.	
Zhang, Kun	Northwestern Polytechnical University
Li, Ke	Northwestern Polytechnical University
He, Jianliang	Science and Technology on Electro-Optic Control Laboratory
Shi, Haotian	Northwestern Polytechnical University
Wang, Yongting	Science and Technology on Electro-Optic Control Laboratory
Niu, Chen	Xi'an Jiao Tong University
11:20-11:40	WeA1.5
<i>UAV Path-Following Strategy for Crossing Narrow Passages</i> , pp. 26-31.	
Gomes Caldeira, Alexandre	Universidade Federal De Viçosa
Vasconcelos, João Vítor	University Federal of Viçosa
Sarcinelli-Filho, Mário	Federal University of Espirito Santo
Brandao, Alexandre Santos	Federal University of Vicosa
11:40-12:00	WeA1.6
<i>Autonomous Drone with Ability to Track and Capture an Aerial Target</i> , pp. 32-40.	
Garcia Rivero, Manuel	FADA-CATEC

Caballero González, Rafael	FADA-CATEC
González Leiva, Fidel	FADA-CATEC
Viguria, Antidio	FADA-CATEC
Ollero, Anibal	University of Seville

WeA2	Kozani
Path Planning I (Regular Session)	
10:00-10:20	WeA2.1
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Orhan, Ethem Hakan	Turkish Aerospace Industries, Inc.
10:20-10:40	WeA2.2
<i>Collision Avoidance of Fixed-Wing UAVs in Dynamic Environments Based on Spline-RRT and Velocity Obstacle</i> , pp. 48-58.	
Zhang, Shuiqing	Sun Yat-Sen University
Xu, Tianye	Sun Yat-Sen University
Cheng, Hui	Sun Yat-Sen University
Liang, Fan	Sun Yat-Sen University
10:40-11:00	WeA2.3
<i>Generation of Window-Traversing Flyable Trajectories Using Logistic Curve</i> , pp. 59-65.	
Upadhyay, Saurabh	University of Bristol
Richards, Arthur	University of Bristol
Richardson, Thomas	University of Bristol
11:00-11:20	WeA2.4
<i>UAV-Deployment for City-Wide Area Coverage and Computation of Optimal Response Trajectories</i> , pp. 66-71.	
Tsoukalas, Athanasios	New York University Abu Dhabi
Tzes, Anthony	New York University Abu Dhabi
Papatheodorou, Sotiris	Imperial College London
Khorrami, Farshad	New York University
11:20-11:40	WeA2.5
<i>2D and 3D A* Algorithm Comparison for UAS Traffic Management Systems</i> , pp. 72-76.	
Pötter Neto, Carlos Augusto	Instituto Tecnológico De Aeronáutica
de Carvalho Bertoli, Gustavo	Instituto Tecnológico De Aeronáutica
Saotome, Osamu	Instituto Tecnológico De Aeronáutica
11:40-12:00	WeA2.6
<i>UAV 3D Path and Motion Planning in Unknown Dynamic Environments</i> , pp. 77-84.	
Margraff, Julien	University of Limoges
Stephant, Joanny	University of Limoges
Labbani-Igbida, Ouidad	University of Limoges

WeA3		Edessa
Swarms (Regular Session)		
10:00-10:20		WeA3.1
<i>Formation Control and Target Interception for Multiple Multi-Rotor Aerial Vehicles</i> , pp. 85-92.		
Karras, George		University of Thessaly
Bechlioulis, Charalampos		National Technical University of Athens
Fourlas, George K.		University of Thessaly
Kyriakopoulos, Kostas J.		National Technical University of Athens
10:20-10:40		WeA3.2
<i>Cooperative Game Theory Based Multi-UAV Consensus-Based Formation Control</i> , pp. 93-99.		
Jiang, Liwei		University of Stuttgart
Gonzalez, Luis Felipe		Queensland University of Technology
Mcfadyen, Aaron		Queensland University of Technology
10:40-11:00		WeA3.3
<i>Distributed Algorithm for the Navigation of a Swarm of Nano-Quadrotors in Cluttered Environments</i> , pp. 100-109.		
Karydes, Florian		Ecole Polytechnique De Montréal
Saussie, David		Ecole Polytechnique De Montréal
11:20-11:40		WeA3.5
<i>Wilderness Search and Rescue with Heterogeneous Multi-Robot Systems</i> , pp. 110-116.		
Rodríguez, Marcos		Universidad Carlos III De Madrid
Al-Kaff, Abdulla		Universidad Carlos III De Madrid
Madridano, Angel		Universidad Carlos III De Madrid
Martín Gómez, David		Universidad Carlos III De Madrid
de La Escalera, Arturo		Universidad Carlos III De Madrid
11:40-12:00		WeA3.6
<i>Disturbance Perception Based Quadrotor UAV Maneuvering Formation against Unknown External Disturbance</i> , pp. 117-122.		
Guo, Kexin		Beihang University
Liu, Cai		Beihang University
Zhang, Xiao		Beihang University
Yu, Xiang		Beihang University
Guo, Lei		Beihang University
Zhang, Youmin		Concordia University

WeA4		Naousa
Control Architectures I (Regular Session)		
10:00-10:20		WeA4.1
<i>Distributed Multiple Model MPC for Target Tracking UAVs</i> , pp. 123-130.		
Wolfe, Sean		Royal Military College of Canada
Givigi, Sidney		Royal Military College of Canada
Rabbath, Camille Alain		DRDC
10:20-10:40		WeA4.2
<i>Constrained Control Allocation Approaches in Trajectory Control of a Quadrotor under Actuator Saturation</i> , pp.		

131-139.
 Tariq, Talha McGill University
 Nahon, Meyer McGill University

10:40-11:00 WeA4.3

Aerial Combat Tactics in Overwhelming Numbers, pp. 140-148.

Day, Michael	Georgia Tech Research Institute
Magree, Daniel	Georgia Tech Research Institute
DeMarco, Kevin	Georgia Tech Research Institute
Squires, Eric	Georgia Tech Research Institute
Strickland, Laura	Georgia Tech Research Institute
Vlahov, Bogdan	Georgia Tech Research Institute
Pippin, Charles	Georgia Tech Research Institute

11:00-11:20 WeA4.4

Longitudinal Dynamics Analysis and Autopilot Design for a Fixed-Wing, Tactical Blended-Wing-Body UAV, pp. 149-157.

Kitsios, Ioannis	Hellenic Air Force Electronics & Telecoms Depot
Dimopoulos, Thomas	Aristotle University of Thessaloniki
Panagiotou, Pericles	Aristotle University of Thessaloniki
Yakinthos, Kyriakos	Aristotle University of Thessaloniki

11:20-11:40 WeA4.5

Inertial Estimation and Energy-Efficient Control of a Cable-Suspended Load with a Team of UAVs, pp. 158-165.

Petitti, Antonio	National Research Council of Italy
Sanalidro, Dario	LAAS-CNRS
Tognon, Marco	ETH Zurich
Milella, Annalisa	Institute of Intelligent Industrial Technologies and Systems For
Cortés, Juan	LAAS-CNRS
Franchi, Antonio	University of Twente

11:40-12:00 WeA4.6

Differential Sweep Attitude Control for Swept Wing UAVs, pp. 166-175.

Harms, Marvin Chayton	ETH Zürich
Kaufmann, Noah	ETH Zürich
Rockenbauer, Friedrich Martin	ETH Zurich
Lawrence, Nicholas	The University of Sydney
Stastny, Thomas	ETH Zurich
Siegwart, Roland Y.	ETH Zürich

WeB1 Macedonia Hall

Autonomy II (Regular Session)

15:00-15:20 WeB1.1

Backstepping-Based Adaptive Fault-Tolerant Control Design for Satellite Attitude System, pp. 176-181.

Yan, Kun	Nanjing University of Aeronautics and Astronautics
Wu, Qingxian	Nanjing University of Aeronautics and Astronautics
Yang, Chenguang	University of the West of England

Chen, Mou	Nanjing University of Aeronautics and Astronautics
15:20-15:40	WeB1.2
<i>Disturbance Observer-Based Control of Quadrotors with Motor Response Delay and Throttle Nonlinearity</i> , pp. 182-187.	
Song, Yansui	Northwestern Polytechnical University
Liu, Xi	Unit 36485 of the Chinese People's Liberation Army
Xu, Bin	Northwestern Polytechnical University
Zhang, Yu	Zhejiang University
Yang, Chenguang	University of the West of England
16:00-16:20	WeB1.4
<i>Fuzzy Kinodynamic RRT: A Dynamic Path Planning and Obstacle Avoidance Method</i> , pp. 188-195.	
Chen, Long	Concordia University
Mantegh, Iraj	National Research Council Canada
He, Tong	Concordia University
Xie, Wenfang	Concordia University
16:20-16:40	WeB1.5
<i>Required Navigation Performance Specifications for Unmanned Aircraft Based on UTM Flight Trials</i> , pp. 196-203.	
Kallinen, Valtteri	Queensland University of Technology
Martin, Terrence	NOVA
Mcfadyen, Aaron	Queensland University of Technology
16:40-17:00	WeB1.6
<i>A Decentralized Framework to Support UAS Merging and Spacing Operations in Urban Canyons</i> , pp. 204-210.	
Balachandran, Sweewarman	National Institute of Aerospace
Manderino, Christopher	NSF Center for Space, High-Performance, and Resilient Computing
Munoz, Cesar	NASA Langley Research Center
Consiglio, Maria	NASA Langley Research Center
WeB2	Kozani
Path Planning II (Regular Session)	
15:00-15:20	WeB2.1
<i>UAS Flight Path Planning for Dynamic, Multi-Vehicle Environment</i> , pp. 211-219.	
He, Tong	Concordia University
Mantegh, Iraj	National Research Council Canada
Chen, Long	Concordia University
Vidal, Charles	National Research Council Canada
Xie, Wenfang	Concordia University
15:20-15:40	WeB2.2
<i>A Chaotic Path Planning Method for 3D Area Coverage Using Modified Logistic Map and a Modulo Tactic</i> , pp. 220-227.	
Moysis, Lazaros	Aristotle University of Thessaloniki
Petavratzis, Eleftherios	Aristotle University of Thessaloniki
Volos, Christos	Aristotle University of Thessaloniki

Nistazakis, Hector	Aristotle University of Thessaloniki
Stouboulos, Ioannis	Aristotle University of Thessaloniki
Valavanis, Kimon P.	University of Denver
15:40-16:00	WeB2.3
<i>Optimal Multi-Agent Coverage and Flight Time with Genetic Path Planning</i> , pp. 228-237.	
Olson, Jacob	Brigham Young University
Bidstrup, Craig	Uber ATG
Anderson, Brady	Brigham Young University
Parkinson, Alan	Brigham Young University
McLain, Tim	Brigham Young University
16:00-16:20	WeB2.4
<i>Fast Trajectory Optimization for Quadrotor Landing on a Moving Platform</i> , pp. 238-245.	
Zhang, Guoxu	Beijing Institute of Technology
Kuang, Hailiang	Beijing Institute of Technology
Liu, Xinfu	Beijing Institute of Technology
16:20-16:40	WeB2.5
<i>Unmanned Aerial Vehicle Trajectory Planning Via Staged Reinforcement Learning</i> , pp. 246-255.	
Xi, Chenyang	Beijing Institute of Technology
Liu, Xinfu	Beijing Institute of Technology
16:40-17:00	WeB2.6
<i>Optimization in Multiphase Homing Trajectory of Unpowered Parafoil with High-Altitude</i> , pp. 256-262.	
Guo, Yiming	Northwestern Polytechnical University
Jianguo, Yan	Northwestern Polytechnical University
Luo Yu, Yu	Shaanxi Polytechnic Institute
Wu, Cihang	Northwestern Polytechnical University
Li, Fenghao	Northwestern Polytechnical University
Xing, Xiaojun	Northwestern Polytechnical University
WeB3	Edessa
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<i>A Geometrical Approach Based on 4D Grids for Conflict Management of Multiple UAVs Operating in U-Space</i> , pp. 263-270.	
Acevedo, José Joaquín	University of Seville
Capitán, Carlos	University of Seville
Capitan, Jesus	University of Seville
Castaño, Ángel Rodríguez	University of Seville
Ollero, Anibal	University of Seville
15:40-16:00	WeB3.3
<i>Decentralized Task Allocation for Multiple UAVs with Task Execution Uncertainties</i> , pp. 271-278.	
Liu Ruifan	Northwestern Polytechnical University
Seo, Min-Guk	Cranfield University
Yan, Binbin	Northwestern Polytechnical University
Tsourdos, Antonios	Cranfield University

16:00-16:20 WeB3.4

Communication-Based and Communication-Less Approaches for Robust Cooperative Planning in Construction with a Team of UAVs, pp. 279-288.

Umili, Elena	Sapienza Università di Roma
Tognon, Marco	ETH Zurich
Sanalidro, Dario	LAAS-CNRS
Oriolo, Giuseppe	Sapienza Università di Roma
Franchi, Antonio	University of Twente

16:20-16:40 WeB3.5

Evaluation of Cooperative Guidance for Formation Flight of Fixed-Wing UAVs Using Mesh Network, pp. 289-294.

Kim, SuHyeon	Korea Aerospace University
Cho, Hyeong Jun	Korea Aerospace University
Jung, Dongwon	Korea Aerospace University

16:40-17:00 WeB3.6

Design, Implementation and Validation of a Multipurpose Localization Service for Cooperative Multi-UAV Systems, pp. 295-302.

Pignaton de Freitas, Edison	Federal University of Rio Grande Do Sul
Leite Francisco da Costa, Luis Antonio	Federal University of Rio Grande Do Sul
Emygdio de Melo, Carlos Felipe	Federal University of Rio Grande Do Sul
Basso, Maik	Federal University of Rio Grande Do Sul
Rodrigues Vizzotto, Marcos	Federal University of Rio Grande Do Sul
Schein Cavalheiro Corrêa, Mateus	Federal University of Rio Grande Do Sul
Dapper e Silva, Túlio	Federal University of Rio Grande Do Sul

WeB4 Naousa

Control Architectures II (Regular Session)

15:00-15:20 WeB4.1

Transition Control of a Tail-Sitter UAV Using Recurrent Neural Networks, pp. 303-309.

Flores, Alejandro	Center for Research in Optics
Flores, Gerardo	Center for Research in Optics

15:20-15:40 WeB4.2

Modeling and Control of Mid-Flight Coupling of Quadrotors: A New Concept for Quadrotor Cooperation, pp. 310-315.

Larsson, Daniel	Georgia Institute of Technology
Nguyen, Chuong	Arizona State University
Artemiadis, Panagiotis	University of Delaware

15:40-16:00 WeB4.3

Multibody Dynamic Modeling and Control of an Unmanned Aerial Vehicle under Non-Holonomic Constraints, pp. 316-321.

Lanteigne, Eric	University of Ottawa
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O'Reilly, Joshua	University of Ottawa
16:00-16:20	WeB4.4
<i>Trajectory Tracking Control for a Quadrotor with a Slung Load</i> , pp. 322-328.	
Rodriguez Cortes, Hugo	CINVESTAV-IPN
Mosco Luciano, Alan Paz	CINVESTAV-IPN
Castro-Linares, Rafael	CINVESTAV-IPN
16:20-16:40	WeB4.5
<i>Modeling and Control of a Novel Over-Actuated Tri-Rotor UAV</i> , pp. 329-338.	
Wang, Yunhe	Zhejiang University
Zhu, Zhangzhen	Zhejiang University
Zhang, Yu	Zhejiang University
WeC1	Macedonia Hall
Artificial Intelligence and Its Applications to Unmanned Flight Systems (Invited Session)	
Organizer: Liu, Hao	Beihang University
Organizer: Wang, Qingling	Southeast University
Organizer: Liang, Yang	Beihang University
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<i>Discrete Sliding Mode Tracking Control of Hypersonic Vehicle under Incomplete Data Transmission (I)</i> , pp. 339-347.	
Song, Jia	Beihang University
Zhang, Yanxue	Beihang University
Weng, Huiyan	Beihang University
Zhu, Hao	Beihang University
Yu, Nanjia	Beihang University
Cai, Guobiao	Beihang University
17:20-17:40	WeC1.2
<i>Robust Optimal Control Law Learning for Heterogeneous Rotorcraft Formation Involving Unknown Parameters (I)</i> , pp. 348-353.	
Liu, Hao	Beihang University
Meng, Qingyao	Beihang University
Liang, Yang	Beihang University
Tian, Hui	Beihang University
Junya, Yuan	Beihang University
17:40-18:00	WeC1.3
<i>Image-Based Visual Servo Control for Ground Target Tracking Using a Fixed-Wing UAV with Pan-Tilt Camera (I)</i> , pp. 354-361.	
Yang, Lingjie	National University of Defense Technology
Zhihong, Liu	National University of Defense Technology
Wang, Guanzheng	National University of Defense Technology
Wang, Xiangke	National University of Defense Technology
18:00-18:20	WeC1.4
<i>Implementation on Benchmark of SC2LE Environment with Advantage Actor - Critic Method (I)</i> , pp. 362-366.	
Hu, Huan	Southeast University

Wang, Qingling	Southeast University
18:20-18:40	WeC1.5
<i>Precipitation Forecast Based on Multi-Channel ConvLSTM and 3D-CNN (I)</i> , pp. 367-371.	
Dan, Niu	Southeast University
Diao, Li	Shanghai Jiao Tong University
Xu, Liujia	Southeast University
Zang, Zengliang	Institute of Meteorology and Oceanography, National University
Xisong, Chen	Southeast University
Liang, Shasha	Southeast University
WeC2	Kozani
Path Planning III (Regular Session)	
17:00-17:20	WeC2.1
<i>Evaluation of a Commercially Available Autonomous Visual Inertial Odometry Solution for Indoor Navigation</i> , pp. 372-381.	
Agarwal, Ankit	Pennsylvania State University
Crouse, Jacob	Pennsylvania State University
Johnson, Eric	Pennsylvania State University
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<i>Disturbance Observer-Based Integral Backstepping Control for UAVs</i> , pp. 382-388.	
Moeini, Amir	U of Alberta
Rafique, Muhammad Awais	U of Alberta
Xue, Zhijun	Huazhong University of Science & Technology
Lynch, Alan	U of Alberta
Zhao, Qing	U of Alberta
17:40-18:00	WeC2.3
<i>Spare Drone Optimization for Persistent Task Performance with Multiple Homes</i> , pp. 389-397.	
Hartuv, Erez	Bar-Ilan University
Agmon, Noa	Bar-Ilan University
Kraus, Sarit	Bar-Ilan University
18:00-18:20	WeC2.4
<i>HorizonBlock: Implementation of an Autonomous Counter-Drone System</i> , pp. 398-404.	
Souli, N.	University of Cyprus
Makrigiorgis, R.	University of Cyprus
Anastasiou, Andreas	University of Cyprus
Petrides, Petros	University of Cyprus
Zacharia, A.	University of Cyprus
Lazanas, A.	University of Cyprus
Valianti, Panayiota	University of Cyprus
Kolios, Panayiotis	University of Cyprus
Ellinas, G.	University of Cyprus
18:20-18:40	WeC2.5
<i>A Task-Oriented Assignment Algorithm for Collaborative Unmanned Aerial Systems</i> , pp. 405-411.	

Lindsay, Nathan	New Mexico State University
Sun, Liang	New Mexico State University
18:40-19:00	WeC2.6
<i>Wildfire Remote Sensing with UAVs: A Review from the Autonomy Point of View</i> , pp. 412-420.	
Bailon-Ruiz, Rafael	LAAS-CNRS
Lacroix, Simon	LAAS-CNRS
WeC3	Edessa
Networked Swarms II (Regular Session)	
17:00-17:20	WeC3.1
<i>Observer-Based Event-Triggered Model Reference Control for Multi-Agent Systems</i> , pp. 421-428.	
Vazquez Trejo, Juan Antonio	University of Lorraine
Rotondo, Damiano	University of Stavanger
Adam-Medina, Manuel	National Center for Research and Technological Development
Theilliol, Didier	University of Lorraine
17:20-17:40	WeC3.2
<i>Integrated Perception and Tactical Behaviours in an Auto-Organizing Aerial Sensor Network</i> , pp. 429-438.	
Leong, Wai Lun	National University of Singapore
Martinel, Niki	University of Udine
Huang, Sunan	National University of Singapore
Micheloni, Christian	University of Udine
Foresti, Gianluca	University of Udine
Teo, Rodney	Temasek Laboratories, National University of Singapore
17:40-18:00	WeC3.3
<i>Distributed UAV Formation Control with Prescribed Performance</i> , pp. 439-445.	
Gkesoulis, Athanasios	National Technical University of Athens
Psillakis, Haris	National Technical University of Athens
18:00-18:20	WeC3.4
<i>Swarm Control for Autonomous Navigation Support</i> , pp. 446-455.	
Gipson, Jonathon	Air Force Institute of Technology
Leishman, Robert	Air Force Institute of Technology
Schubert Kabban	Air Force Institute of Technology
18:20-18:40	WeC3.5
<i>Swarm Path Planning for the Deployment of Drones in Emergency Response Missions</i> , pp. 456-465.	
Anastasiou, Andreas	University of Cyprus
Kolios, Panayiotis	University of Cyprus
Panayiotou, Christos	University of Cyprus
Papadaki, Katerina	London School of Economics and Political Sciences
18:40-19:00	WeC3.6
<i>Designing and Flight-Testing a Swarm of Small UAS to Assist Post-Nuclear Blast Forensics</i> , pp. 466-472.	
Kopeikin, Andrew	US Military Academy
Russell, Conner	Army

Trainor, Hayden	United States Military Academy
Rivera, Ashley	United States Military Academy
Jones, Tyrus	United States Military Academy
Baumgartner, Benjamin	United States Military Academy
Manjunath, Pratheek	United States Military Academy
Heider, Samuel	DTRA
Surdu, Thomas	United States Military Academy
Galea, Matthew	United States Military Academy

WeC4	Naousa
Control Architectures III (Regular Session)	

17:00-17:20	WeC4.1
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Unified Controller for Take-Off and Landing for a Fixed-Wing Aircraft, pp. 473-479.

Montes de Oca Rebolledo, Andres	Center for Research in Optics
Flores, Gerardo	Center for Research in Optics

17:20-17:40	WeC4.2
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Target Tracking with Multi-Rotor Aerial Vehicles Based on a Robust Visual Servo Controller with Prescribed Performance, pp. 480-487.

Karras, George	University of Thessaly
Bechlioulis, Charalampos	National Technical University of Athens
Fourlas, George K.	University of Thessaly
Kyriakopoulos, Kostas J.	National Technical University of Athens

17:40-18:00	WeC4.3
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Path-Following with a UGV-UAV Formation Considering That the UAV Lands on the UGV, pp. 488-497.

Bacheti, Vinicius	Federal University of Espirito Santo
Brandao, Alexandre Santos	Federal University of Vicosa
Sarcinelli-Filho, Mário	Federal University of Espirito Santo

18:00-18:20	WeC4.4
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Adaptive Control Approaches for an Unmanned Aerial Manipulation System, pp. 498-503.

Chaikalis, Dimitris	New York University Abu Dhabi
Khorrami, Farshad	New York University
Tzes, Anthony	New York University Abu Dhabi

18:20-18:40	WeC4.5
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A Decentralized Approach for the Aerial Manipulator Trajectory Tracking, pp. 504-511.

Tlatelpa-Osorio, Y. Elizabeth	CINVESTAV-IPN
Rodriguez Cortes, Hugo	CINVESTAV-IPN
Acosta, Jose Angel	University of Seville

WeP5	Foyer Mezzanine Level
Poster Papers Session (Poster Session)	

13:00-18:00	WeP5.1
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Adaptive Fast Terminal Sliding Mode (FTSM) Control Design for Quadrotor UAV under External Windy Disturbances, pp. 512-516.

Shi, Xiaoyu	University of Electronic Science and Technology of China
Cheng, Yuhua	University of Electronic Science and Technology of China
13:00-18:00	WeP5.2
<i>Towards Long-Term Autonomy for UAS</i> , pp. 517-522.	
Mersha, Abeje Yenehun	Saxion University of Applied Sciences
Reiling, Mark	Saxion University of Applied Sciences
Meijering, Rene	Saxion University of Applied Sciences
13:00-18:00	WeP5.3
<i>Fast Nonlinear Model Predictive Control for Very-Small Aerial Vehicles</i> , pp. 523-528.	
Nascimento, Tiago	Universidade Federal da Paraiba
Saska, Martin	Czech Technical University in Prague
13:00-18:00	WeP5.4
<i>Controller Design for Highly Maneuverable Aircraft Technology Using Structured Singular Value and Direct Search Method</i> , pp. 529-533.	
Dlapa, Marek	Tomas Bata University in Zlin
13:00-18:00	WeP5.5
<i>LAIDR: A Robotics Research Platform for Entertainment Applications</i> , pp. 534-539.	
Elsharkawy, Ahmed	Gwangju Institute of Science and Technology
Naheem, Khawar	Gwangju Institute of Science and Technology
Lee, Yundong	Gwangju Institute of Science and Technology
Koo, Dongwoo	Gwangju Institute of Science and Technology
Kim, Mun Sang	Gwangju Institute of Science and Technology
13:00-18:00	WeP5.6
<i>Research on Meteorological Technology Development Using Rotary Multicopter Unmanned Aerial Vehicles and Its Application</i> , pp. 540-544.	
Chong, Jihyo	National Institute of Meteorological Sciences
Lee, Seungho	International Climate & Environment Center
Shin, Seungsook	National Institute of Meteorological Sciences
Hwang, SungEun	National Institute of Meteorological Sciences
Lee, Young Tae	National Institute of Meteorological Sciences
Kim, Seungbum	National Institute of Meteorological Sciences
13:00-18:00	WeP5.7
<i>Image-Based Sense and Avoid of Small Scale UAV Using Deep Learning Approach</i> , pp. 545-550.	
Huang, Zong-Ying	National Cheng Kung University
Lai, Ying-Chih	National Cheng Kung University
13:00-18:00	WeP5.8
<i>Collision Avoidance of SDRE Controller Using Artificial Potential Field Method: Application to Aerial Robotics</i> , pp. 551-556.	
Nekoo, Saeed Rafee	Universidad De Sevilla
Acosta, Jose Angel	Universidad De Sevilla
Ollero, Anibal	Universidad De Sevilla
13:00-18:00	WeP5.9
<i>Deep Learning Based Anomaly Detection for a Vehicle in Swarm Drone System</i> , pp. 557-561.	
Ahn, Hyojung	Korea Aerospace Research Institute

13:00-18:00	WeP5.10
<i>Good Choices: Technological and Ethical Considerations to Increase Public Trust in Unmanned Aerial Systems</i> , pp. 562-567.	
Coulter, Corina	University of Denver
Haring, Kerstin Sophie	University of Denver
13:00-18:00	WeP5.11
<i>C4ISR Systems Applied to Amazonian Constraints</i> , pp. 568-572.	
Machado Figueira, Nina	Brazilian Army
Niedermeier Belmonte, Giancarlo	Brazilian Army
Pignaton de Freitas, Edison	Federal University of Rio Grande Do Sul
13:00-18:00	WeP5.13
<i>Towards a Social-Media Driven Multi-Drone Tasking Platform</i> , pp. 573-581.	
Terzi, Maria	University of Cyprus
Kolios, Panayiotis	University of Cyprus
Panayiotou, Christos	University of Cyprus
Theocharides, Theocharis	University of Cyprus
13:00-18:00	WeP5.14
<i>Control System Design for Hybrid Power Supply of an Unmanned Aerial Vehicle Based on Linearized Averaged Process Models</i> , pp. 582-587.	
Krznar, Matija	University of Zagreb
Pavkovic, Danijel	University of Zagreb
Kozhushko, Yuliia	Igor Sikorsky Kyiv Polytechnic Institute
Cipek, Mihael	University of Zagreb
Zorc, Davor	University of Zagreb
Crneković, Mladen	University of Zagreb
13:00-18:00	WeP5.15
<i>Flight Controller Optimization of Unmanned Aerial Vehicles Using a Particle Swarm Algorithm</i> , pp. 588-593.	
Gomez Redondo, Nicolas Alberto	Universidad Nacional De Asunción
Gomez Valenzuela, Victor Sebastián	Universidad Nacional De Asunción
Paiva, Enrique	Universidad Nacional De Asunción
Rodas, Jorge	Universidad Nacional De Asunción
Gregor Recalde, Raul Igmar	Universidad Nacional De Asunción
13:00-18:00	WeP5.16
<i>A Probabilistic Based UAV Mission Planning and Navigation for Planetary Exploration</i> , pp. 594-599.	
Galvez, Julian	Queensland University of Technology
Gonzalez, Luis Felipe	Queensland University of Technology
Vanegas Alvarez, Fernando	Queensland University of Technology
Flannery, David Timothy	Queensland University of Technology

Technical Program for Thursday September 3, 2020

ThA1	Macedonia Hall
See-And-Avoid Systems I (Regular Session)	

10:00-10:20	ThA1.1
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A Novel Technique for Rejecting Non-Aircraft Artefacts in above Horizon Vision-Based Aircraft Detection, pp. 600-606.

James, Jasmin	Queensland University of Technology
Ford, Jason	Queensland University of Technology
Molloy, Timothy L.	University of Melbourne

10:20-10:40	ThA1.2
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Collision Detection and Avoidance System for Multicopter UAVs Using Optical Flow, pp. 607-614.

Urieva, Natallia	California State Polytechnic University, Pomona
McDonald, Jeffrey	California State Polytechnic University, Pomona
Ramos, April Sandy Rose	California State Polytechnic University, Pomona
Uryeva, Tatsiana	Mt. San Antonio Community College
Bhandari, Subodh	California State Polytechnic University, Pomona

10:40-11:00	ThA1.3
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Hybrid Motion-Based Object Detection for Detecting and Tracking of Small and Fast-Moving Drones, pp. 615-621.

Srirarom, Sutthiphong	National University of Singapore
Chew, Kim Hoe	Technical University of Munich

11:00-11:20	ThA1.4
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LiDAR Imaging-Based Attentive Perception, pp. 622-626.

Tsiourva, Maria	University of Nevada, Reno
Papachristos, Christos	University of Nevada, Reno

11:20-11:40	ThA1.5
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Monocular Vision-Based Obstacle Avoidance Trajectory Planning for Unmanned Aerial Vehicles, pp. 627-632.

Zhang, Zhouyu	Nanjing University of Aeronautics and Astronautics
Zhang, Youmin	Concordia University
Cao, Yunfeng	Nanjing University of Aeronautics and Astronautics

11:40-12:00	ThA1.6
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Obstacle Detection and Avoidance System for Small UAVs Using a LiDAR, pp. 633-640.

Moffatt, Andrew	California State Polytechnic University, Pomona
Platt, Eric	California State Polytechnic University, Pomona
Mondragon, Brandon	California State Polytechnic University, Pomona
Kwok, Aaron	California State Polytechnic University, Pomona
Uryeu, Dzianis	Walnut High School
Bhandari, Subodh	California State Polytechnic University, Pomona

ThA2	Kozani
Path Planning IV (Regular Session)	

10:00-10:20	ThA2.1
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A Risk-Based Path Planning Strategy to Compute Optimum Risk Path for Unmanned Aircraft Systems Over Populated Areas, pp. 641-650.

Primatesta, Stefano	Politecnico Di Torino
Scanavino, Matteo	Politecnico Di Torino
Guglieri, Giorgio	Politecnico Di Torino
Rizzo, Alessandro	Politecnico Di Torino
10:20-10:40	ThA2.2
<i>Optimal Mission Planning for Fixed-Wing UAVs with Electro-Thermal Icing Protection and Hybrid-Electric Power Systems</i> , pp. 651-660.	
Narum, Edvard Frimann Løes	Norwegian University of Science and Technology
Hann, Richard	Norwegian University of Science and Technology
Johansen, Tor Arne	Norwegian University of Science and Technology
10:40-11:00	ThA2.3
<i>Cooperative Path Planning for Multiple MAVs Operating in Unknown Environments</i> , pp. 661-667.	
Ahmad, Afzal	Czech Technical University in Prague
Vonasek, Vojtech	Czech Technical University in Prague
Saska, Martin	Czech Technical University in Prague
11:00-11:20	ThA2.4
<i>Exploring the Use of Reverse Thrust in a Dynamic UAS Landing Maneuver Using Kinodynamic RRT</i> , pp. 668-675.	
Givens, Matthew	University of Colorado Boulder
Coopmans, Calvin	Utah State University
11:20-11:40	ThA2.5
<i>A Recurrent Planning Strategy for UAV Optimum Path Identification in a Dynamic Environment Based on Bit-Coded Flight Maneuvers</i> , pp. 676-685.	
Bassolillo, Salvatore	University of Campania
Blasi, Luciano	Università Degli Studi Della Campania "L. Vanvitelli"
D'Amato, Egidio	University of Naples "Parthenope"
Mattei, Massimiliano	Seconda Università di Napoli
Notaro, Immacolata	University of Campania "Luigi Vanvitelli"
11:40-12:00	ThA2.6
<i>Exploiting Null Space in Aerial Manipulation through Model-In-The-Loop Motion Planning</i> , pp. 686-693.	
Ivanovic, Antun	University of Zagreb
Car, Marko	University of Zagreb
Orsag, Matko	University of Zagreb
Bogdan, Stjepan	University of Zagreb
ThA3	Edessa
UAS Applications I (Regular Session)	
10:00-10:20	ThA3.1
<i>UAV Target Tracking in Urban Environments Using Deep Reinforcement Learning</i> , pp. 694-701.	
Bhagat, Sarthak	IIT Delhi
P B, Sujit	IISER Bhopal
10:20-10:40	ThA3.2
<i>Autonomous Airborne Multi-Rotor UAS Delivery System</i> , pp. 702-708.	
Jackson, Seth	US Army

Riccoboni, Nena	United States Military Academy
Abdul Rahim, Abdul Halim	United States Military Academy
Tobin, Ronald	United States Military Academy
Bluman, James	United States Military Academy
Kopeikin, Andrew	United States Military Academy
Manjunath, Pratheek	United States Military Academy
Prosser, Ekaterina	US Army

10:40-11:00 ThA3.3

Autonomous Wind Turbine Inspection Using a Quadrotor, pp. 709-715.

Gu, Weibin	University of Denver
Hu, Dewen	Shanghai FOIA Co
Cheng, Liang	Shanghai FOIA Co
Cao, Yabing	Shanghai FOIA Co
Rizzo, Alessandro	Politecnico di Torino
Valavanis, Kimon P.	University of Denver

11:00-11:20 ThA3.4

Outdoor Navigation Using Two Quadrotors and Adaptive Sliding Mode Control, pp. 716-721.

Villa, Daniel Khede Dourado	Federal University of Espírito Santo
Brandao, Alexandre Santos	Federal University of Vicosa
Sarcinelli-Filho, Mário	Federal University of Espirito Santo

11:20-11:40 ThA3.5

Barrier Lyapunov Function Based Trajectory Tracking Controller for Autonomous Vehicles with Guaranteed Safety Bounds, pp. 722-728.

Kumar, Yogesh	IIT Delhi
Roy, Sayan Basu	IIT Delhi
P B, Sujit	IISER Bhopal

11:40-12:00 ThA3.6

POSITRON: Lightweight Active Positioning Compliant Joints Robotic Arm in Power Lines Inspection, pp. 729-736.

Perez Jimenez, Manuel	University of Seville
Montes Grova, Marco Antonio	University of Seville
Ramon Soria, Pablo	University of Seville
Arrue, B.C.	University of Seville
Ollero, Anibal	University of Seville

ThA4	Naousa
Control Architectures IV (Regular Session)	

10:00-10:20 ThA4.1

Robust Geometric Control of a Helicopter Using Sliding Mode Control, pp. 737-743.

B Krishna, Akhil	IIT Kanpur
Sen, Arijit	IIT Kanpur
Kothari, Mangal	IIT Kanpur

10:20-10:40 ThA4.2

Load Manipulation by a Triangular Formation of Quadrotors, pp. 744-753.

Ernandes-Neto, Valentim	Federal University of Espírito Santo
Brandao, Alexandre Santos	Federal University of Vicosa
Sarcinelli-Filho, Mário	Federal University of Espirito Santo

10:40-11:00 ThA4.3

Omni-Plus-Seven (O+7): An Omnidirectional Aerial Prototype with a Minimal Number of Uni-Directional Thrusters, pp. 754-761.

Hamandi, Mahmoud	LAAS-CNRS
Sawant, Kapil	IIT
Tognon, Marco	ETH Zurich
Franchi, Antonio	University of Twente

11:00-11:20 ThA4.4

Scaling Effects on Controllers for Multirotors, pp. 762-770.

Thai, Lam Ngoc	McGill University
Nahon, Meyer	McGill University
Charland-Arcand, Guillaume	ARA Robotics

11:20-11:40 ThA4.5

Vision-Based Autonomous Landing Using an MPC-Controlled Micro UAV on a Moving Platform, pp. 771-780.

Mohammadi, Alireza	University of Michigan-Dearborn
Feng, Yi	University of Michigan-Dearborn
Zhang, Cong	University of Michigan-Dearborn
Rawashdeh, Samir	University of Michigan-Dearborn
Baek, Stan	United States Air Force Academy

ThB1 Macedonia Hall

See-And-Avoid Systems II (Regular Session)

15:00-15:20 ThB1.1

Experimental Comparison of Fiducial Markers for Pose Estimation, pp. 781-789.

Kalaitzakis, Michail	University of South Carolina
Carroll, Sabrina	University of South Carolina
Ambrosi, Anand	University of South Carolina
Whitehead, Camden	University of South Carolina
Nikolaos, Vitzilaios	University of South Carolina

15:20-15:40 ThB1.2

Point Cloud-Based Target-Oriented 3D Path Planning for UAVs, pp. 790-798.

Zheng, Zhaoliang	University of California Los Angeles
Bewley, Thomas R.	University of California San Diego
Kuester, Falko	University of California San Diego

15:40-16:00 ThB1.3

Intercepting a Target Moving on a Racetrack Path, pp. 799-806.

Manyam, Satyanarayana Gupta	Infoscitex Corporation
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Casbeer, David	Air Force Research Laboratory
16:00-16:20	ThB1.4
<i>Mono-LSDE: Lightweight Semantic-CNN for Depth Estimation from Monocular Aerial Images</i> , pp. 807-814.	
Astudillo Olalla, Armando	Universidad Carlos III De Madrid
Al-Kaff, Abdulla	Universidad Carlos III De Madrid
Madridano, Angel	Universidad Carlos III De Madrid
García Fernández, Fernando	Universidad Carlos III De Madrid
Martín Gómez, David	Universidad Carlos III De Madrid
de La Escalera, Arturo	Universidad Carlos III De Madrid
16:20-16:40	ThB1.5
<i>Obstacle Avoidance Manager for UAVs Swarm</i> , pp. 815-821.	
Madridano, Angel	Universidad Carlos III De Madrid
Al-Kaff, Abdulla	Universidad Carlos III De Madrid
Flores Peña, Pablo	Drone Hopper S.L
Martín Gómez, David	Universidad Carlos III De Madrid
de La Escalera, Arturo	Universidad Carlos III De Madrid
16:40-17:00	ThB1.6
<i>From Simulation to Reality: A Implementable Self-Organized Collision Avoidance Algorithm for Autonomous UAVs</i> , pp. 822-831.	
Casas Melo, Victor Fernando	Technische Universität Ilmenau
Mitschele-Thiel, Andreas	Technische Universität Ilmenau
ThB2	Kozani
Safety, Security, and Reliability (Regular Session)	
15:00-15:20	ThB2.1
<i>Adaptive Fault-Tolerant Control of a Quadrotor Helicopter Based on Sliding Mode Control and Radial Basis Function Neural Network</i> , pp. 832-838.	
Wang, Ban	Northwestern Polytechnical University
Zhang, Wei	Northwestern Polytechnical University
Zhang, Lidong	China Aeronautical Radio Electronics Research Institute
Zhang, Youmin	Concordia University
15:20-15:40	ThB2.2
<i>H2 Optimized PID Control of Quad-Copter Platform with Wind Disturbance</i> , pp. 839-844.	
Kim, Sunsoo	Texas A&M University
Deshpande, Vedang Mohanrao	Texas A&M University
Bhattacharya, Raktim	Texas A&M University
15:40-16:00	ThB2.3
<i>Controller Design and Flight Experiments for the Dual Tilt Rotor Unmanned Aerial Vehicle in Helicopter Mode</i> , pp. 845-853.	
Zheng, Ruijian	Northeastern University
Gu, FENG	Shenyang Institute of Automation, Chinese Academy of Sciences
Liu, Zhong	Shenyang Institute of Automation Chinese Academy of Sciences

Zhou, Hao	Shenyang Institute of Automation, Chinese Academy of Sciences
He, Yuqing	Shenyang Institute of Automation, Chinese Academy of Sciences
16:00-16:20	ThB2.4
<i>Real-Time Motion Planning of Curvature Continuous Trajectories for Urban UAV Operations in Wind</i> , pp. 854-861.	
Patrikar, Jay	Carnegie Mellon University
Dugar, Vishal	Carnegie Mellon University
Arcot, Vaibhav	University of Pennsylvania
Scherer, Sebastian	Carnegie Mellon University
16:20-16:40	ThB2.5
<i>Transition Flight Dynamics of a Dual Tilt-Wing UAV</i> , pp. 862-866.	
Sanchez-Rivera, Luz	CINVESTAV
Lozano, Rogelio	University of Technology of Compiègne
AriasMontano, Alfredo	IPN ESIME Ticoman
16:40-17:00	ThB2.6
<i>A Data-Driven FCE Method for UAV Condition Risk Assessment Based on Feature Engineering and Variable Weight Coefficients</i> , pp. 867-874.	
Su, Xuanyuan	Beihang University
Tao, Laifa	Beihang University
Zhang, Tong	Beihang University
Cheng, Yujie	Beihang University
Ma, Jian	Beihang University
wang, chao	Beihang University
ThB3	Edessa
UAS Applications II (Regular Session)	
15:00-15:20	ThB3.1
<i>Design of a Quad-Jet VTOL UAS for Heavy-Lift Applications</i> , pp. 875-882.	
Türkmen, Abdullah	Istanbul Technical University
Altug, Erdinc	Istanbul Technical University
15:20-15:40	ThB3.2
<i>Unmanned Aerial Vehicle and Artificial Intelligence for Thermal Target Detection in Search and Rescue Applications</i> , pp. 883-891.	
McGee, Joseph John	Queensland University of Technology
Joseph Mathew, Sajith	Queensland University of Technology
Gonzalez, Luis Felipe	Queensland University of Technology
15:40-16:00	ThB3.3
<i>Design and Testing of Recycled 3D Printed Foldable Unmanned Aerial Vehicle for Remote Sensing</i> , pp. 892-901.	
Nieamnd, Jason	Queensland University of Technology
Joseph Mathew, Sajith	Queensland University of Technology
Gonzalez, Luis Felipe	Queensland University of Technology
16:00-16:20	ThB3.4
<i>OpenREALM: Real-Time Mapping for Unmanned Aerial Vehicles</i> , pp. 902-911.	
Kern, Alexander	Technical University Braunschweig

Bobbe, Markus	Technical University Braunschweig
Khedar, Yogesh	Technical University Braunschweig
Bestmann, Ulf	Technical University Braunschweig
16:20-16:40	ThB3.5
<i>An Integrated Tool to Compute the Dynamic Model and Assess the Lateral Controller Parameters of a UAV Equipped with a Piccolo Autopilot</i> , pp. 912-921.	
Dias Ferreira, Fernando	Portuguese Air Force Academy
Roque	
Oliveira, Tiago	Portuguese Air Force
Chá, Silvia	Portuguese Air Force Academy
16:40-17:00	ThB3.6
<i>Radar Based Autonomous Precision Takeoff and Landing System for VTOLs in GNSS Denied Environments</i> , pp. 922-931.	
Doer, Christopher	Karlsruhe Institute of Technology
Koenig, Ronja	RWTH Aachen University
Trommer, Gert F.	Karlsruhe Institute of Technology
Stumpf, Eike	RWTH Aachen University
ThB4	Naousa
Micro and Mini UAS I (Regular Session)	
15:00-15:20	ThB4.1
<i>Control Allocation of Bidirectional Thrust Quadrotor Subject to Actuator Constraints</i> , pp. 932-938.	
Jothiraj, Walter	McGill University
Sharf, Inna	McGill University
Nahon, Meyer	McGill University
15:20-15:40	ThB4.2
<i>High-Level Modeling and Control of the Bebop 2 Micro Aerial Vehicle</i> , pp. 939-947.	
Pinto, Anthony	Federal University of Espirito Santo
Marciano, Harrison	Federal University of Espirito Santo
Bacheti, Vinicius	Federal University of Espirito Santo
Mafra Moreira, Mauro	Federal University of Espirito Santo
Sergio	
Brandao, Alexandre Santos	Federal University of Vicosa
Sarcinelli-Filho, Mário	Federal University of Espirito Santo
15:40-16:00	ThB4.3
<i>Collision-Free Path Planning Based on a Genetic Algorithm for Quadrotor UAVs</i> , pp. 948-957.	
Gutierrez Martinez, Manuel Alejandro	CIIA-FIME-UANL
Rojo Rodriguez, Erik Gilberto	Universidad Autonoma De Nuevo Leon
Cabriaes Ramirez, Luis Enrique	CIIA-FIME-UANL
Reyes Osorio, Luis Arturo	CIIA-FIME-UANL
Castillo, Pedro	Université De Technologie De Compiègne
Garcia Salazar, Octavio	CIIA-FIME-UANL

16:00-16:20 ThB4.4

State and Parameter Estimation of Suspended Load Using Quadrotor Onboard Sensors, pp. 958-967.

Prkacin, Vicko	University of Dubrovnik
Palunko, Ivana	University of Dubrovnik
Petrović, Ivan	University of Zagreb

16:20-16:40 ThB4.5

UAV Flight Risk Identification and Evaluation Scheme, pp. 968-974.

Zhang, Zhaoyue	Civil Aviation University of China
Chaohui, Feng	Civil Aviation University of China
Wang, Zhisen	Civil Aviation University of China
Li, Shanmei	Civil Aviation University of China
Qingjun, Xia	Civil Aviation University of China

16:40-17:00 ThB4.6

The Solution Development for Performance Analysis and Optimal Design of Multicopter-Type Small Drones, pp. 975-982.

Oh, Soohun	Korea Aerospace Research Institute
Kim, Minwoo	Korea Aerospace Research Institute
Kim, Hyeongseok	Seoul National University
Lim, Daejin	Seoul National University
Yee, Kwanjung	Seoul National University
Kim, Dongmin	Korea Aerospace Research Institute

ThC1 Macedonia Hall
Sensor Fusion (Regular Session)

17:00-17:20 ThC1.1

GPS Denied Localization and Magnetometer-Free Yaw Estimation for Multi-Rotor UAVs, pp. 983-990.

Balaji, Naveen	Indian Institute of Technology Kanpur
Kothari, Mangal	Indian Institute of Technology Kanpur
Abhishek, Abhishek	Indian Institute of Technology Kanpur

17:20-17:40 ThC1.2

Joint Probabilistic Data Association Filter Using Adaptive Gibbs Sampling, pp. 991-997.

He, Shaoming	Cranfield University
Shin, Hyo-Sang	Cranfield University
Tsourdos, Antonios	Cranfield University

17:40-18:00 ThC1.3

Real-Time Moving Horizon Estimation of Air Data Parameters and Wind Velocities for Fixed-Wing UAVs, pp. 998-1006.

Wenz, Andreas Wolfgang	Norwegian University of Science and Technology
Johansen, Tor Arne	Norwegian University of Science and Technology

18:00-18:20 ThC1.4

Improved State Estimation in Distorted Magnetic Fields, pp. 1007-1013.

Brommer, Christian	University of Klagenfurt
Boehm, Christoph	University of Klagenfurt
Steinbrener, Jan	University of Klagenfurt

Brockers, Roland Weiss, Stephan	JPL, California Institute of Technology University of Klagenfurt
18:20-18:40	ThC1.5
<i>Semantic Situation Awareness of Ellipse Shapes Via Deep Learning for Multirotor Aerial Robots with a 2D LIDAR</i> , pp. 1014-1023.	
Sanchez-Lopez, Jose-Luis Castillo-Lopez, Manuel Voos, Holger	University of Luxembourg University of Luxembourg University of Luxembourg
18:40-19:00	ThC1.6
<i>Complementary Multi-Modal Sensor Fusion for Resilient Robot Pose Estimation in Subterranean Environments</i> , pp. 1024-1029.	
Khattak, Shehryar Nguyen, Dinh Mascarich, Frank Dang, Tung Alexis, Kostas	University of Nevada, Reno University of Nevada, Reno University of Nevada, Reno University of Nevada, Reno University of Nevada, Reno
ThC2	Kozani
Fail-Safe Systems (Regular Session)	
17:00-17:20	ThC2.1
<i>A Fault-Tolerant Control Scheme for Fixed-Wing UAVs with Flight Envelope Integration</i> , pp. 1030-1039.	
Zogopoulos Papaliakos, Georgios Karras, George Kyriakopoulos, Kostas J.	National Technical University of Athens University of Thessaly National Technical University of Athens
17:20-17:40	ThC2.2
<i>Agent Fault-Tolerant Strategy in a Heterogeneous Triangular Formation</i> , pp. 1040-1047.	
Vasconcelos, João Vítor Villa, Daniel Khede Dourado Gomes Caldeira, Alexandre Sarcinelli-Filho, Mário Brandao, Alexandre Santos	University Federal of Viçosa Federal University of Espírito Santo Federal University of Vicosa Federal University of Espirito Santo Federal University of Vicosa
17:40-18:00	ThC2.3
<i>UAV Mission Monitoring and Sequencing</i> , pp. 1048-1055.	
Goudarzi, Hiram Richards, Arthur	University of Bristol University of Bristol
18:00-18:20	ThC2.4
<i>Automated Emergency Landing System for Drones: SafeEYE Project</i> , pp. 1056-1064.	
Bektash, O. Ramirez Gomez, Aitor Naundrup Pedersen, Jacob la Cour-Harbo, Anders	Aalborg University Aalborg University Aalborg University Aalborg University

18:20-18:40 ThC2.5

Fault-Tolerant Final Approach Navigation for a Fixed-Wing UAV by Using Long-Range Stereo Camera System, pp. 1065-1074.

Watanabe, Yoko	ONERA
Manecy, Augustin	ONERA
Amiez, Alexandre	ONERA
Aoki, Shin	RICOH Co. Ltd
Nagai, Sho	RICOH Co. Ltd

18:40-19:00 ThC2.6

Distributed Fault Detection for UAV Formation Missions, pp. 1075-1084.

Kladis, Georgios P.	Hellenic Army Academy
Tsourveloudis, Nikos	Technical University of Crete

ThC3	Edessa
UAS Applications III (Regular Session)	

17:00-17:20 ThC3.1

RCPNet: Deep-Learning Based Relative Camera Pose Estimation for UAVs, pp. 1085-1092.

Yang, Chenhao	University of Tübingen
Liu, Yuyi	Kyoto University
Zell, Andreas	University of Tübingen

17:20-17:40 ThC3.2

Aerial Following of a Non-Holonomic Mobile Robot Subject to Velocity Fields: A Case Study for Autonomous Vehicles Surveillance, pp. 1093-1102.

Sanchez, Anand	CINVESTAV
Castillo, Pedro	Université De Technologie De Compiègne
Oliva-Palomo, Fatima	CINVESTAV
Betancourt Vera, Guillermo Julio Cesar	Université De Technologie De Compiègne
Parra-Vega, Vicente	CINVESTAV
Gallegos Bermúdez, Luis Eduardo	Centro De Investigación Y De Estudios Avanzados Instituto Polité
Ruiz Sanchez, Francisco Jose	CINVESTAV

17:40-18:00 ThC3.3

Improved Multi-Camera Coverage Control of Unmanned Multirotors, pp. 1103-1112.

Huang, Sunan	National University of Singapore
Yang, Hong	National University of Singapore
Leong, Wai Lun	National University of Singapore
Teo, Rodney	National University of Singapore

18:00-18:20 ThC3.4

An Approach for Multi-UAV System Navigation and Target Finding in Cluttered Environments, pp. 1113-1120.

Zhu, Xiaolong	Queensland University of Technology
Vanegas Alvarez, Fernando	Queensland University of Technology
Gonzalez, Luis Felipe	Queensland University of Technology

18:20-18:40 ThC3.5

An Adaptive Informative Path Planning Algorithm for Real-Time Air Quality Monitoring Using UAVs, pp. 1121-1130.

Velasco, Omar	Wageningen University and Research
Valente, João	Wageningen University and Research
Mersha, Abeje Yenehun	Saxion University of Applied Sciences

18:40-19:00 ThC3.6

Towards an Integrated Low-Cost Agricultural Monitoring System with Unmanned Aircraft System, pp. 1131-1138.

Karatzinis, Georgios	Democritus University of Thrace
Apostolidis, Savvas	Democritus University of Thrace
Kapoutsis, Athanasios	Democritus University of Thrace
Panagiotopoulou, Liza	GEOTOPOS S.A
Boutalis, Yiannis	Democritus University of Thrace
Kosmatopoulos, Elias	Democritus University of Thrace and CERTH

ThC4 Naousa

Micro and Mini UAS II (Regular Session)

17:00-17:20 ThC4.1

Implementation of a Natural User Interface to Command a Drone, pp. 1139-1144.

Yam-Viramontes, Brandon Alberto	Instituto Tecnológico Superior De Jerez
Mercado Ravell, Diego Alberto	Center for Research in Mathematics CIMAT

17:20-17:40 ThC4.2

Aerial Interaction Control in Outdoor Environments for a Micro Aerial Vehicle Equipped with a Robotic Arm, pp. 1145-1153.

Lopez Luna, Aaron	INAOE
Cruz, Israel	INAOE
Martinez-Carranza, Jose	Instituto Nacional De Astrofisica Optica Y Electronica

17:40-18:00 ThC4.3

A Lightweight Waterproof Casing for an Aquatic UAV Using Rapid Prototyping, pp. 1154-1161.

Tan, Yu Herng	National University of Singapore
Chen, Ben M.	Chinese University of Hong Kong

18:00-18:20 ThC4.4

Characterization of Ground-To-Air Emissions with sUAS Using a Digital Twin Framework, pp. 1162-1166.

Hollenbeck, Derek	MESA Lab at UC Merced
Chen, YangQuan	University of California, Merced

18:20-18:40 ThC4.5

A Generalized Framework Designing Monopulse Tracking of OFDM-Aided Aircraft Communication, pp. 1167-1174.

Yan, Chaoxing	Beijing Research Institute of Telemetry
Fu, Lingang	Beijing Research Institute of Telemetry
Liu, Tongling	Beijing Research Institute of Telemetry
Chen, Ming	Beijing Research Institute of Telemetry

18:40-19:00	ThC4.6
<i>Situation Awareness and Routing Challenges in Unmanned HAPS/UAV Based Communications Networks</i> , pp. 1175-1182.	
Anicho, Ogbonnaya	Liverpool Hope University
Charlesworth, Philip	Liverpool Hope University
Baicher, Gurvinder	Liverpool Hope University
Nagar, Atulya	Liverpool Hope University

Technical Program for Friday September 4, 2020

FrA1	Macedonia Hall
Navigation (Regular Session)	
09:00-09:20	FrA1.1
<i>Finite-Time Convergent Sliding-Mode Guidance Law for High-Speed Flight Vehicle with Bearings-Only Measurement</i> , pp. 1183-1188.	
Qu, Yaohong	Northwestern Polytechnical University
Wang, Kai	Northwestern Polytechnical University
Yu, Ziquan	Nanjing University of Aeronautics and Astronautics
09:20-09:40	FrA1.2
<i>Leader-Follower Formation Feedback Control Composed of Turning Rate and Velocity Controllers</i> , pp. 1189-1198.	
Milutinovic, Dejan	University of California at Santa Cruz
Casbeer, David	Air Force Research Laboratory
09:40-10:00	FrA1.3
<i>3D Map Exploration Via Learning Submodular Functions in the Fourier Domain</i> , pp. 1199-1205.	
Lu, Bing-Xian	National Central University
Tseng, Kuo-Shih	National Central University
10:00-10:20	FrA1.4
<i>Multi-Layer Map: Augmenting Semantic Visual Memory</i> , pp. 1206-1212.	
Papapetros, Ioannis	Democritus University of Thrace
Tsampikos	Democritus University of Thrace
Balaska, Vasiliki	Democritus University of Thrace
Gasteratos, Antonios	Democritus University of Thrace
10:20-10:40	FrA1.5
<i>Regions of Interest Segmentation from LiDAR Point Cloud for Multirotor Aerial Vehicles</i> , pp. 1213-1220.	
Kulathunga, Geesara	Innopolis University
Fedorenko, Roman	Innopolis University
Klimchik, Alexandr	Innopolis University
10:40-11:00	FrA1.6
<i>Multi-Agent Mapping and Navigation of Unknown GPS-Denied Environments Using a Relative Navigation Framework</i> , pp. 1221-1230.	
Olson, Jacob	Brigham Young University
Toombs, Nathan	Brigham Young University
McLain, Tim	Brigham Young University

FrA2	Kozani
Levels of Safety (Regular Session)	
09:00-09:20	FrA2.1
<i>Coordinated Coverage and Fault Tolerance Using Fixed-Wing Unmanned Aerial Vehicles</i> , pp. 1231-1240.	
Shriwastav, Sachin	University of Hawaii at Manoa
Song, Zhuoyuan	University of Hawaii at Manoa
09:20-09:40	FrA2.2
<i>UAVs and Their Role in the Health Supply Chain: A Case Study from Malawi</i> , pp. 1241-1248.	
Triche, Ryan	Chemonics in Support of USAID GHSC-PSM
Greve, Ashley	USAID GHSC-PSM
Dubin, Scott	USAID GHSC-PSM
09:40-10:00	FrA2.3
<i>Estimation of Actuator Faults in Quadrotor Vehicles: From Theory to Validation with Experimental Flight Data</i> , pp. 1249-1256.	
Baldini, Alessandro	Università Politecnica Delle Marche
Felicetti, Riccardo	Università Politecnica Delle Marche
Freddi, Alessandro	Università Politecnica Delle Marche
Monteriù, Andrea	Università Politecnica Delle Marche
Tempesta, Matteo	Università Politecnica Delle Marche
10:00-10:20	FrA2.4
<i>UAV Collision Avoidance with Varying Trigger Time</i> , pp. 1257-1264.	
Lin, Zijie	University of Maryland, College Park
Castano, Lina	University of Maryland, College Park
Xu, Huan	University of Maryland, College Park
10:20-10:40	FrA2.5
<i>Cybersecurity of the Unmanned Aircraft System (UAS)</i> , pp. 1265-1269.	
Pyzynski, Mariusz	Lazarski University
FrA3	Edessa
UAS Applications IV (Regular Session)	
09:00-09:20	FrA3.1
<i>Automatic Condition Monitoring of Railway Overhead Lines from Close-Range Aerial Images and Video Data</i> , pp. 1270-1277.	
Andert, Franz	German Aerospace Center
Kornfeld, Nils	German Aerospace Center
Nikodem, Florian	Deutsches Zentrum Für Luft Und Raumfahrt
Li, Haiyan	Siemens Mobility GmbH
Kluckner, Stefan	Siemens Mobility GmbH
Gruber, Laura	Siemens Mobility GmbH
Kaiser, Christian	Copting GmbH
09:20-09:40	FrA3.2
<i>FDI Attack Detection for Formation Control of Quantized UAV Systems by Coding Sensor Outputs</i> , pp. 1278-1285.	
Liu, Lin	Beihang University

Wu, Hanyuan	Beihang University
Xi, Zhiyu	Beihang University
Cui, Yucheng	Beihang University
09:40-10:00	FrA3.3
<i>Reactive Mission Planning for UAV Based Crane Rail Inspection in an Automated Container Terminal</i> , pp. 1286-1293.	
Bobbe, Markus	Technical University of Braunschweig
Khedar, Yogesh	Technical University of Braunschweig
Backhaus, Jan	Technical University of Braunschweig
Gerke, Markus	Technical University of Braunschweig
Ghassoun, Yahya	Technical University of Braunschweig
Plöger, Frank	HHLA
10:00-10:20	FrA3.4
<i>Optimal Sensor Management for Multiple Target Tracking Using Cooperative Unmanned Aerial Vehicles</i> , pp. 1294-1300.	
Baek, Stan	United States Air Force Academy
York, George	Academy Center for Unmanned Aircraft Systems Research
10:20-10:40	FrA3.5
<i>UAV Vision-Based Nonlinear Formation Control Applied to Inspection of Electrical Power Lines</i> , pp. 1301-1308.	
Uzakov, Timur	Czech Technical University in Prague
Saska, Martin	Czech Technical University in Prague
Nascimento, Tiago	Universidade Federal da Paraiba
10:40-11:00	FrA3.6
<i>Range Estimation and Visual Servoing of a Dynamic Target Using a Monocular Camera</i> , pp. 1309-1316.	
Srivastava, Raunak	Indian Institute of Technology Bombay
Maity, Arnab	Indian Institute of Technology Bombay
Lima, Rolif	TCS Innovation Labs
Das, Kaushik	TATA Consultancy Service
FrA4	Naousa
Airspace Control (Regular Session)	
09:00-09:20	FrA4.1
<i>The Wild West of Drones: A Review on Autonomous-UAV Traffic-Management</i> , pp. 1317-1322.	
Rumba, Rudolfs	Riga Technical University
Nikitenko, Agris	Riga Technical University
09:20-09:40	FrA4.2
<i>Aircraft Stall Recovery Using Sliding-Mode Based Pitch-Attitude and Altitude Control</i> , pp. 1323-1328.	
Gazi, salahudden	IIT Kanpur
Giri, Dipak Kumar	IIT Kanpur
Ghosh, A.K. Ghosh	IIT Kanpur
09:40-10:00	FrA4.3
<i>Hover-To-Cruise Transition Control for High-Speed Level Flight of Ducted Fan UAV</i> , pp. 1329-1337.	
Cheng, Zihuan	South China University of Technology
Pei, Hai-Long	South China University of Technology

10:00-10:20 FrA4.4

Observer Based Appointed-Finite-Time Nonsingular Sliding Mode Based Disturbance Attenuation Control for Quadrotor UAV, pp. 1338-1343.

Gong, Wenquan	Shanghai Maritime University
Li, Bo	Shanghai Maritime University
Xiong, Hang	Shanghai Maritime University
Yang, Yongsheng	Shanghai Maritime University
Bing, Xiao	Northwestern Polytechnical University

10:20-10:40 FrA4.5

Adaptive Finite-Time Tracking Control for Spacecraft Proximity Operations under Actuator Saturation, pp. 1344-1349.

Liu, Kang	University of Science and Technology of China
Wang, Yu	University of Science and Technology of China
Ji, Haibo	University of Science and Technology of China

10:40-11:00 FrA4.6

Wireless Longitudinal Motion Controller Design for Quadrotors, pp. 1350-1358.

Kouvakas, Nikolaos	National and Kapodistrian University of Athens
Koumboulis, Fotios	National and Kapodistrian University of Athens
Giannaris, Georgios	Stereia Ellada Institute of Technology
Vouyioukas, Demosthenes	University of the Aegean

FrB1 Macedonia Hall

Energy Efficient UAS (Regular Session)

11:30-11:50 FrB1.1

State-Of-Technology and Barriers for Adoption of Fuel Cell Powered Multirotor Drones, pp. 1359-1367.

Apeland, Jørgen	University of Stavanger
Pavlou, Dimitrios	University of Stavanger
Hemmingsen, Tor	University of Stavanger

11:50-12:10 FrB1.2

Turn Decision-Making for Improved Autonomous Thermalling of Unmanned Aerial Gliders, pp. 1368-1375.

El Tin, Fares	McGill University
Borowczyk, Alexandre	Notos Technologies
Sharf, Inna	McGill University
Nahon, Meyer	McGill University

12:10-12:30 FrB1.3

Online ADP Based Oxygen Excess Ratio Control of the PEM Fuel Cell System Applying to UAVs, pp. 1376-1383.

Zhu, Jing	Nanjing University of Aeronautics and Astronautics
Zhang, Peng	Nanjing University of Aeronautics and Astronautics
Jiang, Bin	Nanjing University of Aeronautics and Astronautics

12:50-13:10 FrB1.5

Energy Efficiency Improvement Potential of a Tactical BWB UAV Using Renewable Energy Sources, pp. 1384-1391.

Dimitriou Stylianos	Aristotle University of Thessaloniki
Kapsalis, Stavros	Aristotle University of Thessaloniki

Panagiotou, Pericles Yakinthos, Kyriakos	Aristotle University of Thessaloniki Aristotle University of Thessaloniki
13:10-13:30	FrB1.6
<i>Aerial Worker for Skyscraper Fire Fighting Using a Water-Jetpack Inspired Approach</i> , pp. 1392-1397.	
Chaikalis, Dimitris	New York University Abu Dhabi
Tzes, Anthony	New York University Abu Dhabi
Khorrani, Farshad	New York University
FrB2	Kozani
Risk Analysis (Regular Session)	
11:30-11:50	FrB2.1
<i>Efficient Generation of Ground Impact Probability Maps by Neural Networks for Risk Analysis of UAV Missions</i> , pp. 1398-1406.	
Levasseur, Baptiste	ONERA
Bertrand, Sylvain	ONERA
Raballand, Nicolas	ONERA
11:50-12:10	FrB2.2
<i>Situational Risk Assessment within Safety-Driven Behavior Management in the Context of UAS</i> , pp. 1407-1415.	
Hägele, Georg	Semcon Sweden AB
Sarkheyli-Hägele, Arezoo	Malmö University
12:10-12:30	FrB2.3
<i>A Sociotechnical Approach to UAV Safety for Search and Rescue Missions</i> , pp. 1416-1424.	
Charalampidou, Stavroula	Democritus University of Thrace
Lygouras, Eleftherios	Democritus University of Thrace
Dokas, Ioannis	Democritus University of Thrace
Gasteratos, Antonios	Democritus University of Thrace
Zacharopoulou, Aikaterini	Democritus University of Thrace
12:30-12:50	FrB2.4
<i>Preliminary Evaluation of Thrust Loss in Commercial Aircraft Engine Due to Airborne Collision with Unmanned Aerial Vehicles (UAVs)</i> , pp. 1425-1432.	
Che Man, Mohd Hasrizam	Nanyang Technological University
Liu, Hu	Nanyang Technological University
Ng, Bing Feng	Nanyang Technological University
Low, Kin Huat	Nanyang Technological University
12:50-13:10	FrB2.5
<i>Toward Cybersecurity of Unmanned Aircraft System Operations under "Specific" Category</i> , pp. 1433-1441.	
Tran, Trung Duc	SOGILIS Company and Univ. Grenoble Alpes, CNRS
Thiriet, Jean-Marc	GIPSA-Lab, CNRS
Marchand, Nicolas	GIPSA-Lab CNRS
El Mrabti, Amin	SOGILIS Company
13:10-13:30	FrB2.6
<i>Ground Impact Probability Distribution for Small Unmanned Aircraft in Ballistic Descent</i> , pp. 1442-1451.	
la Cour-Harbo, Anders	Aalborg University

FrB3		Edessa
UAS Applications V (Regular Session)		
11:30-11:50		FrB3.1
<i>Surface-Condition Detection System of Drone-Landing Space Using Ultrasonic Waves and Deep Learning</i> , pp. 1452-1459.		
Hamanaka, Masatoshi		RIKEN
Nakano, Fujio		Kyoto University
11:50-12:10		FrB3.2
<i>Dense Crowds Detection and Surveillance with Drones Using Density Maps</i> , pp. 1460-1467.		
Gonzalez-Trejo, Javier		CIMAT Zacatecas
Mercado Ravell, Diego		Center for Research in Mathematics CIMAT
Alberto		
12:10-12:30		FrB3.3
<i>UAS Based Methodology for Measuring Glide Slope Angles of Airport Precision Approach Path Indicators (PAPI)</i> , pp. 1468-1474.		
Lin, Yi-Chun		Purdue University
Hasheminasab, Seyyed		Purdue University
Meghdad		
Bullock, John		Purdue University
Horton, Deborah		Purdue University
Baxmeyer, Adam		Purdue University
Habib, Ayman		Purdue University
Bullock, Darcy		Purdue University
12:30-12:50		FrB3.4
<i>Coordinated CRLB-Based Control for Tracking Multiple First Responders in 3D Environments</i> , pp. 1475-1484.		
Papaioannou, Savvas		University of Cyprus
Kim, Sungjin		Hanyang University
Laoudias, Christos		University of Cyprus
Kolios, Panayiotis		University of Cyprus
Kim, Sunwoo		Hanyang University
Theocharides, Theocharis		University of Cyprus
Panayiotou, Christos		University of Cyprus
Polycarpou, Marios M.		University of Cyprus
12:50-13:10		FrB3.5
<i>Estimating Crop Coefficients Using Linear and Deep Stochastic Configuration Networks Models and UAV-Based Normalized Difference Vegetation Index (NDVI)</i> , pp. 1485-1490.		
Niu, Haoyu		UC, Merced
Wang, Dong		USDA ARS Parlier
Chen, YangQuan		University of California, Merced
13:10-13:30		FrB3.6
<i>UAV-Assisted Aerial Survey of Railways Using Deep Learning</i> , pp. 1491-1500.		
Kafetzis, Dimitrios		Athens University of Economics and Business
Fourfouris, Ioannis		Athens University of Economics and Business
Argyropoulos, Savvas		StreamOwl

FrB4	Naousa
Airspace Management (Regular Session)	
11:30-11:50	FrB4.1
<i>Cooperative Robust Line-Of-Sight Guidance Law for Aerial Target Defense</i> , pp. 1501-1507.	
Luo, Hongbing	University of Science and Technology of China
Ji, Haibo	University of Science and Technology of China
Wang, Xinghu	University of Science and Technology of China
Qu, Xinyu	University of Science and Technology of China
11:50-12:10	FrB4.2
<i>Imitation Learning for Neural Network Autopilot in Fixed-Wing Unmanned Aerial Systems</i> , pp. 1508-1517.	
Shukla, Daksh	The University of Kansas
Keshmiri, Shawn	University of Kansas
Beckage, Nicole	Intel Labs
12:10-12:30	FrB4.3
<i>Variable L1 Guidance Strategy for Path Following of UAVs</i> , pp. 1518-1524.	
R, Saurav	Indian Institute of Technology Madras
Laad, Dhruv	Indian Institute of Technology Madras
Ghosh, Satadal	Indian Institute of Technology Madras
12:30-12:50	FrB4.4
<i>Gradient-Based Augmentation to Maxima Turn Switching Strategy for Source-Seeking Using Sensor-Equipped UAVs</i> , pp. 1525-1532.	
Kamthe, Aniket	Indian Institute of Technology Madras
Ghosh, Satadal	Indian Institute of Technology Madras
12:50-13:10	FrB4.5
<i>Online Hybrid Motion Planning for Unmanned Aerial Vehicles in Planar Environments</i> , pp. 1533-1540.	
Lapasi, Manikandan	Indian Institute of Technology Madras
Ghosh, Satadal	Indian Institute of Technology Madras
13:10-13:30	FrB4.6
<i>Lateral Fractional Order Controller Design and Tuning for a Flying-Wing UAS</i> , pp. 1541-1545.	
Flanagan, Harold	University of Kansas
Chao, Haiyang	University of Kansas
Chen, YangQuan	University of California, Merced
FrC1	Macedonia Hall
Technology Challenges (Regular Session)	
14:30-14:50	FrC1.1
<i>Wind Field Estimation by Small UAVs for Rapid Response to Contaminant Leaks</i> , pp. 1546-1552.	
Ayala-Alfaro, Victor	University of Guanajuato
Torres del Carmen, Felipe de Jesus	University of Guanajuato
Ramirez Paredes, Juan Pablo	University of Guanajuato

14:50-15:10	FrC1.2
<i>Development of an Automated Monitoring Platform for Invasive Plants in a Rare Great Lakes Ecosystem Using Uncrewed Aerial Systems and Convolutional Neural Networks</i> , pp. 1553-1564.	
Cohen, Joshua	Michigan Natural Features Inventory, Michigan State University E
Lewis, Matthew	Michigan Aerospace Corporation
15:10-15:30	FrC1.3
<i>Modeling and Multimode Analysis of Electrically Driven Flying Car</i> , pp. 1565-1571.	
Ai, Tianfu	Beijing Institute of Technology
Xu, Bin	Beijing Institute of Technology
Xiang, Changle	Beijing Institute of Technology
Fan, Wei	Beijing Institute of Technology
Zhang, Yibo	Beijing Institute of Technology
15:30-15:50	FrC1.4
<i>Capability Caution in UAV Design</i> , pp. 1572-1581.	
Cawthorne, Dylan	University of Southern Denmark
Devos, Arne	Southern University of Denmark
15:50-16:10	FrC1.5
<i>A Genetic Algorithm Based Method for the Airfoil Optimization of a Tactical Blended-Wing-Body UAV</i> , pp. 1582-1589.	
Mathioudakis, Nikolaos	Aristotle University of Thessaloniki
Panagiotou, Pericles	Aristotle University of Thessaloniki
Kaparos, Pavlos	Aristotle University of Thessaloniki
Yakinthos, Kyriakos	Aristotle University of Thessaloniki
16:10-16:30	FrC1.6
<i>LS-SVM for LPV-ARX Identification: Efficient Online Update by Low-Rank Matrix Approximation</i> , pp. 1590-1595.	
Cavanini, Luca	Università Politecnica Delle Marche
Ferracuti, Francesco	Università Politecnica Delle Marche
Longhi, Sauro	Università Politecnica Delle Marche
Monteriù, Andrea	Università Politecnica Delle Marche
FrC2	Kozani
Biologically Inspired and Energy Efficient UAS (Regular Session)	
14:30-14:50	FrC2.1
<i>Effects of Unsteady Aerodynamics on Gliding Stability of a Bio-Inspired UAV</i> , pp. 1596-1604.	
Sanchez-Laulhe, Ernesto	University of Seville
Fernandez-Feria, Ramón	University of Málaga
Acosta, Jose Angel	University of Seville
Ollero, Anibal	University of Seville
14:50-15:10	FrC2.2
<i>Fault Recognition of Electric Servo Steering Gear Based on Long and Short-Term Memory Neural Network</i> , pp. 1605-1613.	
Xu, Yixiang	Zhejiang University
Yang, Chunng	Zhejiang University
15:10-15:30	FrC2.3

Internal Combustion Engine Control System Design Suitable for Hybrid Propulsion Applications, pp. 1614-1619.

Pavkovic, Danijel	University of Zagreb
Krznar, Matija	University of Zagreb
Cipek, Mihael	University of Zagreb
Zorc, Davor	University of Zagreb
Trstenjak, Maja	University of Zagreb

15:30-15:50 FrC2.4

Control of a Passively Coupled Hybrid Aircraft, pp. 1620-1627.

Patience, Christian	McGill University
Nahon, Meyer	McGill University

15:50-16:10 FrC2.5

Design and Fabrication of a Nomadic Solar-Powered Quadrotor, pp. 1628-1635.

Henderson, Travis	University of Minnesota
Jenson, Devon	University of Minnesota
D'Sa, Ruben	University of Minnesota
Kilian, Jack	University of Minnesota
Papanikolopoulos, Nikos	University of Minnesota

16:10-16:30 FrC2.6

A Methodology for Preliminary Performance Estimation of a Hybrid-Electric Tilt-Wing Aircraft for Emergency Medical Services, pp. 1636-1643.

Barra, Federico	Politecnico Di Torino
Capone, Pierluigi	Zurich University of Applied Sciences
Guglieri, Giorgio	Politecnico Di Torino

FrC3 Edessa

Manned/Unmanned Aviation (Regular Session)

14:30-14:50 FrC3.1

Rotor Performance Analysis and Modeling of Multirotor Using Wind-Tunnel Test, pp. 1644-1649.

Ye, Jianchuan	Beijing Institute of Technology
Jiang, Wang	Beijing Institute of Technology
He, Shaoming	Cranfield University
Song, Tao	Beijing Institute of Technology

14:50-15:10 FrC3.2

Flight Dynamics and Control of a New VTOL Aircraft in Fixed-Wing Mode, pp. 1650-1657.

Gao, Honggang	Northwestern Polytechnical University
Liu, Zhenbao	Northwestern Polytechnical University
Wang, Ban	Northwestern Polytechnical University
pang, chao	Northwestern Polytechnical University

15:10-15:30 FrC3.3

Reporting UAS Related Incidents under Aviation Occurrence Reporting Legislation, pp. 1658-1666.

Kasprzyk, Piotr	Lazarski University in Warsaw
Konert, Anna	Lazarski University in Warsaw

15:50-16:10 FrC3.5

Autonomous Teammates for Squad Tactics, pp. 1667-1672.

Tyler, James	Northeastern University
Arnold, Ross	US Department of Defense
Abruzzo, Benjamin	US Department of Defense
Korpela, Christopher	United States Military Academy
16:10-16:30	FrC3.6
<i>Operator Controlled, Reactive UAV Behaviors in Manned-Unmanned Teaming Scenarios with Selective Datalink Availability</i> , pp. 1673-1679.	
Meyer, Carsten	University of the Bundeswehr Munich
Schulte, Axel	University of the Bundeswehr Munich
FrC4	Naousa
Air Vehicle Operations (Regular Session)	
14:30-14:50	FrC4.1
<i>UTM System Operational Implementation As a Way for U-Space Deployment on Basis of Polish National Law</i> , pp. 1680-1687.	
Kotlinski, Mateusz	Polish Air Navigation Services Agency
14:50-15:10	FrC4.2
<i>A New Method to Combine Detection and Tracking Algorithms for Fast and Accurate Human Localization in UAV-Based SAR Operations</i> , pp. 1688-1696.	
Lygouras, Eleftherios	Democritus University of Thrace
Gasteratos, Antonios	Democritus University of Thrace
15:10-15:30	FrC4.3
<i>Perching Upside down with Bi-Directional Thrust Quadrotor</i> , pp. 1697-1703.	
Yu, Pengfei	The University of Sydney
Chamitoff, Gregory	The University of Sydney
Wong, KC	The University of Sydney
15:30-15:50	FrC4.4
<i>Fuzzy Model Predictive Control of a Quadrotor Unmanned Aerial Vehicle</i> , pp. 1704-1713.	
Hossny, Mohamed	German University in Cairo
El-Badawy, Ayman	German University in Cairo
Hassan, Ragi	German University in Cairo
15:50-16:10	FrC4.5
<i>Dynamic Modeling of a Transformable Quadrotor</i> , pp. 1714-1719.	
Derrouaoui, Saddam Hocine	Ecole Militaire Polytechnique
Guiatni, Mohamed	Ecole Militaire Polytechnique
Bouزيد, Yasser	Ecole Militaire Polytechnique
Islam, Dib	Ecole Militaire Polytechnique
Nour Eddine, Moudjari	, Ecole Militaire Polytechnique
16:10-16:30	FrC4.6
<i>Robust Immersion and Invariance Adaptive Control with Disturbance Observer for a Quadrotor UAV</i> , pp. 1720-1725.	
Han, Qi	Beijing Jiao Tong University
Liu, Xiangbin	Beijing Jiao Tong University
Zou, Lang	Beijing Jiao Tong University

FrD1	Macedonia Hall
UAS Testbeds (Regular Session)	
16:30-16:50	FrD1.1
<i>Joint Virtual and Physical Prototype Design and Testing of a Sensor Fusion Workbench for Fixed-Wing UAVs</i> , pp. 1726-1732.	
Huang, Peng	Technische Universität Dresden
Meyr, Heinrich	Barkhausen Institut
Fettweis, Gerhard	Technische Universität Dresden
16:50-17:10	FrD1.2
<i>Bebop 2 Quadrotor As a Platform for Research and Education in Robotics and Control Engineering</i> , pp. 1733-1741.	
Giernacki, Wojciech	Poznan University of Technology
Kozierski, Piotr	Poznan University of Technology
Michalski, Jacek	Poznan University of Technology
Retinger, Marek	Poznan University of Poznan
Madonski, Rafal	Jinan University
Campoy, Pascual	Universidad Politecnica Madrid
17:10-17:30	FrD1.3
<i>Omnibot: A Small Versatile Robotic Platform Capable of Air, Ground, and Underwater Operation</i> , pp. 1742-1747.	
Canelon-Suarez, Dario	University of Minnesota
Wang, Youbing	University of Minnesota
Papanikolopoulos, Nikos	University of Minnesota
17:30-17:50	FrD1.4
<i>Modeling and Control of an Overactuated Aerial Vehicle with Four Tilttable Quadrotors Attached by Means of Passive Universal Joints</i> , pp. 1748-1756.	
Iriarte, Imanol	Tecnalia
Otaola, Erlantz	Tecnalia
Culla, David	Tecnalia
Iglesias, Iñaki	Tecnalia
Lasa, Joseba	Tecnalia
Sierra, Basi	University of Basque Country
17:50-18:10	FrD1.5
<i>UAS Testing in Low Pressure and Temperature Conditions</i> , pp. 1757-1765.	
Scanavino, Matteo	Politecnico di Torino
Avi, Arrigo	Eurac Research
Vilardi, Andrea	Eurac Research
Guglieri, Giorgio	Politecnico di Torino
17:50-18:10	FrD1.6
<i>EuroDRONE, a European UTM Testbed for U-Space</i> , pp. 1766-1774.	
Lappas, Vaios	University of Patras
Shin, Hyo-Sang	Cranfield University
Tsourdos, Antonios	Cranfield University

FrD2		Kozani
Simulation (Regular Session)		
16:30-16:50		FrD2.1
<i>The Simulator-In-Hardware: A Low Cost and Hard Real-Time Hardware-In-The-Loop Simulator for Flying Vehicles</i> , pp. 1775-1781.		
Chiappinelli, Romain		McGill University
Nahon, Meyer		McGill University
Apkarian, Jacob		Coriolis G, Toronto, Canada
16:50-17:10		FrD2.2
<i>Flight Control Simulation and Battery Performance Analysis of a Quadrotor under Wind Gust</i> , pp. 1782-1791.		
Kim, Hyeongseok		Seoul National University
Lim, Daejin		Seoul National University
Yee, Kwanjung		Seoul National University
17:10-17:30		FrD2.3
<i>Simulating GPS-Denied Autonomous UAV Navigation for Detection of Surface Water Bodies</i> , pp. 1792-1800.		
Singh, Arnav Deo		Queensland University of Technology
Vanegas Alvarez, Fernando		Queensland University of Technology
17:30-17:50		FrD2.4
<i>Modelling and Simulation of a Tethered UAS</i> , pp. 1801-1808.		
Dicembrini, Emilio		Politecnico di Torino
Scanavino, Matteo		Politecnico di Torino
Dabbene, Fabrizio		Politecnico di Torino
Guglieri, Giorgio		Politecnico di Torino
17:50-18:10		FrD2.5
<i>Model-In-The-Loop Testing of Control Systems and Path Planner Algorithms for QuadRotor UAVs</i> , pp. 1809-1818.		
David Du Mutel de Pierrepont Franzetti, Iris		Universidad Politécnic de Cataluña
Carminati, Davide		Politecnico di Torino
Scanavino, Matteo		Politecnico di Torino
Capello, Elisa		Politecnico di Torino
17:50-18:10		FrD2.6
<i>A Gazebo/ROS-Based Communication-Realistic Simulator for Networked SUAS</i> , pp. 1819-1827.		
Moon, Sangwoo		University of Colorado Boulder
Bird, John		University of Colorado Boulder
Borenstein, Steve		University of Colorado
Frew, Eric W.		University of Colorado, Boulder
FrD3		Edessa
Manned/Unmanned Aviation and Testbeds (Regular Session)		
16:50-17:10		FrD3.1
<i>A Prescribed Performance Adaptive Optimal Control Scheme for Flying-Wing Aircraft</i> , pp. 1828-1833.		
Huang, Chenyu		Nanjing University of Aeronautics and Astronautics
Zhang, Shaojie		Nanjing University of Aeronautics and Astronautics

17:10-17:30	FrD3.2
<i>A Systematic Modelling Framework for Commercial Unmanned Hexacopter Considering Fractional Order System Theory</i> , pp. 1834-1843.	
Sridhar, Nithya	TCS Research and Innovation
N S, Abhinay	Tata Consultancy Services
Bodduluri, Chaithanya Krishna	Tata Consultancy Services
Das, Kaushik	TATA Consultancy Service
Maity, Arnab	Indian Institute of Technology Bombay
17:30-17:50	FrD3.3
<i>UAS, Data and Privacy Protection within the European Union: The Case of Greece</i> , pp. 1844-1851.	
Sansaridis, Serafeim	Attorney at Law, DUTH and University of Macedonia
17:50-18:10	FrD3.4
<i>Wake Interactions of a Tetrahedron Quadcopter</i> , pp. 1852-1859.	
Epps, Jeremy	Georgia Institute of Technology
Garanger, Kevin	Georgia Institute of Technology
Feron, Eric	King Abdullah University of Science and Technology
17:50-18:10	FrD3.5
<i>A 4D Trajectory Follower Based on the 'Carrot Chasing' Algorithm for UAS within the U-Space Context</i> , pp. 1860-1867.	
Perez-Leon, Hector	University of Seville
Acevedo, José Joaquín	AICIA
Maza, Ivan	University of Seville
Ollero, Anibal	University of Seville
18:10-18:30	FrD3.6
<i>Safe Flyable and Energy Efficient UAV Missions Via Biologically Inspired Methods</i> , pp. 1868-1877	
Platanitis, Konstantinos	Technical University of Crete
Kladis, Georgios P.	Hellenic Army Academy
Tsourveloudis, Nikos	Technical University of Crete