



| time | | Room 1 | Room 2 | Room 3 |
|-------|-------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 08:00 | 08:30 | Registration and Morning Coffee | | |
| 08:30 | 09:00 | Opening and welcome | | |
| 09:00 | 09:45 | Keynote Speech 1: "eVTOL Control: Complexity Seeking Solutions", Fraser Macmillen - Principal Flight Control Laws Specialist - Vertical Aerospace Group Ltd. Chair: Mark Lowenberg (University of Bristol) | | |
| 09:45 | 10:15 | Coffee Break | | |
| | | A1: What Could Go Wrong? Chair: Coen de Visser (TU Delft) | B1: Attitude Control I Chair: Daniel Alazard (ISAE-SUPAERO) | C1: On-Orbit and Free Floating Chair: Sofiane Kraïem (ONERA) |
| 10:15 | 10:45 | Evaluation of the Indirect Ice Detection System Performance during the SENS4ICE Flight Test Campaigns Christoph Deiler Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR) | 002 Analytical characterization of the off-pointing probability for a spin-stabilized S/C subject to random particle impacts Andrea Pizzetti; Andrea Fabrizio Deimos Space | 006 Emulating On-Orbit Interactions Using Forward Dynamics Based Cartesian Motion Mohatashem Reyaz Makhdoomi; Vivek Muralidharan; Kuldeep R. Barad; Juan Sandoval; Miguel Olivares- Mendez; Carol Martinez SnT - Interdisciplinary Centre for Security, Reliability and Trust, University of Luxembourg |
| 10:45 | 11:15 | Fault Detection and Estimation of Fault Redundant Airspeed using Unscented Kalman Filter Sathya Janakiraman; Simon Schopferer; Coen de Visser Delft University of Technology | 003 Parametric sensitivity analysis for the robust control of uncertain space systems Ervan Kassarian ; Francesco Sanfedino; Daniel Alazard; Hélène Evain DYCSYT | 007 On-Orbit Servicing Strategies for Large Constellations via Hybrid Dynamic Programming Ignacio Betti Lhuillier ; Andrea Bellome; Leonard Felicetti Cranfield University |
| 11:15 | 11:45 | Comparison of state observer schemes for leak detection and isolation: Application to the feeding lines of a reusable launcher Renato Murata ; Julien Marzat; Hélène Piet-Lahanier; Sandra Boujnah; François Farago ONERA | 004 Linear Parameter-Varying gain-scheduled attitude controller for a spinning spacecraft involving large flexible booms Ricardo Rodrigues ; Francesco Sanfedino; Daniel Alazard ISAE-SUPAERO | 008 Region of Attraction Estimation for Free-Floating Systems under Time-Varying LQR Control Lasse Shala; Shubham Vyas ; Mohamed Khaïl Ben-Larbi; Enrico Stoll DFKI GmbH |
| 11:45 | 12:15 | Validation of Independent Flight Control Law Monitors Dominik Hübener ; Guido Weber; Robert Luckner Technische Universität Berlin | 005 Robust sliding mode controller design for orbital payload deploying spacecraft Konstantinos Platanitis ; Leonard Felicetti; Saurabh Upadhyay; Leonardo Capicchiano Cranfield University, Coactum SA | 009 Mixed Integer Model Predictive Control for a free-floating platform with binary and continuous actuation Frank Stark ; Shubham Vyas; Georg Schildbach; Frank Kirchner Universität zu Lübeck / DFKI GmbH |
| 12:15 | 13:15 | Networking Lunch | | |
| 13:15 | 14:00 | Keynote Speech 2: "From Apollo to Artemis and Beyond: Aerospace Guidance and Computation in Sixty Years", Ping Lu - Professor and Chair - Department of Aerospace Engineering - College of Engineering - San Diego State University, USA. Editor-in-Chief, AIAA Journal of Guidance, Control, and Dynamics. Chair: Daniel Alazard (ISAE-SUPAERO) | | |
| | | A2: Airspace, Guidance, and Routing Chair: Christoph Deiler (DLR) | B2: Away From Earth Chair: Francesco Sanfedino (ISAE-SUPAERO) | C2: Elements of Flight Performance Chair: Mark Lowenberg (University of Bristol) |
| 14:00 | 14:30 | Return-to-Home Function for an Integrated Flight Guidance System in Non-Segregated Airspace Zoe Molkay ; Tim Rupprecht; Agnes Steinert; Dominik Heimsch; Florian Holzappel TUM Institute of Flight System Dynamics | 015 Control design for rendezvous operation near Halo Orbits using Lyapunov-Floquet theory and AUTO Joaquin G. López- Cepero; Jorge Galan-Vioque; Rafael Vazquez Universidad de Sevilla | 018 Power Optimisation of Variable-Pitch Propeller for an IC Engine with Variable-RPM Rohith S K ; Bharath Govindarajan; Ramakrishna P A Indian Institute of Technology Madras |
| 14:30 | 15:00 | Airspace Routing and Automation for Vertiports Hirad Goudarzi; Mickey Li; Duncan Hine; Thomas Richardson; Arthur G. Richards University of Bristol | 016 Design of a Model Predictive Controller for formation flight on quasi-Halo orbits Francesco Paolo Salzo ; Giordana Bucchioni; Rafael Vazquez University of Pisa | 019 |
| 15:00 | 15:30 | Afternoon Tea Break | | |
| | | A3: System Identification and Sensor Calibration Chair: Coen de Visser (TU Delft) | B3: Invited - Space Robotics Chair: Bahadır Kocer (University of Bristol) | C3: Missile GNC I Chair: Robert Glebocki (University of Warsaw) |
| 15:30 | 16:00 | Asymmetric Cessna Citation II Stall Model Identification using a Roll Moment-based Kirchhoff Method Dirk de Fuijk; Daan Pool; Coen de Visser Delft University of Technology | 026 The Deployment Tests of the ESA-Dragliner in the Zero-G Lab Baris Can Yalcin ; Pory Peitso; Pekka Janhunen; Maria Genzer; Perttu Yli-Opas; et al. University of Luxembourg | 030 Polynomial Range Impact Time Control: A Novel Approach Using Bézier Curves Akin Catak ; Esra Demir; Raziye Tekin; Emre Koyuncu; Ibrahim Ozkol Istanbul Technical University |
| 16:00 | 16:30 | Improving satellite inertia identification with an observability-based EKF Hélène Evain ; Stéphanie Delavault CNES | 027 Admittance Control Strategy for the Emulation of Space Debris Capture in a Ground Robotic Facility Baris Can Yalcin ; Mohatashem Reyaz Makhdoomi; Maxime Hubert Delisle; Xiao Li, et al. University of Luxembourg | 031 Formation Control of a Guided Munition Swarm with Potential Function Method Furkan Zeki Ayhan ; Ali Emre Turgut; Veysel Gazi; Neşe Başak Bingöl Taştankaya Roketsan Missile Inc. |
| 16:30 | 17:00 | Navigation Algorithm for a Twin-Engine Turboprop Aircraft Mushfiqul Alam ; James Whidborne; Mark Westwood Cranfield University | 028 | 032 Field-of-View Limited Guidance Law for Maneuvering Targets Using Relative Virtual Frame Formulation Pengyu Wang; Honglong Kang; Chang-Hun Lee KAIST |
| 18:00 | 18:30 | Coach Transfer to Aerospace Bristol (from conference venue) | | |
| 18:30 | 23:00 | <p style="text-align: center;">Conference Dinner @ Aerospace Bristol (cf. link)</p> <p style="text-align: center;">Taking place at Aerospace Bristol on the first night of the conference, join us and enjoy your meal beneath the legendary Concorde, the supersonic passenger jet that revolutionized air travel. Guests will have exclusive on-board access before sitting down to a dinner underneath this marvel of aviation history.</p> | | |

Tue
June
11th
2024



| time | Room 1 | Room 2 | Room 3 |
|-------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 08:30 | Registration and Morning Coffee | | |
| 09:00 | Keynote Speech 3: "Autonomy & AI in Defense Applications", Gokhan Inalhan - BAE Systems Chair - Professor of Autonomous Systems and Artificial Intelligence - Cranfield University, UK Chair: Nicolas Fezens (DLR) | | |
| 09:45 | Morning Coffee Break | | |
| | A4: Flexible Aircraft Chair: Flávio Silvestre (TU Berlin) | B4: Launch and Land Chair: Shubham Vyas (DFKI GmbH) | C4: Land My UAV Chair: Bahadır Kocer (University of Bristol) |
| 10:00 | Flight Control Law Design using H-infinity optimal control for Gust Load Alleviation of Flexible Aircraft Abdelmoez Elagroudy; Christian Weiser; Simon Schulz; Jan Tilmans DLR | 040 Reinforcement Learning based adaptive control of landing manoeuvres in uncertain environments Inês Zagalo; Paulo Rosa; J. M. Lemos Deimos | 043 Exploring the Concept of Air-runway for Fixed-wing UAVs Vijay Shankar Dwivedi; Hyo-Sang Shin; Antonios Tsourdos Cranfield University, KAIST |
| 10:30 | Experimental Aided Inertial Estimation of Wing Shape for Flexible Aircraft Control Rajashree Srikanth; Ines M. G. S. Afonso; Leandro R. Lustosa ISAE-SUPAERO | 041 Robust Control Design for a Sub-Orbital Launch Vehicle with Destabilizing Sloshing Dynamics João Bello; Nicola Somma; Alejandro Montero; Paulo Rosa; João Santos; Tiago Moreira; Pedro Simplicio; António Rinalducci; Yohann Torres DEIMOS Engenharia, SA | 044 Landing Pad Design for Optical-aided Automatic Vertical Take-off and Landing Jun Shi; Xiang Fang; Nils Schlaumann; Michael Zintl; Johann Dambek; Florian Holzappel Technical University of Munich |
| 11:00 | A Practical Approach to Automated Multiobjective Gust Load Alleviation Control Design in a Structured H2/H-infinity Framework Davide Cavaliere; Nicolas Fezens DLR | 042 Fault-Tolerant Control for a Cluster of Rocket Engines – Results for launch and landing of a re-usable launcher Cristina Roche Arroyos; Matteo Pascucci; Nuno Paulino; Jorge Arnedo; Diego Navarro-Tapia; Andrés Marcos; Mohamed Lalami; Paul Alexandre; Pedro Simplicio; Massimo Casasco GMV, UC3M, TASC, SABCA, ESA-ESTEC | 045 A Review on VTOL Autonomous Landing Strategies on Naval Dynamic Surfaces Luis G. L. de Paula; Vijay Shankar Dwivedi; Hyo-Sang Shin; Antonios Tsourdos Cranfield University |
| 11:30 | Keynote Speech 4: "Fault management issues in aircraft systems: Current status and future directions", Ali Zolghadri - Professor of Control Engineering CNRS (Centre national de la recherche scientifique) IMS (Integration from Material to System) Laboratory, Bordeaux University, France. Chair: Coen de Visser (TU Delft) | | |
| 12:15 | Networking Lunch | | |
| 13:15 | Keynote Speech 5: "X-59: GNC Architecture for NASA's Supersonic X-Plane", Jay Brandon - NASA X-59 Chief Engineer - NASA Langley Research Center Chair: Mark Lowenberg (University of Bristol) | | |
| | A5: Advanced Control Chair: Stéphane Delannoy (Airbus) | B5: Attitude Control II Chair: Stephan Theil (DLR) | C5: Intelligent Systems Chair: Sofiane Kraïem (ONERA) |
| 14:00 | Flight Testing of Real-Time Model Predictive Flight Control for Unmanned Flexible Aircraft Benjamin Herrmann; Leif Rieck; Frank Thielecke Hamburg University of Technology | 054 Adaptive Avionics System for Multi-agent Computing Resource Sharing under Failures Chiteshi Tamaki; Thanakorn Khamvilai; Eric Johnson; Johannes Reinhart; Bjoern Annighoefer Pennsylvania State University, University of Stuttgart | 058 Verification and Validation (VandV) of Reinforcement Learning based Online Adaptive Flight Control Laws on CS-25 Class Aircraft Ramesh Konatala; Reiko Müller; Marc May; Gertjan Looye; Erik-Jan van Kampen DLR, Delft University of Technology |
| 14:30 | Application of Reduced-Order Robust Control to Multi-Rotor Stabilization and Guidance Mohamad Hachem; Clément Roos; Thierry Miquel ENAC, ONERA | 055 READY ADCS: a family of ADCS products for a wide range of platforms and missions Luigi Strippoli; Andrea Fabrizi; Lorenzo Cercós; Marco Canetti; Carlos Entrena; Dejan Gacnik; DEIMOS SPACE S.L.U.; Skylabs d.o.o. | 059 Contrastive Learning-Based Air Traffic Trajectory Representation: A Case Study on Incheon International Airport Thaweerath Phisanunpawong; Joshua Julian Damanik; Han-Lim Choi Korea Advanced Institute of Science & Technology (KAIST) |
| 15:00 | Adaptive Formation Control of Unmanned Aerial Vehicles in Wind Toufik Souaief; Huamin Jia; James Whidborne Cranfield University | 056 Worst-case Uncertainty Methods in the Precise Pointing Control of Flexible Spacecraft János Bezsilla; Bálint Patartics; Jian Guo; Bálint Vanek; Béla Takarics Institute for Computer Science and Control | 060 A vision-based control solution for autonomous approach and landing of an airliner Sofiane Kraïem; Mario Cassaro; Cédric Seren; Aurélien Pleyer; Gustav Öman Lundin; Mathieu Brunot ONERA |
| 15:30 | A Scenario-based Approach to Robust Control Design Luis Crespo; Tanner Stage; Kenny NASA | 057 (Invited) Fostering Aerospace Collaboration: COOPERANTS' Initiative towards Continuous Integration of Component Models Stephan Theil; Maximilian Holtmann; Nicole Reuter; Maximilian Reuter DLR Space Systems, Airbus Defence and Space GmbH, ZARM Technik AG | 061 A small body open-source dataset for image processing algorithms Mattia Pugliatti; Shubham Vyas; Marko Jankovic; Francesco Topputo Politecnico di Milano |
| 16:00 | Afternoon Tea Break | | |
| | A6: Aircraft Stability & Control Chair: Duc Nguyen (University of Bristol) | B6: Trajectory Computation Chair: Robert Glebocki (University of Warsaw) | C6: Invited - Case Study: A 10.000 km BVLOS Flight Campaign for Agricultural Photographical Documentation in Germany (part one) Chair: Dieter Moormann (RWTH Aachen) |
| 16:30 | Enhanced Estimation of Region of Attraction Using Union Theorem in Sum-of-Squares Optimization for Longitudinal Stability Analysis Bhaskar Biswas; Dmitriy Ignatyev; Argyrios Zolotas; Antonios Tsourdos Cranfield University, U.K. | 067 De-orbit Trajectory Design for Reusable Unmanned Space Vehicle using Sequential Convex Optimization with Multiple Re-Entry Targets Jaewon Kim; Sangmin Lee; Youdan Kim; Chandeok Park Seoul National University | 070 Highly Automated BVLOS Drone Operations: A Large Scale Flight Campaign for Agricultural Observation in Saxony, Germany Johanna Holsten; Dagmar Huth; Tobias Islam; Norbert Siepenkötter; Dieter Moormann GAF GmbH, FXD - flyXdrive GmbH, FSD - RWTH Aachen University |
| 17:00 | Improving Pitch Capture for Aircraft Take-Off Rotation Law Victor Gilbert; Stéphane Delannoy Airbus | 068 Analysis of the Covector Mapping Principle using Non-Complete Methods Silvia Busi; Torbjørn Cunis; Francesco Topputo; Walter Fichter University of Stuttgart, Politecnico di Milano | 071 Operational Permit: Application for flexible flight operations in the EU-2019/947 specific category Fabian Baader; Philipp Müller; Ann-Kristin Sturm; Johanna Holsten; Dieter Moormann GAF GmbH, FXD - flyXdrive GmbH, FSD - RWTH Aachen University |
| 17:30 | Design and Flight Testing of a Feedback-Linearising Control Law for a Large Flight Envelope on a Sub-Scale Airliner Daniel Pusztai; Mark H. Lowenberg; Simon A. Neild University of Bristol | 069 Flight Trajectory Generation through a Collocation Approach with Successive Linear Programming Zhidong Lu; Haichao Hong; Florian Holzappel Technical University of Munich | 072 A Flight Operation Strategy for Highly Automated Parallel BVLOS Operations Yavor Dobrev; Nicolai Voget; Lennart Danielmeier; Johannes Krimphove; Sebastian Seitz; Johanna Holsten; Dieter Moormann GAF GmbH, FXD - flyXdrive GmbH, FSD - RWTH Aachen University |
| 19:00 | Reception at ZaZa Bazar (Harbourside, Canon's Road, Bristol, BS1 5UH) Networking drinks reception at ZaZa Bazaar, a cozy bar and restaurant with views overlooking to the water and the square at the Harbourside Bristol. Join us for another opportunity to unwind, connect, and engage with fellow attendees in a relaxed and elegant setting. | | |

Wed
June
12th
2024

EuroGNC



June 11th-13th

2024



| time | | Room 1 | Room 2 | Room 3 |
|---------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|
| 08:30 - 09:00 | | Registration and Morning Coffee | | |
| 09:00 - 09:45 | | Keynote Speech 6: "Airbus Auto'Mate: Paving the Way for Autonomous Assets Air to Air Refuelling", Rodney Rodriguez Robles - Auto'Mate Guidance, Navigation and Control Section Lead - Airbus UpNext Chair: Nicolas Fezans (DLR) | | |
| 09:45 - 10:00 | | Morning Coffee Break | | |
| | | A7: Nonlinear Dynamic Inversion Chair: Erik-Jan van Kampen (TU Delft) | B7: State Observers / Estimation Chair: Stephan Theil (DLR) | C7: Missile GNC II Chair: Robert Glebocki (University of Warsaw) |
| 10:00 - 10:30 | Flight Testing Advanced Control Functions on a Passenger Aircraft Christian Weiser; Daniel Milz; Marc May; Ramesh Konatala; Richard Kuchar; Reiko Müller; Stefan Langen; Christina Schreppel; Gertjan Looye DLR | 080 Robot Assisted Landing Process of small UAVs using Decentralized Kalman Filter Vincent Konnow; Lukas Hildebrand; Philipp Hartmann FH Aachen | 084 Trajectory Optimization of an Air Defense Missile with Model Predictive Control Emre Saylam; Nebi Bulut; Rustu Berk Gezer; Fath Turgel Roketsan Inc. | 088 |
| 10:30 - 11:00 | Nonlinear Control Strategy and Sensor Data Processing for a Lift-to-Cruise Aircraft Denis Surmann; Maximilian Weinert; Stephan Myschik Universität der Bundeswehr München | 081 A Review of State-of-The-Art 6D Pose Estimation and its Applications in Space Operations Siddharth Singh; Hyo Sang Shin; Antonios Tsourdos; Leonard Felicetti Cranfield University | 085 LPV Modeling and Autopilot Design for a Dual Pulse Tail Controlled Missile Frederik Prochazka Diehl Defence GmbH & Co. KG | 089 |
| 11:00 - 11:30 | Flight Testing Air Data Sensor Failure Handling with Hybrid Nonlinear Dynamic Inversion Daniel Milz; Marc May; Gertjan Looye DLR | 082 A Simple Quaternion Estimator using Two Vector Measurements Caotang Peng; Daniel Choukroun Ben-Gurion University of the Negev | 086 Enhanced Impact Vector Guidance: Addition of Impact Time Using Bézier Curves and Virtual Targets Akin Çatak; Esra Demir; Emre Koyuncu; Ibrahim Özkol Istanbul Technical University | 090 |
| 11:30 - 12:00 | Rank one update-based efficient adaptive control allocation for multicopter Hangxu Li; Stephan Myschik; Haichao Hong; Florian Holzapfel Technical University of Munich, Universität der Bundeswehr München | 083 Kalman Filter-Based Framework for Predicting Aerial Telerobotic Operations with Input and Output Delays Nazmus Sakib; Zakia Ahmed; Craig A. Woolsey Virginia Tech | 087 | |
| 12:00 - 13:00 | | Networking Lunch | | |
| 13:00 - 13:45 | | Keynote Speech 7: "Aerospace 2050: Sustainability, Autonomy, and Learning for Control", Kevin A. Wise - PhD, Distinguished Senior Technical Fellow - The Boeing Company Chair: Mark Lowenberg (University of Bristol) | | |
| | | A8: Invited - Case Study: A 10.000 km BVLOS Flight Campaign for Agricultural Photographical Documentation in Germany (part two) Chair: Dieter Moormann (RWTH Aachen) | B8: Spacecraft Formations Chair: Stephan Theil (DLR) | C8: Missile GNC III Chair: Nicolas Fezans (DLR) |
| 13:45 - 14:15 | Automated Mission Generation and Dispatching for BVLOS Drone Operations Tobias Islam; Sebastian Seitz; Dieter Moormann GAF GmbH, FXD - flyXdrive GmbH, FSD - RWTH Aachen University | 095 Application of a Mixed H2/Hinf Synthesis Approach to the Control Problem of the LISA Mission Andrei Cojocaru; Alexandru Lapusneanu; Paulo Rosa; Presenter: Andrea Fabrizi DEIMOS | 098 Enhanced Inertial Navigation System for Missile Applications Using Seeker, RF Data Link and Radar Altimeter Measurements Emre Han Ata; Koray S. Erer; Erhan I. Konukseven Roketsan | 101 |
| 14:15 - 14:45 | Trajectory Planning for Efficient BVLOS Drone Flights over Agricultural Points of Interest Max Hartmann; Nicolai Voget; Sebastian Seitz; Dieter Moormann GAF GmbH, FXD - flyXdrive GmbH, FSD - RWTH Aachen University | 096 A hybrid model for robust impulsive control applied to spacecraft rendezvous Gianluca Napoletano; Alexandre Seuret; Rafael Vazquez Politecnico di Milano, Universidad de Sevilla | 099 Steep Descent Control Algorithm for Shipborne Sea-Skimming Missiles Tuna Gün Aksu; Özgün Dülger; Halil Ersin Söken Roketsan, Middle East Technical University | 102 |
| 14:45 - 15:15 | Advanced Flight Control Architecture for BVLOS Drone Operations Patrick Osterloh; Johannes Krimphove; Eva König; Tobias Islam; Dieter Moormann GAF GmbH, FXD - flyXdrive GmbH, FSD - RWTH Aachen University | 097 Development of the Dynamics, Kinematics, and Environment (DKE) Models for L3GW0 Andrei Cojocaru; Alexandru Lapusneanu; Paulo Rosa; Raúl Sánchez Maestro; Jorge Cardin; Joost Veenman; Valentin Preda; Jonathan Grzymisch; Presenter: Kieran Hayward DEIMOS, SENER Aeroespacial y Defensa, ESTEC | 100 Trajectory Prediction for Missile Targets: A Probabilistic Approach Using Machine Learning Marc Schneider; Renato Loureiro; Torbjørn Cunis; Walter Fichter University of Stuttgart | 103 |
| 15:15 - 15:30 | | Closing Ceremony | | |

Thu
June
13th
2024