

AIAA Guidance, Navigation, and Control Conference 2011

**Portland, Oregon, USA
8-11 August 2011**

Volume 1 of 10

ISBN: 978-1-61839-331-9

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

The contents of this work are copyrighted and additional reproduction in whole or in part are expressly prohibited without the prior written permission of the Publisher or copyright holder. The resale of the entire proceeding as received from CURRAN is permitted.

For reprint permission, please contact AIAA's Business Manager, Technical Papers. Contact by phone at 703-264-7500; fax at 703-264-7551 or by mail at 1801 Alexander Bell Drive, Reston, VA 20191, USA.

TABLE OF CONTENTS

VOLUME 1

Reference Dynamics Modification in Adaptive Controllers for Improved Transient Performance	1
<i>E. Lavretsky</i>	
Adaptive Optimizing Nonlinear Control Design for an Over-actuated Aircraft Model	14
<i>E. Van Oort, L. Sonneveldt, Q. Chu, J. Mulder</i>	
Modeling for Control of Very Flexible Aircraft.....	30
<i>T. Gibson, A. Annaswamy, E. Lavretsky</i>	
Retrospective Cost Adaptive Control for Systems with Unknown Nonminimum-Phase Zeros	49
<i>A. D'Amato, E. Sumer, D. Bernstein</i>	
Adaptive Output Feedback Control of the NASA GTM Model with Unknown Nonminimum-Phase Zeros.....	67
<i>A. D'Amato, E. Sumer, K. Mitchell, A. Morozov, J. Hoagg, D. Bernstein</i>	
A Method For Enforcing State Constraints in Adaptive Control.....	118
<i>J. Muse</i>	
Integration of Aeroservoelastic Properties into the NASA Dryden F/A-18 Simulator Using Flight Data from the Active Aeroelastic Wing Program	136
<i>A. Chin, M. Brenner, M. Pickett</i>	
A Covariance-Based Realization Algorithm for the Identification of Aeroelastic Dynamics from In-Flight Data.....	155
<i>D. Miller, R. De Callafon, M. Brenner</i>	
Suppression of Bending-torsion Flutter in Accelerated Flight with Aero-servo-viscoelastic Controls	173
<i>Craig Merrett, Harry Hilton, Sahithi Kalidindi, Elliot Schwartz</i>	
High-Fidelity Aeroservoelastic Predictive Analysis Capability Incorporating Rigid Body Dynamics.....	208
<i>Peter Thompson, Brian Danowsky, Charbel Farhat, Thuan Lieu, Jason Lechniak, Chuck Harris</i>	
Adaptive Lateral Flight Control with Active Flutter Suppression for Aeroservoelastic Aircraft Systems	223
<i>Z. Wilcox, M. Brenner</i>	
Numerical Simulation of Hose Whip Phenomenon in Aerial Refueling.....	230
<i>A. Styuart, H. Yamashiro, R. Stirling, M. Mor, R. Gaston</i>	
Approach Trajectory Optimization including a Tunnel Track Constraint.....	240
<i>Florian Fisch, Fabian Sewerin, Florian Holzapfel</i>	
Envelopes for Flight Through Stochastic Gusts.....	260
<i>J. Richardson, E. Atkins, P. Kabamba, A. Girard</i>	
Polynomial Chaos Analysis of MAV's in Turbulence	270
<i>B. Roberts, R. Lind, M. Kumar</i>	
Time-based Spacing for 4D Approaches using Speed-Profiles.....	293
<i>P. De Jong, K. De Vos, C. Borst, M. Van Paassen, M. Mulder</i>	
Impacts of Intermediate Cruise-Altitude Advisory for Conflict-Free Continuous-Descent Arrival	307
<i>M. Hayashi, R. Coppenbarger, D. Sweet, G. Nagle, G. Dyer</i>	
Analysis of Aircraft Descent Predictability: Implications for Continuous Four-Dimensional Navigation.....	322
<i>D. Garrido-López, R. Gómez Ledesma, G. Gershzohn, S. Moore</i>	
A Rescheduling Method for Conflict-free Continuous Descent Approach	340
<i>Y. Cao, S. Rathinam, D. Sun</i>	
Continuous Descent Approaches with Variable Flight-Path Angles under Time Constraints.....	356
<i>R. Sopjes, P. De Jong, C. Borst, M. Van Paassen, M. Mulder</i>	
A Time-Space Diagram as Controller Support Tool for Closed Path Continuous Descent Operations	376
<i>A. De Leege, A. In't Veld, M. Mulder, M. Van Paassen</i>	
Limitations of Using the Linearized Equations of Motion for MAV Control	405
<i>M. Shields, K. Mohseni</i>	
Static Soaring Surveillance in the Wind Field.....	412
<i>Chen Gao, Hugh Liu</i>	
On-Board Wind Speed Estimation for UAVs.....	426
<i>J. Petrich, K. Subbarao</i>	
Shear Wind Estimation.....	435
<i>R. Bencatel, J. Sousa, M. Abdelhafiz, A. Girard</i>	
Progress against the Wind with Dynamic Soaring - Results from In-Flight Measurements of Albatrosses -	443
<i>G. Sachs, J. Traugott, F. Holzapfel</i>	
Design and Testing of Flapping Wing Control for a Micro Air Vehicle	455
<i>M. Anderson</i>	
Control Oriented Modeling of 6-DOF Hypersonic Vehicle Dynamics	470
<i>M. Shakiba, A. Serrani</i>	
Head-, Tail- and Crosswind Effects on the Maximum Range of Powered Sailplanes with Retractable Engine	497
<i>G. Sachs, J. Lenz, F. Holzapfel</i>	
Impact of Plume Modeling on the Design and Control for a Class of Air-Breathing Hypersonic Vehicles.....	509
<i>S. Sridharan, J. Dickeson, A. Rodriguez</i>	
Adaptive Control for a Hypersonic Glider using Parameter Feedback from System Identification.....	532
<i>M. Creagh, P. Beasley, M. Kearney</i>	

Stability and Control of Ground Tethered Energy Systems.....	550
<i>I. Hussein, D. Olinger, G. Tryggvason</i>	
Spaceborne Autonomous Formation Flying Experiment on the PRISMA Mission	562
<i>Simone D'Amico, Jean-Sebastien Ardaens, Robin Larsson</i>	
Analytical Nonlinear Controller State-Order-Reduction Applied to Satellite Formation Flying.....	583
<i>Stefan Lebel, Christopher Damaren</i>	
Comparison of Relative Mean Orbital Element Estimation Methods for Spacecraft Formation Flying.....	603
<i>L. Sobiesiak, N. Roth, C. Damaren</i>	
Optimal Cluster Flight Orbit Design Method For Fractionated Spacecraft Based On Relative Orbital Elements.....	621
<i>Jihe Wang, Shinichi Nakasuka</i>	
Multi-Object Attitude and Rate Tracking for Spacecraft in Formation Flying	632
<i>M. Abdellrahman</i>	
Managing Cockpit Crew Excess Task Load in Military Manned-Unmanned Teaming Missions by Dual-Mode Cognitive Automation Approaches	647
<i>Ruben Strenzke, Johann Uhrmann, Andreas Benzler, Felix Maiwald, Andreas Rauschert, Axel Schulte</i>	
Decentralized Information-Rich Planning and Hybrid Sensor Fusion for Uncertainty Reduction in Human-Robot Missions	671
<i>S. Ponda, N. Ahmed, B. Luders, E. Sample, T. Hoossainy, D. Shah, M. Campbell, J. P. How</i>	
Verification of Decision Making Behaviour for Heterogeneous Multi-Agent System.....	693
<i>J. Choi, A. Tsourdos</i>	
Knowledge Configured Vehicle - a Layered Artificial Cognition Based Approach to Decoupling High-level UAV Mission Tasking from Vehicle Implementation	702
<i>Michael Kriegel, Stefan Brueggenwirth, Axel Schulte</i>	
Situation and Threat Assessment in BVR Combat.....	726
<i>N. P. Rao, S. Kashyap, G. Gopalaratnam, D. Mandal</i>	
Experiments of Direct and Indirect Haptic Aiding for Remotely Piloted Vehicles with a Mixed Wind Gust Rejection/Obstacle Avoidance Task	732
<i>S. Alaimo, L. Pollini, J. Bresciani, H. Buelthoff</i>	
Admittance-Based Bilateral Teleoperation with Time Delay for an Unmanned Aerial Vehicle involved in an Obstacle Avoidance Task.....	750
<i>Samantha Alaimo, Lorenzo Pollini, Heinrich Buelthoff</i>	
Enhancing Simulation Studies with 3D Animation	769
<i>Saurabh Mahapatra</i>	
Difference Threshold: Measurement and Modeling.....	776
<i>Amir Naseri, Peter Grant</i>	
Flight Simulation and Optimal Design of Information Coding.....	786
<i>C. Ma, D. Zhuang, X. Wanyan, L. Zhang</i>	
Flight Control for a Class of 155 mm Spin-stabilized Projectiles with Course Correction Fuse (CCF)	794
<i>Spiliios Theodoulis, Philippe Werner</i>	
Guidance and Control of a Fin-Stabilized Projectile Based on Flight Dynamics with Reduced Sensor and Actuator Requirements	804
<i>F. Fresconi</i>	
A New Practical Guidance Law for a Guided Projectile	826
<i>W. Park, C. Ryoo, B. Kim, Y. Kim, J. Kim</i>	
Output Feedback Variable Structure Adaptive Control Approach to Missile Autopilot Design.....	835
<i>K. Lee, S. Singh</i>	
Adaptive Dynamic Surface Control based on Neural Network for Missile Autopilot.....	853
<i>D. Cho, S. Kang, H. Kim, M. Tahk</i>	
Terminal-Phase Optimal Guidance Law for BTT Missiles Considering Significant Autopilot Dynamics	869
<i>J. Yeom, S. Yoo, J. Hong, I. Ha</i>	

VOLUME 2

Engine Yaw Augmentation for Hybrid-Wing-Body Aircraft via Optimal Control Allocation Techniques	878
<i>B. Taylor, S. Yoo</i>	
Demonstration of the Optimal Control Modification for General Aviation: Design and Simulation	890
<i>S. Reed, J. Steck, N. Nguyen</i>	
Peak-Seeking Control of a DC Motor Driving a Variable Pitch Propeller.....	915
<i>T. Cazenave, M. Pakmehr, E. Feron</i>	
Mixed-Norm Multi-Objective Robust Controller Applied to a Very Flexible Aircraft	925
<i>S. Haghighat, H. Liu, J. Martins</i>	
Optimal Control Applied to Aircraft Longitudinal Axis for Energy Trajectory Recovery.....	938
<i>M. Lefebvre, F. Constands, C. Bérard, F. Jouhaud</i>	
Level Set Method Based on Interval Analysis.....	960
<i>E. De Weerd, E. Van Oort, E. Van Kampen, Q. Chu</i>	
Gain Scheduling for the Orion Launch Abort Vehicle Controller	979
<i>S. McNamara, C. Restrepo, E. Medina, R. Whitley, J. Madsen, R. Proud</i>	
The Sensor Test for Orion RelNav Risk Mitigation (STORRM) Development Test Objective	994
<i>J. Christian, H. Hinkel, C. D'Souza, S. Maguire, M. Patangan</i>	

Orion Handling Qualities During ISS Proximity Operations and Docking	1014
<i>J. Stephens, G. Vos, K. Bilimoria, E. Mueller, J. Brazzel, P. Spehar</i>	
Orion's Exoatmospheric Burn Guidance Architecture and Algorithm	1031
<i>S. Thrasher, T. Fill</i>	
Assessment of an Automated Touchdown Detection Algorithm for the Orion Crew Module	1043
<i>R. Gay, M. Baldwin</i>	
Orion Capsule Handling Qualities for Atmospheric Entry	1056
<i>M. Tigges, B. Bihari, J. Stephens, G. Vos, K. Bilimoria, E. Mueller, H. Law, W. Johnson, R. Bailey, B. Jackson</i>	
Method for Rapid Modelling of Missile Aerodynamics	1086
<i>A. Pankonen</i>	
Projectile Monte-Carlo Trajectory Analysis Using a Graphics Processing Unit	1095
<i>M. Ilg, J. Rogers, M. Costello</i>	
Affordable State Estimation Using Inertial Navigation Sensor Arrays	1113
<i>L. Fairfax, F. Fresconi</i>	
Aerodynamic Characterizations of Asymmetric and Maneuvering 105mm, 120mm, and 155mm Fin-Stabilized Projectiles Derived from Telemetry Experiments	1121
<i>F. Fresconi, T. Harkins</i>	
Modelling and Stability Analysis for a Class of 155 mm Spin-stabilized Projectiles with Course Correction Fuse (CCF)	1151
<i>P. Werner, S. Theodoulis</i>	
Star Tracker Attitude Estimation for an Indoor Ground-Based Spacecraft Simulator	1165
<i>J. Tappe, J. Kim, A. Jordan, B. Agrawal</i>	
CubeSat Three Axis Simulator(CubeTAS)	1184
<i>H. Woo, O. Rico Perez, S. Chesi, M. Romano</i>	
Spherical Air Bearing Attitude Control Simulator for Nanosatellites	1192
<i>T. Ustrzycki, R. Lee, H. Chesser</i>	
Multi-Axis Identifiability Using Single-Surface Parameter Estimation Maneuvers on the X-48B Blended Wing Body	1201
<i>N. Ratnayake, E. Koshimoto, B. Taylor</i>	
Aerodynamic Coefficients Estimation of a Flight Vehicle From Different Flight Trials Under Limited Measurements	1220
<i>P. Kar, A. Sarkar, J. Umakant, R. Padhi</i>	
Near Real-time Parameter Estimation in the C-12C	1251
<i>T. Spaulding, C. Naddy, J. Hines, G. Knowlan, D. Riley, Z. Schaffer, T. Jorris</i>	
Flight Test of Orthogonal Square Wave Inputs for Hybrid-Wing-Body Parameter Estimation	1262
<i>Brian Taylor, Nalin Ratnayake</i>	
Reduced Order Multi-body Problems	1276
<i>P. Thompson</i>	
A Real-time Helicopter Model with Flexible Main Rotor Blades	1307
<i>Bruce Haycock, Peter Grant</i>	
Small-Scale Helicopter Blade Flap-Lag Equations of Motion for a Flybarless Pitch-Lag-Flap Main Rotor	1319
<i>S. Taamallah</i>	
Development of a Simplified Helicopter Model for Piloted Training Simulation	1339
<i>G. Avanzini, G. De Matteis, L. Cistriani, M. Valentini</i>	
Error Estimation of Low-order Model for Gossamer Multi-body Structure	1355
<i>Masahiko Yamazaki, Yasuyuki Miyazaki</i>	
Derivative-Free Output Feedback Adaptive Control	1364
<i>T. Yucelen, K. Kim, A. Calise</i>	
A Parameter Dependent Riccati Equation Approach to Output Feedback Adaptive Control	1381
<i>K. Kim, T. Yucelen, A. Calise</i>	
Lyapunov-based Integration of a Data Recording Algorithm in Adaptive Control	1397
<i>G. Chowdhary, E. Johnson</i>	
Decentralized Adaptive Control of a Piecewise Linear Turboshaft Engine Model	1411
<i>M. Pakmehr, J. Paduano, E. Feron, A. Behbahani</i>	
Improving Adaptation Performance For Systems With Slow Dynamics	1427
<i>J. Muse</i>	
An Adaptive Law with Tracking Error Dependent Adaptive Gain Adjustment Mechanism	1447
<i>J. Muse</i>	
Application of Structural Load Feedback in Flight Control	1466
<i>S. Frost, K. Trinh, B. Taylor, C. Jutte, J. Burken, M. Bodson</i>	
Stability Enhancement of a Transonic Wing Using a Simple Passive Attachment	1477
<i>S. Hubbard, D. McFarland, A. Vakkas, L. Bergman, R. Fontenot, R. Brown, P. Cizmas, T. Strganac</i>	
Linear Parameter Varying Control for the X-53 Active Aeroelastic Wing	1487
<i>P. Seiler, G. Balas, A. Packard</i>	
Longitudinal Dynamics and Adaptive Control Application for an Aeroelastic Generic Transport Model	1498
<i>N. Nguyen, I. Tuzcu, T. Yucelen, A. Calise</i>	
Development of an Analytical Parameterized Linear Lateral Dynamic Model for an Aerobot Airship	1520
<i>E. Kulczycki, S. Koehler, A. Elfes, D. Bayard, M. Quadrelli, J. Johnson</i>	
Sensory Predictive Guidance in Partially Known Environment	1538
<i>N. Dadkhah, B. Mettler</i>	

Prognostics-enhanced Receding Horizon Mission Planning for Field Unmanned Vehicles	1561
<i>B. Zhang, L. Tang, J. Decastro, K. Goebel</i>	
Persistent Tracking using Unmanned Aerial Vehicle: A Game Theory Method	1577
<i>M. Zhang, H. Liu</i>	
Relative Computer Vision Based Navigation for Small Inspection Spacecraft	1590
<i>B. Twedde</i>	
Control Strategies for Flexible Joint Manipulators	1605
<i>S. Ulrich, J. Sasiadek</i>	
Nonlinear Predictive Control Based on Time-Domain Simulation for Automatic Landing	1619
<i>Alexander Joos, Matthias Müller, Daniel Baumgärtner, Walter Fichter, Frank Allgöwer</i>	
Assessment of Helicopter Model Fidelity through Inverse Simulation	1634
<i>G. Avanzini, G. De Matteis, A. Torasso</i>	
Turn Performance of an Air-Breathing Hypersonic Vehicle	1648
<i>D. Dalle, S. Torrez, J. Driscoll</i>	
Mixed Newtonian-Lagrangian Approach for the Analysis of Flexible Aircraft Dynamics	1667
<i>G. Avanzini, E. Capello, I. Piacenza</i>	
Determination of Sweet Spot for Trailing Aircraft in Formation Flight	1687
<i>W. Okolo, A. Dogan, W. Blake</i>	
Aircraft Stall Recovery Using Nonlinear Smooth Feedback Regulators With Inputs Constraints	1700
<i>J. Dongmo</i>	
Linear Quadratic Tracking Design for a Generic Transport Aircraft with Structural Load Constraints	1719
<i>J. Burken, S. Frost</i>	
Aircraft Loss-of-Control Recovery Using High Order Sliding Mode Control with Optimal Sliding Surfaces	1735
<i>J. Dongmo</i>	
Self-Organizing Map and Back Propagation Network for Aircraft Failure Detection and Identification	1751
<i>J. Davis, B. Wilburn, M. Perhinschi, P. Klinkhachorn</i>	

VOLUME 3

The Effect of Faster Engine Response on the Lateral Directional Control of a Damaged Aircraft.....	1766
<i>R. May, K. Lemon, J. Csank, J. Litt, T. Guo</i>	
An Emergency Engine Response Requirement Analysis Tool for Lateral-Directional Dynamic Aircraft Stability	1779
<i>K. Lemon, J. Litt, R. May</i>	
A Distributed Nonlinear Observer Design Method for Output Estimation in Nonlinear Systems	1790
<i>J. Mohammadpour, A. Hooshmand, H. Malki, K. Grigoriadis, R. Provence</i>	
Nonlinear Model Predictive Controller for Navigation, Guidance and Control of a Fixed-Wing UAV	1804
<i>G. Garcia, S. Keshmiri</i>	
State Estimation for Constrained Systems with Redundant Coordinates	1818
<i>J. Parish, J. Hurtado</i>	
Nonlinear Model Predictive Coordinated Standoff Tracking of Moving Ground Vehicle	1831
<i>S. Kim, H. Oh, A. Tsourdos</i>	
Engine-Out Takeoff Path Optimization out of Terrain Challenging Airports.....	1851
<i>Bertrand Masson, Mike Bain, John Page</i>	
Neural Network based Adaptive Estimation and Guidance: Application to 2D Obstacle Avoidance.....	1863
<i>V. Madayatha, A. Calise</i>	
Adaptive State Estimation for Nonminimum-Phase Systems with Uncertain Harmonic Inputs.....	1885
<i>A. D'Amato, A. Ali, J. Springmann, J. Cutler, A. Ridley, D. Bernstein</i>	
Modeling, Stability Analysis and Simulation of a Stratosphere Hybrid Tethered Platform	1903
<i>Z. Zuo, M. Zhu, Y. Wu, Y. Ma</i>	
On Dynamical Assembly of Nonlinear Uniaxial Atmospheric Flight Mechanics-Revisited in Frequency Domain	1912
<i>A. Omran, B. Newman</i>	
Estimation of Aircraft States and Wind Exposure	1941
<i>J. Lee, A. Dogan, D. Hullender</i>	
Unsteady Aeroelasticity of Generic Transport Model.....	1964
<i>I. Tuzcu, N. Nguyen</i>	
Flight Simulator Motion Literature Pertinent to Airline-Pilot Recurrent Training and Evaluation.....	1975
<i>J. Burki-Cohen, A. Sparko, M. Bellman</i>	
The Influence of Motion System Characteristics on Pilot Control Behaviour	1992
<i>F. Nieuwenhuizen, M. Mulder, M. Van Paassen, H. Bülfhoff</i>	
Tuning Models of Pilot Tracking Behavior for a Specific Simulator Motion Cueing Setting	2007
<i>D. Pool, H. Damveld, M. Van Paassen, M. Mulder</i>	
Effects of Heave Washout Filtering on Motion Fidelity and Pilot Control Behavior for a Large Commercial Airliner.....	2023
<i>A. Van Wieringen, D. Pool, M. Van Paassen, M. Mulder</i>	
Effect of Performing a Boundary-Avoidance Tracking Task on the Perception of Coherence Between Visual and Inertial Cues	2049
<i>A. Valente Pais, M. Van Paassen, M. Mulder, M. Wentink</i>	
Experiments with a Passivity-based Formation Control System for Teams of Small Robotic Drones	2062
<i>C. Rabath, N. Lechevin, J. Apkarian</i>	

Target Assignment via Switching Scheme for Multiple Flight Vehicles in Cooperative Guidance	2085
<i>P. Zhang, H. Liu, Y. Yao</i>	
The Impact of Multi-group Multi-layer Network Structure on the Performance of Distributed Consensus Building Strategies	2097
<i>Y. Wan, K. Namuduri, S. Akula, M. Varanasi</i>	
A Time-to-Go Control Law for Spacing Vehicles to a Point	2117
<i>L. Weitz, J. Hurtado</i>	
Unmanned Aerial Vehicle Formation Flight via a Hierarchical Cooperative Control Approach	2132
<i>Y. Xu, M. Xin, J. Wang</i>	
An Integrated Navigation System Model for Coupled GNSS-Inertial Navigation Research	2147
<i>A. Smith</i>	
Reconfigurable Hardware-in-the-Loop Test Bench for the SHEFEX2 Hybrid Navigation System Experiment	2160
<i>Stephen Steffes, Malak Samaan, Michael Conradt, Stephan Theil</i>	
On-line Modeling and Calibration of Low-Cost Navigation Sensors	2171
<i>J. Gross, Y. Gu, M. Rhudy, F. Barchesky, M. Napolitano</i>	
Development of a GPS/INS Sensor Fusion Simulation Environment Using Flight Data	2185
<i>F. Barchesky, J. Gross, Y. Gu, M. Rhudy, M. Napolitano</i>	
Obtaining the Aerodynamic and Flight Dynamic Characteristics of an Asymmetric Projectile Through Experimental Spark Range Firings	2193
<i>F. Fresconi, I. Celmins, B. Howell</i>	
CFD Simulations and Wind Tunnel Experiments of a Generic Split-Canard Air-to-Air Missile at High Angles of Attack in Turbulent Subsonic Flow.....	2201
<i>T. Honkanen, T. Tuisku, A. Pankkonen</i>	
Unsteady Aerodynamic Simulations of a Canard-Controlled Projectile at Low Transonic Speeds.....	2221
<i>J. Sahu</i>	
Smart Projectile State Estimation Using Evidence Theory	2235
<i>J. Rogers, M. Costello</i>	
Fin Mixing Optimization to Minimize Control Coupling Effects	2268
<i>U. Kutluay</i>	
Range Extension Of An Air-to-air Engagement By Offline Trajectory Optimization.....	2277
<i>P. Kar, A. Mukherjee, A. Sarkar, R. Padhi</i>	
Intermediate eXperimental Vehicle (IXV), the ESA Re-entry Demonstrator.....	2289
<i>E. Zaccagnino, G. Malucchi, V. Marco, A. Drococo, S. Dussy, J. Preaud</i>	
Design and Verification of the GNC for the European ExoMars EDL Demonstrator.....	2302
<i>P. Martella, M. Buonocore, E. Canuto, A. Molano-Jimenez, R. Drai, L. Lorenzoni</i>	
EXPERT - The ESA EXPERIMENTAL Re-Entry Test-Bed. Trajectory and Mission Design.....	2327
<i>A. Martinez Barrio, M. Sudars, R. Aulizio, F. Massobrio, G. Passarelli, J. Gavira, F. Ratti, L. Walpot, J. Thoemel, A. Thirkettle</i>	
Advanced GN&C Technologies for TAEM: Flight Test Results of the Italian Unmanned Space Vehicle	2345
<i>F. Corraro, G. Cuciniello, G. Morani, F. Nebula, R. Palumbo, A. Vitale</i>	
Flying Qualities Analysis for Re-entry Vehicles: Methodology and Application.....	2363
<i>R. Haya-Ramos, L. Penin, C. Parigini, M. Kerr, M. Ganet, J. Preaud, S. Bennani, A. Martinez Barrio</i>	
Demonstrating Robustness of Aerospace Electronic Systems	2373
<i>J. Abraham</i>	
A Generic Methodology for Verification and Validation of M&S Assets: Overview, Applications and Prospects	2381
<i>M. Roza, J. Voogd</i>	
Aircraft Design Simulation Verification and Testing.....	2393
<i>N. Russell, K. Bordignon</i>	
Intuitive Flight Display for Light Aircraft.	2408
<i>P. Chudy, K. Rydlo</i>	
A Transfer of Training Study of Control Loader Dynamics	2418
<i>F. Cardullo, A. Stanco, L. Kelly, J. Houck, R. Grube</i>	
Fault-Tolerant Attitude Control of a Micro-Satellite using a Redundancy-Free Single Gimbal Variable Speed Control Moment Gyroscope (SGVSCMG) System	2435
<i>S. Chandrasekar, I. Hwang</i>	
Attitude Determination and Control Subsystem (ADCS) Preparations for the EPOXI Flyby of Comet Hartley 2	2447
<i>M. Luna, S. Collins</i>	
Position and Attitude Control of an Underactuated Satellite with Constant Thrust	2464
<i>Yasuhiro Yoshimura, Takashi Matsuno, Shinji Hokamoto</i>	
Singularity Visualization and Steering Control Law of Adaptive Skew Pyramid Type CMGs.....	2477
<i>Hirohisa Kojima, Naoki Matsuda, Satoshi Yamaguchi</i>	
A Reconfiguration Scheme for Control Moment Gyros with Adjustable Installation Angles	2493
<i>J. Jin, J. Zhang, Z. Liu</i>	
Data Gathering and Preliminary Results of the System Identification of a Flexible Aircraft Model.....	2503
<i>B. Silva</i>	
Validating the Multidimensional Spline Based Global Aerodynamic Model for the Cessna Citation II	2527
<i>C. De Visser, J. Mulder, Q. Chu</i>	
Aerodynamic and Thrust Force Modeling for a Propulsion Assisted Control Aircraft Test Bed	2543
<i>Z. Merceruio, K. Phillips, Y. Gu, S. Gururajan, M. Napolitano</i>	
Real-Time Frequency Response Estimation from Flight Data.....	2559
<i>M. Holzel, E. Morelli</i>	

Aerodynamic Parameter Identification for Symmetric Projectiles: Comparing Gradient Based and Evolutionary Algorithms	2585
<i>B. Burchett</i>	
Contrail Reduction Strategies Using Different Weather Resources	2598
<i>N. Chen, B. Sridhar, H. Ng</i>	
Dynamic Queuing Network Model for Flow Contingency Management	2609
<i>Y. Wan, C. Taylor, C. Wanke, S. Roy, Y. Zhou</i>	
Strategies to Mitigate Off-Nominal Events in Super Dense Operations	2631
<i>J. Krozel, S. Yang, J. Mitchell, V. Polishchuk</i>	

VOLUME 4

A Queuing Framework for Terminal Area Operations	2647
<i>M. Tandale, S. Vaddi, S. Wiraatmadja, V. Cheng</i>	
Dynamic Real-time Scheduling of Terminal Traffic	2668
<i>H. Chen, Y. Zhao, C. Provan</i>	
Routing Flexible Traffic into Metroplex	2683
<i>P. Wei, J. Chen, D. Andrisani, D. Sun</i>	
High-fidelity Modeling and Simulation of Flutter/LCO for All-movable Horizontal Tail with Free-play	2697
<i>P. Hu, H. Zhao, L. Xue, K. Ni, H. Liu</i>	
Integrated and Multi-fidelity Software Package for Aero- Servo-Thermo-Elasticity and Propulsion (ASTE-P) of Aerospace Vehicles from Subsonic to Hypersonic Flight	2710
<i>P. Hu, L. Xue, K. Ni, H. Zhao, H. Liu, M. Brenner</i>	
Gust Load Alleviation Control for Very Flexible Aircraft	2726
<i>M. Dillsaver, C. Cesnik, I. Kolmanovsky</i>	
Adaptive Flutter Suppression for Aircraft Upset and Damage Conditions	2744
<i>J. Juang, J. Lew, M. Roemer, J. Ge</i>	
Experimental Model Based Robust Aeroseervoelastic Control for the S⁴T Wind-Tunnel Model	2767
<i>J. Zeng, B. Moulin, S. Kukreja</i>	
Modeling Tactical Merge Management Techniques in the TRACON within a Fast-Time ATM Simulation Platform	2788
<i>J. King, J. Scharl, A. Haraldsdottir, K. Zhu</i>	
Creating a Simulation Environment to Analyze Benefits of Real-time Taxi Flow Optimization Using Actual Data	2805
<i>G. Koeners, R. Rademaker</i>	
Build 8 of the Airspace Concept Evaluation System	2818
<i>S. George, G. Satapathy, V. Manikonda, F. Wieland, M. Refai, R. Dupree</i>	
Maturity Enhancements for Aircraft Simulation for Traffic Operations Research	2834
<i>Y. Papelis, M. Croll, H. Garcia, B. Newman, A. Omran, S. Potter, C. Gramlich, J. Tyinis</i>	
Modeling and Simulation of Ground Based Radar Surveillance Solutions for Unmanned Aircraft System Sense and Avoid	2849
<i>K. Noth, D. Luke</i>	
Modeling and Simulation of the Impact of Air Traffic Operations on the Environment	2871
<i>B. Sridhar, N. Chen, H. Ng, A. Morando</i>	
Modeling and Flight Testing of the Longitudinal Dynamics of an Inflatable Wing UAV	2883
<i>A. Brown, E. Johnson</i>	
Effect of Control Surface-Fuselage Inertial Coupling on Hypersonic Vehicle Flight Dynamics	2904
<i>N. Falkiewicz, S. Frendreis, C. Cesnik</i>	
Wind Tunnel Test Results and Performance Prediction for a Ducted Fan with Collective and Cyclic Pitch Actuation for VTOL with Efficient Cruise	2941
<i>M. Colman, S. Suzuki, D. Kubo</i>	
Runway Scheduling Using Generalized Dynamic Programming	2961
<i>J. Montoya, Z. Wood, S. Rathinam</i>	
4D Aircraft Taxiway Conformance Monitoring with Stochastic Linear Hybrid Systems	2975
<i>G. Mann, I. Hwang</i>	
Robust Gate Assignment	2991
<i>S. Kim, E. Feron</i>	
Estimation of Aircraft Taxi-out Fuel Burn using Flight Data Recorder Archives	3003
<i>H. Khadilkar, H. Balakrishnan</i>	
Taxi Route Conformance Monitoring for Surface Operations	3015
<i>Q. Zheng, Y. Zhao, B. Capozzi</i>	
Comparison of the Impacts of Airport Terminal/Surface Weather Hazards	3037
<i>S. Krishna, R. Kicinger, G. Sabhnani, J. Krozel</i>	
Cooperative Road-Network Search Planning of Multiple UAVs Using Dubins Paths	3052
<i>H. Oh, S. Kim, A. Tsourdos, B. White</i>	
Integrating Task Assignment and Guidance via Motion Planning for Unmanned Aerial Vehicles	3068
<i>M. Cons, T. Shima, C. Domshlak</i>	
Application of a General Index Heuristic to Road Surveillance using Multiple UAVs	3099
<i>T. Temple, D. Kingston</i>	

Modeling Interactions Between Flexible Flapping Wing Spars, Mechanisms, and Drive Motors	3121
<i>D. Doman, C. Tang, S. Regisford</i>	
Design and Simulation of a Morphing-Wing Controller with Actuator Loading Penalization	3150
<i>B. Obradovic, K. Subbarao</i>	
Aerodynamic Performance of Small Model of Ornithopter -Numerical Study for Experimental Model-	3174
<i>Masaru Takashi, Hironori Fujii, Katsuyoshi Nakazato</i>	
The Applicability of Unsteady Vortex Panel Methods to the Design of Hovering Flapping-Wing Micro Air Vehicles	3186
<i>D. Prosser, A. Crassidis, A. Ghosh, M. Roemer</i>	
Aero and Structural-dynamic Repeatability of a Novel MAV Wing Manufacturing Process	3205
<i>N. Sladek, M. Anderson, R. Cobb</i>	
Optimization of Flap-Bounding Flight	3217
<i>G. Sachs, J. Lenz, F. Holzapfel</i>	
Identification of Gimbaled Gyroscopic Systems Using Higher Order Sliding Mode Observers	3228
<i>N. Brown, Y. Shtessel</i>	
Robust Integrated Translation and Rotation Finite-Time Maneuver of a Rigid Spacecraft Based on Dual Quaternion	3242
<i>F. Zhang, G. Duan</i>	
Adaptive Actuator Nonlinearity Compensation for Multivariable Systems	3259
<i>G. Tao, J. Burkholder</i>	
Initial-Condition Estimation in Network Synchronization Processes: Algebraic and Graphical Characterizations of the Estimator	3279
<i>M. Xue, E. Yeung, A. Rai, S. Roy, Y. Wan</i>	
Active Flatness Fuzzy Logic Control of Space Membrane Structure	3303
<i>J. Shan, R. Orszulik, P. Wenderski</i>	
Experimental Study on Combining a Simple Input Shaper and Adaptive Positive Position Feedback Control	3315
<i>R. Orszulik, J. Shan</i>	
System Identification and Controller Design of a Micro Air Vehicle using Magnetic Suspension and Balance System	3327
<i>D. Lee, J. Lee, J. Han, Y. Kawamura</i>	
Flight Mode Transitions for a Fixed-Wing Mini Aerial Vehicle from/to Hovering	3355
<i>V. Myrand-Lapierre, E. Gagnon, A. Desbiens, F. Wong</i>	
Experimental Demonstration of Perching by an Articulated Wing MAV	3375
<i>A. Paranjape, J. Kim, N. Gandhi, S. Chung</i>	
Limit-Cycle Oscillation Suppression of Ornithopter Longitudinal Flight Dynamics	3392
<i>J. Kim, J. Lee, J. Han</i>	
Real Time Implementation of a Vision-Based UAV Detection and Tracking System for UAV-Navigation Aiding	3417
<i>Natalie Frietsch, Justus Seibold, Philipp Crocoll, Michael Weiss, Gert Trommer</i>	
Comparison of Fixed and Variable Pitch Actuators for Agile Quadrotors	3428
<i>M. Cutler, N. Ure, B. Michini, J. How</i>	
Analysis of Aircraft Multiple Engine Configurations for Fault Tolerant Control	3445
<i>M. Perhinschi, F. Beamer</i>	
Estimating Loss-of-Control: a Data-Based Predictive Control Approach	3461
<i>J. Barlow, V. Stepanyan, K. Krishnakumar</i>	
Open and Closed Loop Control of a Transport Aircraft After Component Failure	3470
<i>O. Daskiran, M. Kavsaoglu</i>	
Nonlinear Flight Guidance and Control Design for a Loss-of-thrust Aircraft	3484
<i>G. Xu, H. Liu</i>	
Fault-tolerant Control for Output Tracking Systems Subject to Actuator Saturation and Constant Disturbances: An LMI Approach	3501
<i>J. Fan, Z. Zheng, Y. Zhang</i>	

VOLUME 5

Simulation and Adaptive Control of a High Agility Model Airplane in the Presence of Severe Structural Damage and Failures	3516
<i>S. Baur, T. Gibson, A. Annaswamy, L. Höch, F. Holzapfel</i>	
Fault Tolerant Control of an Over Actuated UAV	3542
<i>S. Isik, O. Tekinalp, I. Yavrucuk</i>	
Accounting for Performance Limitations Inside the Model Following Control System of an Unmanned Helicopter	3553
<i>Fabian Klüssendorf, Sven Lorenz</i>	
Geometric 3D Path-Following Control for a Fixed-Wing UAV on SO(3)	3578
<i>V. Cichella, E. Xargay, V. Dobrokhotov, I. Kaminer, A. Pascoal, N. Hovakimyan</i>	
Configuration Space and Visibility Graph Generation from Geometric Workspaces for UAVs	3593
<i>F. Scholer, A. La Cour-Harbo, M. Bisgaard</i>	
Adjoint Stability and Miss-Distance in Proportional Navigation	3605
<i>O. Goldan, S. Gutman</i>	
A Novel Approach to Deterministic Performance Analysis of Guidance Loops with Saturation	3615
<i>M. Weiss, D. Bucco</i>	

Guidance Laws Against Defended Aerial Targets	3629
<i>Ashwini Ratnoo, Tal Shima</i>	
A ZEM Dynamics Based Integrated Estimation Guidance and Control of Interceptors	3647
<i>P. Dwivedi, S. Tiwari, A. Bhattacharya, R. Padhi</i>	
Modified CLOS Intercept Guidance for Aircraft Defense Against a Guided Missile	3671
<i>T. Yamasaki, S. Balakrishnan, H. Takano</i>	
The Human Visual System and its Role in Motion Perception	3686
<i>F. Cardullo, B. Sweet, R. Hosman, C. Coon</i>	
Visual Perception in Manual Control	3697
<i>R. Hess, P. Zaal</i>	
Depth Perception, Cueing, and Control	3721
<i>B. Sweet, M. Kaiser</i>	
Visual-Vestibular Interaction in Motion Perception	3731
<i>R. Hosman, F. Cardullo, J. Bos</i>	
Development of a Differential Drag Controller With Uncertainty in the Relative State	3744
<i>A. Lum, E. Lightsey</i>	
Relative Motion Guidance, Navigation and Control for Autonomous Orbital Rendezvous	3762
<i>M. Okasha, B. Newman</i>	
Guidance, Navigation and Control for Satellite Proximity Operations using Tschauner-Hempel Equations	3782
<i>M. Okasha, B. Newman</i>	
Mesh-Based Entry Vehicle and Explosive Debris Re-Contact Probability Modeling	3804
<i>Mark McPherson, Gavin Mendeck</i>	
Satellite Dynamics Simulator Development Using Lie Group Variational Integrator	3816
<i>D. Lee, J. Springmann, S. Spangelo, J. Cutler</i>	
Mission Capability Gains from Multi-Mode Propulsion Thrust Profile Variations for a Plane Change Maneuver	3836
<i>Tiffany Rexius, Michael Holmes</i>	
Comparison of Angular Velocity Estimation Methods for Spinning Spacecraft	3850
<i>J. Thienel, F. Markley</i>	
Steady-State Accuracy Solutions of More Spacecraft Attitude Estimators	3865
<i>A. Fosbury</i>	
A Maximum Information Rate Quaternion Filter for Spacecraft Attitude Estimation	3884
<i>J. Reijneveld, A. Maas, D. Choukroun, J. Kuiper</i>	
A Highly Robust Lost In Space Algorithm Based On The Shortest Distance Transform	3906
<i>T. Delabie, T. Durt, J. Vandersteen</i>	
Filtering Methods for Error Reduction in Spacecraft Attitude Estimation Using Quaternion Star Trackers	3921
<i>P. Calhoun, J. Sedlak, E. Superfin</i>	
Time Delay Margin Analysis Applied to Model Reference Adaptive Control	3935
<i>A. Dorobantu, P. Seiler, G. Balas</i>	
On Time Delay Margin Estimation for Adaptive Control and Robust Modification Adaptive Laws	3947
<i>N. Nguyen, E. Summers</i>	
Robust Adaptive Control of Nonlinear Systems with Input/Output Delays	3973
<i>M. Balas, J. Nelson, S. Gajendar, L. Robertson,</i>	
The Effect of Explicit Adaptive Time Delay Compensation on Time Delay Margin	3989
<i>Y. Yildiz</i>	
Limiting Behavior of L₁ Adaptive Controllers	3999
<i>E. Kharisov, K. Kim, X. Wang, N. Hovakimyan</i>	
Discrete-Time Adaptive Posicast Controller for Uncertain Time-Delay Systems	4024
<i>K. Abidi, Y. Yildiz</i>	
Modal Analysis of 1/3-Scale Yak-54 Aircraft Through Simulation and Flight Testing	4035
<i>R. Lykins, S. Keshmiri, R. Riley, G. Garcia</i>	
Aircraft System Identification using Pseudospectral Parameter Optimization with Adaptive Nodes	4042
<i>T. Jorris, B. McCracken</i>	
A New System Identification Method Using Short Duration Flight Test Inputs	4059
<i>E. Bachelder, P. Thompson, D. Klyde, D. Alvarez</i>	
False Fault Detection in Airdata Sensor due to Nonuniform Wind in Aerial Refueling	4082
<i>H. Sevil, A. Dogan</i>	
Robust Longitudinal and Transverse Rate Gyro Bias Estimation for Precise Pitch and Roll Attitude Estimation in Highly Dynamic Operating Environments Utilizing a Two Dimensional Accelerometer Array	4093
<i>W. Scorse, A. Crassidis</i>	
Flight Dynamics Modeling for a Small-Scale Flybarless Helicopter UAV	4121
<i>S. Taamallah</i>	
Development of a Small UAV with Autopilot Capability	4148
<i>Pu Xie, Angel Flores-Abad, Gerardo Martinez, Ou Ma</i>	
UAV Flight Control Using Flow Control Actuators	4161
<i>E. Johnson, G. Chowdhary, R. Chandramohan, A. Calise</i>	
A Piloted Evaluation of Damage Accommodating Flight Control Using a Remotely Piloted Vehicle	4167
<i>K. Cunningham, D. Cox, D. Murri, S. Riddick</i>	
Flight Test of Composite Model Reference Adaptive Control (CMRAC) Augmentation Using NASA AirSTAR Infrastructure	4187
<i>I. Gregory, R. Gadiant, E. Lavretsky</i>	

Handling Qualities of Model Reference Adaptive Controllers with Varying Complexity for Pitch-Roll Coupled Failures	4217
<i>J. Schaefer, C. Hanson, M. Johnson, N. Nguyen</i>	
Derivative-Free Output Feedback Adaptive Control of an Aeroelastic Generic Transport Model	4238
<i>T. Yucelen, A. Calise, K. Kim, N. Nguyen</i>	
Perching Maneuver for an MAV Augmented with an L₁ Adaptive Controller	4257
<i>R. Choe, N. Hovakimyan</i>	
Adaptive Output Feedback Control for an Aeroelastic Generic Transport Model: A Parameter Dependent Riccati Equation Approach	4272
<i>K. Kim, A. Calise, T. Yucelen, N. Nguyen</i>	
L₁ Adaptive Augmented Dynamic Inversion Controller for a High Agility UAV	4288
<i>M. Geiser, E. Xargay, N. Hovakimyan, T. Bierling, F. Holzapfel</i>	
Rapid Solution and Variable-fidelity Modeling of Aeroelasticity(AE) /Aeroservoelasticity (ASE) Using ASTE-P Toolset	4306
<i>P. Hu, H. Zhao, L. Xue, K. Ni, H. Liu, M. Brenner</i>	
Suppression of the Aeroelastic/Aeroservoelastic Interaction Using Adaptive Feedback Control Instead of Notching Filters	4326
<i>J. Zeng, J. Wang, R. De Callafon, M. Brenner</i>	
Controller and Aeroelasticity Analysis for a Morphing Wing	4346
<i>T. Grigorie, A. Popov, R. Botez, M. Mamou, Y. Mebarek</i>	
Ares I-X Range Safety Trajectory Analyses and Independent Validation and Verification	4360
<i>A. Tarpley, B. Starr, P. Tartabini, A. Craig, C. Merry, J. Brewer, J. Davis, M. Dulski, A. Gimenez, M. Barron</i>	
Ares I-X Separation and Reentry Trajectory Analyses	4383
<i>P. Tartabini, B. Starr</i>	

VOLUME 6

Trajectory-Based Loads for the Ares I-X Test Flight Vehicle	4397
<i>R. Vause, B. Starr</i>	
Use of Smoothed Measured Winds to Predict and Assess Launch Environments	4426
<i>H. Cordova, F. Leahy, S. Adelfang, B. Roberts, R. Barbre, B. Starr, D. Puperi, P. Duffin</i>	
Use of Flexible Body Coupled Loads in Assessment of Day of Launch Flight Loads	4433
<i>B. Starr, I. Yunis, A. Olds</i>	
Ares I-X Best Estimated Trajectory and Comparison with Preflight Predictions	4447
<i>C. Karlgaard, R. Beck, S. Derry, J. Brandon, B. Starr, P. Tartabini, A. Olds</i>	
Nonlinear Dynamic Inversion Baseline Control Law: Architecture and Performance Predictions	4468
<i>C. Miller</i>	
Nonlinear Dynamic Inversion Baseline Control Law: Flight-Test Results for the Full-scale Advanced Systems Testbed F/A-18 Airplane	4493
<i>C. Miller</i>	
Design and Flight Testing of Manual Nonlinear Flight Control Laws	4518
<i>T. Lombaerts, G. Looye</i>	
Intelligent Control for Drag Reduction on the X-48B Vehicle	4539
<i>B. Griffin, N. Brown, S. Yoo</i>	
Flight Testing the X-48B Angle-of-Attack and Sideslip Limiting System	4551
<i>D. Hyde, R. Gradient, E. Lavretsky</i>	
High Maneuverable Flight Performance Evaluation Method	4563
<i>Cezary Szczepanski, Krzysztof Butlewski</i>	
Flight Mission Performance Evaluation Method	4571
<i>Cezary Szczepanski, Wojciech Puchalski</i>	
Estimation of Time-Varying Pilot Model Parameters	4580
<i>P. Zaal, B. Sweet</i>	
Comparing Multimodal Pilot Pitch Control Behavior Between Simulated and Real Flight	4597
<i>P. Zaal, D. Pool, M. Van Paassen, M. Mulder</i>	
Placement of a Team of Surveillance Vehicles Subject to Navigation Failures	4621
<i>J. Marier, C. Rabath, N. Lechevin</i>	
Network Topology Design for UAV Swarming with Wind Gusts	4633
<i>A. Chapman, R. Dai, M. Mesbahi</i>	
Multi-vehicle Control in a Strong Flowfield with Application to Hurricane Sampling	4652
<i>L. Devries, D. Paley</i>	
Distributed Target Tracking and Collision Avoidance Using Multiple Nonholonomic Robots with Uncertain Dynamics	4679
<i>Z. Li, J. Vanness, D. Caballero, N. Hovakimyan, D. Stipanovic</i>	
Multi-Agent Planning for Persistent Missions with Automated Battery Management	4694
<i>J. Redding, T. Toksoz, N. Ure, A. Geramifard, J. How, M. Vavrina, J. Vian</i>	
Distributed Estimation for Motion Coordination in an Unknown Spatiotemporal Flowfield	4715
<i>C. Peterson, D. Paley</i>	
Towards Certifiable Advanced Flight Control Systems, A Sensor Based Backstepping Approach	4737
<i>W. Falkena, E. Van Oort, Q. Chu</i>	

State Limiter for Model Following Control Systems.....	4747
<i>R. Gadient, E. Lavretsky, D. Hyde</i>	
Autonomous Flight Control Design for a Small-scale Unmanned Helicopter.....	4758
<i>K. Peng, B. Chen, K. Lum</i>	
Passivity Analysis for Non-Linear, Non-Stationary Entry Capsules: Rotational Motion.....	4778
<i>E. Mooij</i>	
PDE Boundary Control for Flexible Articulated Aircraft Wings.....	4803
<i>A. Paranjape, S. Chung, M. Krstic</i>	
Output Tracking of Non-Minimum Phase Dynamics.....	4818
<i>A. Siddarth, J. Valasek</i>	
Tightly-coupled INS/GPS using Quaternion-based Unscented Kalman filter	4833
<i>Junchuan Zhou, Yuhong Yang, Jieying Zhang, Ezzaldeen Edwan, Otmar Loffeld, Stefan Knedlik</i>	
WiFi Localization Experiments with an Unmanned Aircraft System.....	4847
<i>M. Stachura, E. Frew</i>	
Terrain Relative Navigation Using Crater Identification in Surface Topography Data.....	4858
<i>R. Rohrschneider</i>	
Sensitivity Analysis of EKF and UKF in GPS/INS Sensor Fusion.....	4871
<i>M. Rhudy, Y. Gu, J. Gross, M. Napolitano</i>	
Building a Probabilistic Occupancy Map for Space Situational Awareness	4886
<i>I. Hussein, Y. Wang, R. Erwin</i>	
Orbit Determination Using TDMA Radio Navigation Data with Implicit Measurement Times	4900
<i>R. Dougherty, M. Psiaki</i>	
AV Metrics for Object Correlation, Maneuver Detection, and Maneuver Characterization.....	4921
<i>M. Holzinger</i>	
Development of a Multi-Purpose Engineering Flight Simulator	4937
<i>J. Kruep</i>	
G-Pointing: Articulated Centrifuge for Real-Time G Flight Simulation.....	4949
<i>S. Glaser, M. Newman</i>	
A New Flight Training Device for Modern Lightweight Gyroplanes	4957
<i>I. Pruter, H. Duda</i>	
The Quest for more Effective and Cheaper Simulator Development.....	4968
<i>Daniel Werner</i>	
Fuel-efficient Descent and Landing Guidance Logic for a Safe Lunar Touchdown.....	4978
<i>A. Lee</i>	
Linear Approximation to Optimal Control Allocation for Rocket Nozzles With Elliptical Constraints	5000
<i>J. Orr, J. Wall</i>	
Pitch-Over Maneuver and Guidance for Rocket-Back Boosters	5012
<i>P. Lu, D. Neal, S. Su, K. Horneman, J. Schierman</i>	
Launch Vehicle Failure Dynamics and Abort Triggering Analysis.....	5030
<i>J. Hanson, A. Hill, B. Beard</i>	
Space Demonstration of Bare Electrodynamic Tape-Tether Technology on the Sounding Rocket S520-25.....	5045
<i>H. Fujii, T. Watanabe, H. Sahara, H. Kojima, S. Takehara, Y. Yamagawa, S. Sasaki, T. Abe, K. Tanaka, K. Oyam, L. Johnson, G. Khazanov, J. Sanmartin, M. Charro, M. Kruijff, E. Van Der Heide, B. Rubin, F. Garcia De Quiros, P. Trivailo, P. Williams</i>	
Integrated Rocket-Back Guidance and a Comparative Rocket-Back Study.....	5057
<i>S. Su, D. Neal, K. Horneman, J. Schierman, P. Lu</i>	
Further Results Towards a Location-Scheduled Control Methodology	5072
<i>M. Sorgenfrei, S. Joshi</i>	
Flight Implementation of Pseudospectral Optimal Control for the TRACE Space Telescope.....	5084
<i>M. Karpenko, S. Bhatt, N. Bedrossian, A. Fleming, I. Ross</i>	
Torque-saturated, Inertia-Free Spacecraft Attitude Control.....	5098
<i>G. Cruz, X. Yang, A. Weiss, I. Kolmanovsky, D. Bernstein</i>	
The Design of Polynomial Eigenstructure Assignment Controller and Its Robust Analysis for Flexible Spacecraft Precise Control System	5123
<i>F. Wang, F. Ankersen, A. Tsourdos, B. White, A. Stanley</i>	
Attitude Control Actuators for a Simulated Spacecraft	5140
<i>C. McChesney</i>	
Attitude Stabilization Using Blurred Star Images for a Nano-astrometry Satellite Mission.....	5165
<i>T. Inamori</i>	
Flight Departure Delay and Rerouting Under Uncertainty In En Route Convective Weather	5176
<i>A. Mukherjee, S. Grabbe, B. Sridhar</i>	
The Value of Reduced Uncertainty in Air Traffic Flow Management	5185
<i>J. Rios, A. Morando</i>	
Clear-Air Turbulence Impact Modeling Based on Flight Route Analysis	5199
<i>V. Klimenko, J. Krozel</i>	
A Stochastic Modeling and Analysis Approach to Strategic Traffic Flow Management under Weather Uncertainty	5212
<i>Y. Zhou, Y. Wan, S. Roy, C. Taylor, C. Wanke</i>	
Air Traffic Estimation and Decision Support for Stochastic Flow Management	5230
<i>Prasenjit Sengupta, Monish Tandale, Victor Cheng, Padmanabhan Menon</i>	
Modeling and Optimization of Terminal Airspace and Aircraft Arrival Subject To Weather Uncertainties	5255
<i>M. Kamgarpour, W. Zhang, C. Tomlin</i>	

Estimation of Aerodynamic Angles in a Mini Aerial Vehicle under Turbulent Atmosphere.....	5268
<i>C. Ramprasad, Hemendra Arya</i>	

VOLUME 7

Experimental and Analytical Pressure Characterization of a Rigid Flapping Wing for Ornithopter Development	5281
<i>D. Yeo, E. Atkins, W. Shyy</i>	
Mathematical Modeling of a Small Scale Ducted-Fan UAV.....	5299
<i>Y. Choi, S. Hong, J. Suk, J. Jang, D. Lee</i>	
Hawkeye UAV Dynamic Analysis.....	5312
<i>William Vanskike, Matthew Williams, Thomas Stastny, Aditya Ghate, Sarah McCandless, Travis Peckman</i>	
Development, Modeling and Simulation of Multiple Design Concepts for a Small Unmanned Airship.....	5336
<i>Maria Acanfora, Agostino De Marco, Leonardo Lecce</i>	
System Identification Applied to Dynamic CFD Simulation and Wind Tunnel Data	5357
<i>Patrick Murphy, Vladislav Klein, Neal Frink, Dan Vicroy</i>	
CFD Modeling for Trajectory Predictions of a Generic Fighter Configuration	5371
<i>M. Ghoreyshi, A. Jirasek, R. Cummings</i>	
Modeling of Unsteady Aerodynamic Loads.....	5388
<i>A. Da Ronch, A. McCracken, K. Badcock, M. Ghoreyshi, R. Cummings</i>	
On the Applicability of an Unsteady Aerodynamic ROM to the Transonic Flight Regime	5404
<i>T. Skujins, C. Cesnik</i>	
Characterisation of Wind Tunnel Observed, Large-amplitude Pitch Limit-cycles	5419
<i>J. Pattinson, M. Lowenberg, M. Goman</i>	
Experiments on Free-to-Pivot Hover Motions of Multi-hinged Flat Plates	5444
<i>K. Granlund, M. Ol, L. Bernal</i>	
A Method for Using Historical Ground Delay Programs to Inform Day-of-Operations Programs	5462
<i>S. Wolfe, J. Rios</i>	
Failure Mode and Effects Analysis for Super Dense Operations	5474
<i>M. Ganji, J. Krozel</i>	
Impact Analysis for Space Weather Hazards.....	5491
<i>K. Chandhok, V. Klimenko, J. Krozel</i>	
A Decision Support Tool for High Density Area Departure and Arrival Traffic Management.....	5501
<i>C. Taylor, T. Masek, H. Bateman</i>	
Robustness Analysis of Terminal Area Scheduling Operations Using a Queuing Framework.....	5526
<i>S. Vaddi, M. Tandale, V. Cheng</i>	
Traffic Management Advisor Flow Programs: an Atlanta Case Study	5541
<i>S. Grabbé, B. Sridhar, A. Mukherjee, A. Morando</i>	
Modeling and Simulation of Interactions Between Traffic Flow Management and Separation Assurance	5555
<i>G. Hunter, B. Boisvert</i>	
Super Density Operations Airspace Modeling for the Southern California Metroplex.....	5566
<i>S. Timar, G. Nagle, A. Saraf, P. Yu, P. Hunt, A. Trapani, N. Johnson</i>	
Convective Weather Avoidance Modeling in Low-Altitude Airspace	5580
<i>S. Campbell, R. Delaura</i>	
Modeling Off-Nominal Recovery in NextGen Terminal-Area Operations	5593
<i>T. Callantine</i>	
Mitigating Unfavorable Pilot Interactions with Adaptive Controllers in the Presence of Failures/Damage	5605
<i>D. Klyde, C. Liang, D. Alvarez, N. Richards, R. Adams, B. Cogan</i>	
Power Frequency - A New Metric for Analyzing Pilot-in-the-Loop Flying Tasks	5622
<i>Amanda Lampton, David Klyde</i>	
Verification of a Flying Wing Handling Qualities Analysis by Means of In-Flight Simulation	5643
<i>Jana Ehlers, Dominik Niedermeier, Dirk Leissling</i>	
Criteria to Mitigate Rudder Overcontrol in Transport Aircraft	5658
<i>Roger Hoh, Thomas Nicoll, Paul Desrochers</i>	
Handling Qualities of a Blended Wing Body Aircraft.....	5681
<i>T. Peterson, P. Grant</i>	
Limited Handling Qualities Evaluation of Inter-axis Control Coupling.....	5705
<i>D. Fields, D. Marten, G. Di Loreto, R. Koo, J. Lemery, K. Ryan</i>	
The SkyObserver Project: Autonomous Swarms in Civil Emergency and Disaster Management	5828
<i>T. Passenbrunner, T. Schwarzgruber, P. Ortner, L. Del Re, M. Naderhirm</i>	
Modelling and Multivariable Control Techniques for Small Coaxial Helicopters	5839
<i>Prasenjit Mukherjee, Steven Waslander</i>	
Cooperative Aerial Tracking and Rendezvous Along Time-Optimal 3-Dimensional Curves	5860
<i>Mark Owen, Joseph Nichols, Mark Colton</i>	
Controlled Manipulation with Multiple Quadrotors.....	5874
<i>M. Srikanth, A. Soto, A. Annaswamy, E. Lavretsky, J. Slotine</i>	
Reduced Order Roll/Yaw Model for Dipteron Flapping Forward Flight.....	5890
<i>I. Faruque, J. Humbert</i>	
Cassini Orbit Trim Maneuvers at Saturn - Overview of Attitude Control Flight Operations	5898
<i>T. Burk</i>	

In-Flight Tuning of the Cassini RCS Attitude Controller	.....	5917
<i>T. Brown</i>		
Estimation of Enceladus Plume Density Using Cassini Flight Data	.....	5931
<i>E. Wang, A. Lee</i>		
Characterizing Observed Limit Cycles in the Cassini Main Engine Thrust Vector Control System	.....	5973
<i>F. Rizvi, R. Weitl</i>		
Cassini Attitude Control Operations - Guidelines Levied on Science to Extend Reaction Wheel Life	.....	5987
<i>C. Mittelstaedt</i>		
A Preliminary Study of Human Pilot Dynamics in the Control of Time-Varying Systems	.....	5999
<i>R. Hess</i>		
Phase Coherence Zones in Flight Simulation	.....	6041
<i>P. Jonik, A. Valente Pais, M. Van Paassen, M. Mulder</i>		
Relationship Between Optimal Gain and Coherence Zone in Flight Simulation	.....	6058
<i>B. Correia Grácio, A. Valente Pais, M. Van Paassen, M. Mulder, L. Kelly, J. Houck</i>		
A Safety Verification Approach to Fault-Tolerant Aircraft Supervisory Control	.....	6072
<i>J. Decastro, L. Tang, B. Zhang, G. Vachtsevanos</i>		
Hazard Alerting Based on Probabilistic Models	.....	6089
<i>J. Chrysanthacopoulos, M. Kochenderfer</i>		
Testing of Immunity-Based Failure Detection and Identification Scheme with the NASA Generic Transport Model	.....	6102
<i>M. Perhinschi, H. Moncayo, B. Wilburn, A. Bartlett, J. Davis, O. Karas</i>		
Adaptive Control of an Elastic General Aviation Aircraft	.....	6118
<i>Brian Hinson, James Steck, Kamran Rokhsaz, Nhan Nguyen</i>		
An Artificial Physics Approach to Plume Detection with Fixed Wing UAVs	.....	6141
<i>Thomas Apker, Mitchell Potter</i>		
Application of a Six Degree of Freedom Adaptive Controller to a General Aviation Aircraft	.....	6152
<i>Kimberly Lemon, James Steck, Brian Hinson, Kamran Rokhsaz, Nhan Nguyen</i>		

VOLUME 8

A Flight Dynamics Model for a Multi-Actuated Flexible Rocket Vehicle	.....	6176
<i>J. Orr</i>		
Production of Synthetic Winds for Launch Vehicle Loads and Trajectory Simulations Based on Principal Component Analysis	.....	6190
<i>R. Walterscheid, B. Sako</i>		
First Stage Solid Propellant Multiply Debris Thermal Analysis	.....	6201
<i>B. Toleman</i>		
A Method for Optimizing Launch Vehicle Aero-Assist Including Path Optimization	.....	6209
<i>R. Hartfield, V. Ahuja, K. Albarado, T. Walsh</i>		
Optimal Guidance-to-Collision for an Accelerating Exo-Atmospheric Interceptor Missile	.....	6223
<i>D. Reisner, T. Shima</i>		
Nose Jet Guidance and Control for Exoatmospheric Kill-Vehicle	.....	6242
<i>Shaul Gutman</i>		
A Novel Concept for Scheduling and Effect Assessment of Soft-kill Against an Antiship Missile Based on the Adjoint Method	.....	6258
<i>M. Weiss, A. Vermeulen, J. Bos, D. Bucco</i>		
Simple Missile Models Against High-g Barrel Roll Maneuver	.....	6276
<i>Timo Silaranta, Ari Siltavuori, Antti Pankkonen</i>		
Costate Estimation Using Multiple-Interval Pseudospectral Methods	.....	6288
<i>C. Darby, D. Garg, A. Rao</i>		
Hybrid Gauss Pseudospectral and Generalized Polynomial Chaos Algorithm to Solve Stochastic Trajectory Optimization Problems	.....	6312
<i>G. Cottrill, F. Harmon</i>		
Synthesis of Optimal Finite Frequency Controllers for Flexible Robotic Manipulator Control	.....	6328
<i>J. Forbes, C. Damaren</i>		
Finite-Horizon Optimal Control Using Neural Networks with an Application to Orbit Transfer Problems	.....	6344
<i>Ali Heydari</i>		
Continuous Aerodynamic Modelling of Entry Shapes	.....	6362
<i>D. Dirkx, E. Mooij</i>		
Rapid Design Space Exploration for Conceptual Design of Hypersonic Missions	.....	6386
<i>M. Grant, I. Clark, R. Braun</i>		
Differential Wheel Speed Sensor Integration with GPS/INS for Land Vehicle Navigation	.....	6402
<i>A. Hazlett, J. Crassidis, D. Fuglewicz, P. Miller</i>		
Analysis and Testing of a LIDAR-Based Approach to Terrain Relative Navigation for Precise Lunar Landing	.....	6422
<i>A. Johnson, T. Ivanov</i>		
Distributed Extended Kalman Filtering for Reliable Navigation on Lunar Surface	.....	6432
<i>A. Hooshmand, J. Mohammadpour, H. Malki, R. Provence</i>		
A Terrain Classification Method for Planetary Rover Utilizing Dynamic Texture	.....	6442
<i>Koki Fujita, Naoyuki Ichimura</i>		

Terrain Mapping and Landing Operations Using Vision Based Navigation Systems	6454
<i>M. Majji, J. Davis, J. Doeblner, B. Macomber, J. Junkins, M. Vavrina, J. Vian</i>	
Characterizing and Calibrating the Novel PhaseSpace Camera System	6469
<i>J. Davis, J. Doeblner, J. Junkins, M. Vavrina, J. Vian</i>	
Assessment of the Draft AIAA S-119 Flight Dynamic Model Exchange Standard	6478
<i>E. Jackson, D. Murri, M. Hill, M. Jessick, J. Penn, D. Hasan, E. Crues, R. Falck, T. McCarthy, N. Vuong, C. Zimmerman</i>	
Savant-ML Modeling Library for Fluid-Thermal Building Control and Simulation	6484
<i>C. Ippolito, F. Mokaya, J. Lohn</i>	
Leveraging MathWorks Tools to Develop a Simulation Framework for Diverse Customers	6501
<i>M. Allen, E. Beyer, S. Hales, C. Ilvedson</i>	
Enabling Modular Design Platforms using Variants in Model-Based Design	6521
<i>Saurabh Mahapatra</i>	
Model Integration with the Common Simulation Framework SIRIUS	6534
<i>Ulrich Sennes, Roland Schabenberger</i>	
Extensions to the Dynamic Aerospace Vehicle Exchange Markup Language	6546
<i>G. Brian, E. Jackson</i>	
A Sensor Driven Trade Study for Autonomous Navigation Capabilities	6563
<i>S. Munoz, E. Lightsey</i>	
Pattern Recognition for a Flight Dynamics Monte Carlo Simulation	6579
<i>C. Restrepo, J. Hurtado</i>	
Advances on a 6 Degrees of Freedom Testbed for Autonomous Satellites Operations	6588
<i>D. Gallardo, R. Bevilacqua, R. Rasmussen</i>	
Thermally Induced Dynamics of Large Solar Array Paddle: from Laboratory Experiment to Flight Data Analysis	6605
<i>T. Iwata, K. Matsumoto, H. Hoshino</i>	
Autonomous Aerobatic Flight by Three-Dimensional Path-Following with Relaxed Roll Constraint	6625
<i>S. Park</i>	
Mission Planning and Flight Precision Analysis for Autonomous Aerial Magnetic Scanning	6639
<i>C. Eck, E. Styger, B. Imbach, J. Stoll</i>	
Non-affine Waypoint Guidance Law using Distance Information	6649
<i>G. Moon, Y. Kim</i>	
Pseudo-Spectral-Method Based Optimal Glide in the Event of Engine Cut-off	6662
<i>M. Dekel, J. Ben-Asher</i>	
Path Generation Algorithm for Turbulence Avoidance Using Real-Time Optimization Technique	6677
<i>N. Yokoyama</i>	
Real-time Trajectory Generation for Collision Avoidance with Obstacle Uncertainty	6696
<i>C. Lai, J. Whidborne</i>	
Performance of NLP Algorithms with Inverse Dynamics for Near-Real Time Trajectory Generation	6716
<i>R. Drury</i>	
Formation Flying of UAVs with Dynamic Inversion Based Partial Integrated Guidance and Control	6730
<i>P. Rakesh, R. Padhi</i>	
Flight Path Planning for Descent-phase Helicopter Autorotation	6755
<i>Thanan Yomchinda, Joseph Horn, Jack Langelaan</i>	
Performance Analysis of a Vision Only Sense and Avoid System for Small UAVs	6779
<i>B. Vanek, T. Peni, A. Zarandy, J. Bokor, T. Zsedrovits, T. Roska</i>	
Vision-based Reactive Collision Avoidance Algorithm for Unmanned Aerial Vehicle	6792
<i>H. Choi, Y. Kim, I. Hwang</i>	
Evaluation of Derivative-Free Adaptive Controller with Optimal Control Modification	6810
<i>T. Yucelen, A. Calise, N. Nguyen</i>	
Accommodating Sensor Bias in MRAC for State Tracking	6822
<i>P. Patre, Suresh Joshi</i>	
Optimal Control Modification Adaptive Law with Covariance Adaptive Gain Adjustment and Normalization	6840
<i>N. Nguyen, J. Burken, C. Hanson</i>	
Handling Qualities Evaluations of Low Complexity Model Reference Adaptive Controllers for Reduced Pitch and Roll Damping Scenarios	6855
<i>C. Hanson, J. Schaefer, J. Burken, M. Johnson, N. Nguyen</i>	
Flight Test of L₁ Adaptive Control Law: Offset Landings and Large Flight Envelope Modeling Work	6874
<i>I. Gregory, E. Xargay, C. Cao, N. Hovakimyan</i>	
Adaptive Estimation Based Loss of Control Detection and Mitigation	6890
<i>V. Stepanyan, K. Krishnakumar, J. Barlow, H. Bijl</i>	
A Handling Qualities Assessment of a Business Jet Augmented with an L₁ Adaptive Controller	6902
<i>O. Stroosma, H. Damveld, J. Mulder, R. Choe, E. Xargay, N. Hovakimyan</i>	
Derivation and Analysis of the Equations of Motion for a Ducted Fan UAV	6915
<i>B. Stilman, M. Cotting, O. Ohanian III</i>	
Evaluation of Multi-body Parafoil Dynamics Using Distributed Miniature Wireless Sensors	6935
<i>C. Gorman, N. Slegers</i>	
Aircraft Lateral Trim Using Internal Fuel Transfer & Differential Thrust In Formation Flight	6955
<i>W. Okolo, A. Dogan, W. Blake</i>	
Development of a Simulation Environment to Support Aircraft Health Management Education	6970
<i>Frederick Beamer, Mario Perhinschi, Matthew Cunningham, Jennifer Davis</i>	

Extended Kalman Filter vs. Error State Kalman Filter for Aircraft Attitude Estimation	6986
<i>V. Madayatha, V. Ravindra, S. Mallikarjunan, A. Goyal</i>	
Modified State Observer for Orbit Uncertainty Estimation	7009
<i>N. Harl, K. Rajagopal, S. Balakrishnan</i>	
Desensitized Optimal Filtering	7034
<i>Chris Karlgaard, Haijun Shen</i>	

VOLUME 9

Anisotropic Sparse Gauss-Hermite Quadrature Filter	7049
<i>B. Jia, M. Xin, Y. Cheng</i>	
Numerical Solution of a Generalized Wahba Problem for a Spinning Spacecraft	7066
<i>Mark Psiaki, Joanna Hinks</i>	
Error-Covariance Analysis of the Total Least Squares Problem	7080
<i>J. Crassidis, Y. Cheng</i>	
Nonlinear Estimation and Bayesian Multi-sensor Fusion using Adaptive Quadrature	7105
<i>V. Lee, J. Yoon, P. Vedula</i>	
MAV - Hardware In Loop Simulation using LabVIEW	7121
<i>R. Mahajani, H. Arya</i>	
A Non-Iterative Aeroengine Model Based on Volume Effect	7130
<i>X. Kong, X. Wang, D. Tan, A. He</i>	
Designed Simulation Experiments, Part 1: Roots, Myths, and Limitations of Conventional DOE	7148
<i>B. Collins, T. Hurst, J. Ard</i>	
Designed Simulation Experiments, Part 2: DOE for the Digital Age	7155
<i>T. Hurst, C. Joseph, C. Pouchet, B. Collins</i>	
An Integrated Approach to Systems Engineering through Modeling and Simulation	7165
<i>M. O'Such, D. Armon, S. Mysko, M. Sutton</i>	
Optimal Integrated Guidance and Control Design for Line-of-Sight Based Formation Flight	7187
<i>M. Sadraey</i>	
Optimal Satellite Formation Establishment about an Oblate Planet	7201
<i>Vladimir Martinusi, Pini Gurfil</i>	
Trajectory Optimization for Spacecraft Proximity Operations with Constraints	7212
<i>Y. Ulybyshev</i>	
Lyapunov-based Spacecraft Rendezvous Maneuvers using Differential Drag	7231
<i>D. Perez, R. Bevilacqua</i>	
Phase Synchronization Control of Robotic Networks on Periodic Ellipses with Adaptive Network Topologies	7254
<i>S. Chung, I. Chang, F. Hadaegh</i>	
Swarm Keeping Strategies for Spacecraft under J_2 and Atmospheric Drag Perturbations	7273
<i>D. Morgan, S. Chung, L. Blackmore, B. Acikmese, D. Bayard, F. Hadaegh</i>	
Experimental Validation of Stereoscopic Satellite Relative State Estimation	7297
<i>S. Segal, P. Gurfil, A. Carmi</i>	
Model Predictive Control Scheme for Rotorcraft Inverse Simulation	7313
<i>G. Avanzini, D. Thomson, A. Torasso</i>	
Hybrid Control System for a Future Small Aircraft	7324
<i>Matthias Heller, Falko Schuck, Lars Peter, Florian Holzapfel</i>	
Automated Maneuvering Control of a Conventional Tactical Aircraft Enhanced with Thrust Vectoring Controls	7342
<i>O. Atesoglu, M. Ozgoren</i>	
High-Fidelity Modeling and Control of a Twin Helicopter Rotor Tailsitter	7359
<i>J. Forshaw, V. Lappas</i>	
Nonlinear Generalized Dynamic Inversion Aircraft Control	7374
<i>I. Hameduddin, A. Bajodah</i>	
Entry Guidance for the 2011 Mars Science Laboratory Mission	7386
<i>G. Mendeck, L. Craig</i>	
Rapid Simultaneous Hypersonic Aerodynamic and Trajectory Optimization Using Variational Methods	7408
<i>M. Grant, I. Clark, R. Braun</i>	
Optimal Online Path Planning for Approach and Landing Guidance	7423
<i>A. Heydari, S. Balakrishnan</i>	
Neuro-Adaptive Augmented Dynamic Inversion Based PIGC Design for Reactive Obstacle Avoidance of UAVs	7434
<i>C. Chawla, R. Padhi</i>	
Use of Gravity Gradiometry in Precision Inertial Navigation Systems	7459
<i>T. Welker, R. Huffman, M. Pachter</i>	
Amplitude-Locking Technology in the Superfluid Gyroscope	7481
<i>Mingyu Feng, Wei Zhao, Jianye Liu, Zheng Xie</i>	
Research on Multi update rate Method of Precise Satellite Attitude Determination Based on Gyro and Star-Sensor	7489
<i>G. Kang, D. Xiaojing, M. Xinyuan</i>	
Electromagnetic Orientation System for Nanosatellite Navigation	7502
<i>A. Cohen, L. Hyde, D. Levasseur, A. Miller, Z. Pirkli, P. Papadopoulos</i>	
Experimental Study on Penetration Performance for Sampling of Asteroid Mission	7513
<i>H. Fujii, Y. Yano, J. Hosada, K. Uchiyama, T. Watanabe</i>	

Stochastic Space Exploration with Microscale Spacecraft	7522
<i>Zachary Manchester, Mason Peck</i>	
Accurate Skip-entry Guidance for Low to Medium L/D Spacecrafts Return Missions Requiring High Range Capabilities.....	7528
<i>P. Vernis, F. Spreng, G. Gelly, A. Martinez Barrio</i>	
Calculating Launch Vehicle Flight Performance Reserve.....	7543
<i>J. Hanson, R. Pinson</i>	
Orion Launch Abort Vehicle Full-Envelope Autopilot Design Overview.....	7560
<i>M. McFarland, D. Rovner, K. Holt</i>	
Design of Launch Vehicle Flight Control Systems Using Ascent Vehicle Stability Analysis Tool	7572
<i>J. Jang, A. Alaniz, R. Hall, N. Bedrossian, C. Hall, M. Jackson</i>	
Verified Interval Orbit Propagation in Satellite Collision Avoidance.....	7588
<i>B. Römgens, E. Mooij, M. Naeije</i>	
Dream Chaser On-Orbit Operations: Preliminary Trajectory Design and Analysis.....	7610
<i>D. Woffinden, L. Epstein, G. Stafford, T. Mosher, J. Curry, Z. Krevor</i>	
Feasibility of Orion Crew Module Entry on Half of Available Propellant Due to Tank Isolation Fault	7630
<i>M. Moen</i>	
State Space Analysis for The Relative Spacecraft Motion in Geopotential Fields	7638
<i>Daniel Condurache, Vladimir Martinusi</i>	
Trajectory Optimization Based on Interval Analysis.....	7650
<i>E. De Weerd, E. Van Kampen, Q. Chu, J. Mulder</i>	
RLV Reentry Trajectory Optimization through Hybridization of an Improved GA and a SQP Algorithm	7668
<i>D. Zhang, Y. Liu</i>	
Distributed Logic-Based Conflict Resolution of Multiple Aircraft in Planar En-Route Flight.....	7679
<i>A. Alaeedini, H. Erzberger, W. Dunbar</i>	
High-Speed Prediction of Air Traffic for Real-Time Decision Support.....	7694
<i>M. Tandale, S. Wiraatmadja, P. Menon, J. Rios</i>	
Conflict Detection and Avoidance Based on CPDB for Free Flight	7709
<i>G. Honghao, J. Zhang, Y. Zhu</i>	
Real-time Wind Profile Estimation using Airborne Sensors	7723
<i>A. In't Veld, P. De Jong, M. Van Paassen, M. Mulder</i>	
Sensitivity of Efficient Descent Advisor (EDA) Performance to Trajectory Prediction (TP) Errors	7738
<i>Goutam Satapathy, Nikhil Nigam, Yingchuan Zhang</i>	
Certification of a Civil UAS: A Virtual Engineering Approach	7762
<i>N. Cameron, M. Webster, M. Jump, M. Fisher</i>	
A Hardware Testbed for Multi-UAV Collaborative Ground Convoy Protection in Dynamic Environments	7777
<i>P. Twu, R. Chipalkatty, J. De La Croix, T. Ramachandran, J. Shively, M. Egerstedt, A. Rahmani, R. Young</i>	
Development of a Simulation Environment for Autonomous Flight Control Algorithms	7796
<i>M. Perhinschi, H. Moncayo, J. Davis, B. Wilburn, O. Karas, M. Wathen</i>	
Formal Modeling, Design, and Verification Techniques for a Complex, Cooperative UAV Monitoring Task.....	7817
<i>L. Humphrey, Z. Basnight</i>	
F-22A Raptor GBU-39 Separation Test Results	7835
<i>G. Kummer, A. Gunnell, M. Besson, D. Javorsek II, T. Keithley</i>	
Flight Test Results Of A GPS-Based Pitot-Static Calibration Method Using Output-Error Optimization For a Light Twin-Engine Airplane	7847
<i>B. Martos, P. Kiszely, J. Foster</i>	
Investigation of a Flutter Exciter for Aircraft Flight Testing Using Unstructured Overset Grids.....	7862
<i>Xu Heyong, Zhengyin Ye</i>	
Concept of a Predictive Ship Helicopter Operational Limitations Analysis Tool.....	7870
<i>A. Hoencamp</i>	
Flight Test Maneuvers For Efficient Aerodynamic Modeling.....	7882
<i>Eugene Morelli</i>	
Model-Based Strategies for Modern Flight Test	7900
<i>F. De Almeida</i>	
Modeling Braking Friction Between an Aircraft Tire and the Runway	7912
<i>L. Jones, J. Boiffier</i>	

VOLUME 10

A Study on a Modeling and Simulation Program of an Environmental Control System with a Phase Change Heat Exchanger.....	7925
<i>Y. Yoo, H. Lee, S. Min, K. Hwang, J. Lim</i>	
Simulation of Cavitation and Pressure Surge Caused by Rapid Valve Closure. an Engineering Approach.....	7933
<i>H. Ellstrom, H. Gavel</i>	
Application of H-infinity Fault Diagnosis to ADDSAFE Benchmark: the Control Surface Jamming Case	7947
<i>A. Marcos</i>	
Nonlinear Model-Based Fault Detection for a Hydraulic Actuator.....	7958
<i>L. Van Eykeren, Q. Chu</i>	

Fault Detection and Diagnosis in Electrical Aircraft Flight Control System	7966
<i>D. Henry, A. Zolghadri, J. Cieslak, D. Efimov</i>	
Diagnosis of Actuator Faults Using LPV-gain Scheduling Techniques	7982
<i>A. Varga, S. Hecker, D. Ossmann</i>	
Geometric LPV Fault Detection Filter Design for Commercial Aircrafts	8000
<i>B. Vanek, Z. Szabo, A. Edelmayr, J. Bokor</i>	
Application of Second Order Sliding Mode Observers for Fault Reconstruction on the ADDSAFE Benchmark	8013
<i>H. Alwi, C. Edwards</i>	
A Mixed H₂ / H_∞ LPV FDD Observer for Nonlinear Aircraft	8037
<i>L. Chen, R. Patton</i>	
ARINC 653 Based Time-Critical Application for European SCARLETT Project	8054
<i>T. Rogalski, S. Samolej, A. Tomczyk</i>	
In-Flight Evaluation of Forward-Looking Integrated Symbology for 4-D Reroutable Helicopter Approach to Blind Landing	8066
<i>E. Moralez III, S. Braddom, A. Grunwald, M. Hovev-Rottem</i>	
Cable Angle Feedback Control Systems to Improve Handling Qualities for Helicopters with Slung Loads	8082
<i>C. Ivler, M. Tischler, J. Powell</i>	
Arresting a Descent: What Cues do Pilots Use to Initiate a Flare Maneuver?	8109
<i>G. Ridgway, M. Jump</i>	
Onboard Estimation of Impaired Aircraft Performance Envelope	8122
<i>P. Menon, J. Kim, P. Sengupta, S. Vaddirji, B. Yang, J. Kwan</i>	
Initial Guess Generation for Aircraft Landing Trajectory Optimization	8147
<i>E. Bakolas, Y. Zhao, P. Tsiotras</i>	
Benefits of Mid-Term Flexible Airspace Management in Presence of Weather	8163
<i>J. Jung, C. Lai, S. Zelinski</i>	
Probabilistic Airport Capacity Prediction Incorporating the Impact of Terminal Weather	8175
<i>R. Kicinger, C. Cross, T. Myers, J. Krozel, C. Mauro, D. Kierstead</i>	
Impact Analysis for Volcanic Ash Hazards	8198
<i>K. Stefanidis, V. Klimenko, J. Krozel</i>	
Using the Solution Space Diagram in Measuring the Effect of Sector Complexity During Merging Scenarios	8211
<i>S. Abdul Rahman, M. Van Paassen, M. Mulder</i>	
Re-design of an Inbound Planning Interface for Air Traffic Control	8236
<i>R. Klomp, M. Mulder, M. Van Paassen, M. Roerdink</i>	
Design and Analysis of a Flow Corridor-based Traffic Management Initiative	8263
<i>J. Chen, D. Andrisani</i>	
Human-in-the-Loop Investigation of Airspace Design	8280
<i>J. Homola, P. Lee, C. Brasil, H. Lee, M. Mainini</i>	
Simulation Environment for the Development and Testing of Immunity-Based Aircraft Failure Detection Schemes	8308
<i>H. Moncayo, M. Perhinschi, J. Davis</i>	
Upset Prevention and Recovery Training in Flight Simulators	8326
<i>S. Advani, J. Field</i>	
Determining Ground Winds for Gear-on-the-Ground Accidents Using FDR Data	8338
<i>D. Crider</i>	
Predicting the Occurrence of Incidents Based on Flight Operation Data	8350
<i>Ludwig Drees, Florian Holzapfel</i>	
Effect of G-cueing on Pilot Performance in Centrifuge-Based Simulation of Unusual Attitude Recovery	8362
<i>W. Ledeganck, E. Groen, M. Wentink</i>	
Study on Friction on Tape Tether Deployment System	8374
<i>Y. Sakaguchi, H. Fujii</i>	
Control Strategies Utilizing the Physics of Flux-Pinned Interfaces for Spacecraft	8382
<i>L. Jones, M. Peck</i>	
Flight Validation of a Multi-Degree-of-Freedom Flux-Pinning Spacecraft Model	8394
<i>L. Jones, W. Wilson, J. Gorsuch, J. Shoer, M. Peck</i>	
Comparison of Periodic System Lifting Techniques for Robust Stability Analysis of Magnetic Spacecraft Attitude Control Systems	8409
<i>J. Löhr, S. Winkler</i>	
Investigation of Active Vibration Suppression of a Flexible Satellite using Magnetic Attitude Control	8425
<i>E. Findlay, J. Forbes, H. Liu, A. De Ruiter, C. Damaren, J. Lee</i>	
Two-Axis Attitude Control of a Deputy Satellite during Out-of-Plane Guidance in a Coulomb Formation	8440
<i>Paul Iliffe, Saburo Matunaga</i>	
Experimental Study on Deployment System of Tape Tether -On Ground and Space Experiment	8452
<i>T. Yamada, H. Fujii, T. Mizuno, P. Williams</i>	
Trajectory-Shaping and Precision Guidance of a Spinning Mortar without Angle-State Feedback	8461
<i>D. Foreman, C. Tournes, Y. Shtessel</i>	
Trajectory Modulation Guidance Law for Anti-ship Missiles	8472
<i>H. Shin, J. Lee, H. Cho, A. Tsourdos</i>	
Passivity-based Robust Design of Proportional-Derivative Navigation Guidance Law	8482
<i>N. Lechevin, C. Rabbath</i>	
Near-Optimal Trajectory Shaping of Guided Projectiles with Constrained Energy Consumption	8494
<i>N. Lechevin, C. Rabbath</i>	

Maneuver Strategy of Evader Considering Detection System	8506
<i>Y. Guo, S. Wang, Y. Yao, B. Yang, P. Zhang</i>	
Guidance Scheme for Glide Range Maximization of a Hypersonic Vehicle	8520
<i>W. Yu, W. Chen</i>	
Safe Separation Modeling for Aerial Launched Weapon Systems	8535
<i>D. Moore, P. Reitmeier, B. Deerman, D. Clark</i>	
Fault/Damage Tolerant Control of a Quadrotor Helicopter UAV using Model Reference Adaptive Control and Gain-Scheduled PID	8541
<i>Iman Sadeghzadeh, Ankit Mehta, Youmin Zhang</i>	
Fault-Tolerant Adaptive Flight Control System Using Feedback Linearization	8554
<i>Toru Nambu, Kenji Uchiyama</i>	
Minimum-Time Circling Flight of a Triarm Coaxial Rotor UAV	8566
<i>M. Harada, K. Bollino</i>	
Frequency Domain System Identification for a Small, Low-Cost, Fixed-Wing UAV	8576
<i>A. Dorobantu, A. Murch, B. Mettler, G. Balas</i>	
Integrated Guidance Navigation and Control for a Fully Autonomous Indoor UAS.....	8589
<i>G. Chowdhary, D. Sobers, C. Pravitra, C. Christman, A. Wu, H. Hashimoto, C. Ong, R. Kalghatgi, E. Johnson</i>	
Towards Model-Free SLAM Using a Single Laser Range Scanner for Helicopter MAV.....	8611
<i>C. Friedman, I. Chopra, S. Potyagaylo, O. Rand, Y. Kanza</i>	
Decentralized Piecewise Linear Modeling of a Turboshaft Engine Driving a Variable Pitch Propeller.....	8631
<i>Mehrdad Pakmehr, Nathan Fitzgerald, James Paduano, Eric Feron, Alireza Behbahan</i>	
Performance Analysis of an 18d Multi-Body Coaxial Helicopter	8645
<i>R. Leitner, S. Myschik</i>	
Numerical Simulation of Rotor-Airframe Aerodynamics Using Technology of Unstructured Overset Grids.....	8657
<i>Xu Heyong, Zhengyin Ye</i>	
Tensor Flight Dynamics	8667
<i>P. Zipfel</i>	
Solar Dynamics Observatory Guidance, Navigation, and Control System Overview.....	8678
<i>W. Morgenstern, K. Bourkland, O. Hsu, K. Liu, P. Mason, J. O'Donnell, A. Russo, S. Starin, M. Vess</i>	
Investigating On-Orbit Attitude Determination Anomalies for the Solar Dynamics Observatory Mission.....	8696
<i>M. Vess, S. Starin, K. Liu</i>	
On-Orbit Solar Dynamics Observatory (SDO) Star Tracker Warm Pixel Analysis	8711
<i>D. Felikson, J. Hashmall, M. Vess, M. Ekinci</i>	
Verification of the Solar Dynamics Observatory High Gain Antenna Pointing Algorithm Using Flight Data	8725
<i>K. Bourkland, K. Liu</i>	
Solar Dynamics Observatory On-orbit Jitter Testing, Analysis, and Mitigation Plans	8740
<i>K. Liu, C. Blaurock, K. Bourkland, W. Morgenstern, P. Maghami</i>	
The Effects of Propellant Slosh Dynamics on the Solar Dynamics Observatory	8768
<i>P. Mason, S. Starin</i>	
Author Index	