

American Institute of
Aeronautics and Astronautics

AIAA Guidance, Navigation, and
Control Conference
and Exhibit
2008

August 18-21, 2008
Honolulu, Hawaii, USA

Volume 1 of 11

Printed from e-media with permission by:

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

ISBN: 978-1-60560-808-2

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

Adaptive Key Component Controllers for Evolving Systems	1
<i>S. Frost, M. Balas</i>	
Filter Design for Feedback-loop Trade-off of L_1 Adaptive Controller: A Linear Matrix Inequality Approach	12
<i>D. Li, N. Hovakimyan, C. Cao</i>	
Nonlinear Adaptive Control with Persistent Disturbances	24
<i>M. Balas, S. Harvey, E. Mehiel</i>	
L_1 Adaptive Controller for a Missile longitudinal Autopilot Design	36
<i>J. Wang, C. Cao</i>	
Adaptive Output Tracking and Disturbance Rejection with Saturation Constraints	57
<i>T. VanZwieten, M. Balas, J. VanZwieten</i>	
Modeling-Error-Driven Performance-Seeking Direct Adaptive Control	75
<i>N. Kulkarni, J. Kaneshige, K. Krishnakumar, J. Burken</i>	
Model Set Reduction with Application to Damage Adaptive Flight Control	94
<i>R. Prasanth, T. Zajic, J. Boskovic, N. Knoebel, I. Gregory</i>	
Ares I Flight Control System Overview	119
<i>C. Hall, C. Lee, M. Jackson, M. West, M. Whorton, J. Brandon, J. Compton, R. Hall, J-W. Jang, N. Bedrossian, C. Rutherford</i>	
Rapid Trajectory Optimization for the ARES I Launch Vehicle	131
<i>G. Dukeman, A. Hill</i>	
Ares-I Bending Filter Design Using A Constrained Optimization Approach	143
<i>J. Jang, R. Hall, N. Bedrossian, C. Hall</i>	
Analysis of Ares 1 Ascent Navigation Options	153
<i>L. Norris, Y. Tao, R. Hall, J. Chuang, M. Whorton</i>	
Analysis and Design of Launch Vehicle Flight Control Systems	163
<i>B. Wie, W. Du, M. Whorton</i>	
Development of a Smooth Trajectory Maneuver Method to Accommodate the Ares I Flight Control Constraints	188
<i>R. Pinson, T. Schmitt, J. Hanson</i>	
Magnetic-Only Orbit and Attitude Estimation Using the Square-Root Unscented Kalman Filter: Application to the PROBA-2 Spacecraft	200
<i>J. Côté, J. de Lafontaine</i>	
Attitude Determination of Rotating Spacecraft by Magnetometers and Rate Sensors	224
<i>S. Yoshikawa, T. Nishiyama</i>	
Inertially-Aided Vector Matching Algorithm for Attitude Determination of Spin Stabilized Satellite	237
<i>V. Bageshwar, D. Gebre-Egziabher, W. Garrard, P. Shestopole, M. Adams</i>	
Uncertainty Analysis of Hypersonic Flight Using Multi-Resolution Markov Operators	262
<i>P. Sengupta, R. Bhattacharyya</i>	
Novel Quaternion Stochastic Modelling and Filtering	274
<i>D. Choukroun</i>	
Dubins Trajectory Tracking using Commercial Off-the-Shelf Autopilots	284
<i>A. Bhatia, M. Graziano, S. Karaman</i>	

Subspace Optimal Control and Motion Camouflage	298
<i>Y. Xu</i>	
Modular Tactical Autonomous Guidance Using Evolution-based Algorithms	315
<i>R. Wise, A. Pongpunwattana, R. Rysdyk</i>	
Hybrid Hierarchical Motion Planning	325
<i>S. Chakravorty, R. Saha</i>	
Robust Path Planning and Feedback Design Under Stochastic Uncertainty	336
<i>L. Blackmore</i>	
Autonomous Trajectory Planning Using Real-Time Information Updates	348
<i>M. Hurni, P. Sekhavat, I. Ross</i>	
Mission Aware Flight Planning for Unmanned Aerial Systems	367
<i>E. Santamaria, P. Royo, C. Barrado, E. Pastor, J. Lopez, X. Prats</i>	
Information-Theoretic Tracking Control Based on Particle Filter Estimate	388
<i>A. Ryan</i>	
An Overview of the Cooperative Operations in Urban TERRain (COUNTER) Program	403
<i>N. Jodeh, M. Mears, D. Gross</i>	
Vigilant Spirit Control Station (VSCS): The Face of COUNTER	412
<i>G. Feitshans, A. Rowe, J. Davis, M. Holland, L. Berger</i>	
Autonomous Decision Making with Uncertainty for an Urban Intelligence, Surveillance and Reconnaissance (ISR) Scenario	424
<i>R. Holsapple, J. Baker</i>	
Estimating MAV's Heading and the Wind Speed and Direction Using GPS, Inertial, and Air Speed Measurements	438
<i>M. Pachter, N. Ceccarelli, P. Chandler</i>	
COUNTER Cooperative Control Algorithms: Challenges and Lessons Learned	463
<i>S. Rasmussen, M. Holland, A. Bry</i>	
COUNTER Flight Demonstrations	474
<i>D. Gross, J. Hill</i>	
Human-Automation Coordination in Multi-UAV Control	483
<i>T. Hughes</i>	
Assignment of Heterogeneous Tasks to a Set of Heterogeneous Unmanned Aerial Vehicles	490
<i>S. Rasmussen, D. Kingston</i>	
Genetic Algorithm for Cooperative UAV Task Assignment and Path Optimization	501
<i>E. Edison, T. Shima</i>	
Coordinated Rendezvous of Unmanned Air Vehicles: A Sliding Mode Approach	515
<i>N. Harl</i>	
Co-Operative Unmanned Aerial Vehicle Mapping of Complex Obstacles Using 2-D Splinegon	540
<i>S. Lazarus, A. Tsourdos, R. Zbikowski, B. White, C. Rabbath</i>	
Experimental Evaluation of Decentralized Swarm Control Laws	568
<i>L. Pollini, M. Niccolini, M. Innocenti</i>	
Experimental Demonstration of Adaptive MDP-Based Planning with Model Uncertainty	584
<i>B. Bethke, L. Bertuccelli, J. How</i>	
Sensitivity of National Airspace System Performance to Disturbances: Modeling, Identification from Data, and Use in Planning	606
<i>Y. Wan, S. Roy</i>	
A Generalized Random Adaptive Search Procedure for Solving Airspace Congestion Problems	624
<i>C. Taylor, C. Wanke</i>	

Sequential Congestion Management with Weather Forecast Uncertainty	644
<i>C. Wanke, D. Greenbaum</i>	
Algorithms for Uncertainty Analysis of an Air Traffic Management System	663
<i>J. Li, I. Hwang</i>	
NextGen Collaborative Air Traffic Management Solutions	674
<i>P. Jha, A. Suchkov, I. Crook, Z. Tibitche, J. Lizzi, R. Subbu</i>	
Initial Study of Controller/Automation Integration for NextGen Separation Assurance	686
<i>T. Prevot, J. Homola, J. Mercer</i>	
Converging on a Precision Hover Control Strategy for the F-35B STOVL Aircraft.....	708
<i>J. Denham, J. Paines</i>	
Investigation of Flight Dynamics and Automatic Controls for Hovering Micro Air Vehicles	721
<i>D. Poinot, C. Bérard, R. Krashanitsa, S. Shkarayev</i>	
Control Law Modification According to Flight Test of Small Scaled Tilt Rotor UAV	739
<i>Y. Kang, B. Park, C. Yoo, S. Koo</i>	

Volume 2

Active Control of Vortex-Induced Vibrations Using a Continuous Sliding Mode Control	747
<i>N. Hussein, A. Baz</i>	
Integrated Methods for Verification and Validation of GNC Systems.....	777
<i>D. Reid</i>	
Run-Time Verification and Validation for Safety-Critical Flight Control Systems.....	792
<i>J. Schierman, D. Ward, A. Aiello, J. Berryman</i>	
Figures of Merit for Control Verification	813
<i>L. Crespo, S. Kenny, D. Giesy</i>	
A Verification-Driven Approach to Control Analysis and Tuning.....	833
<i>L. Crespo, S. Kenny, D. Giesy</i>	
Planetary Landing Dynamic Test Facility: Design and Applications.....	851
<i>J. de Lafontaine, D. Neveu, J. Hamel</i>	
Estimation of Spacecraft Inertia Parameters	867
<i>J. Thienel, R. Luquette, R. Sanner</i>	
Zero Dynamics Analysis for Spacecraft with Fuel Slosh	875
<i>H. Shageer, G. Tao</i>	
Stability Criteria for the Spinning Spacecraft with Large Flexible Membrane	893
<i>Y. Tsuda</i>	
Solution Strategies for an Extension of Wahba's Problem to Spinning Spacecraft	902
<i>J. Hinks, M. Psiaki</i>	
Adaptive Sliding Mode 3-D Trajectory Control of F/A-18 Model Via SDU Decomposition	926
<i>K. Lee, S. Ramasamy, S. Singh</i>	
Platform Precision Autopilot Overview and Flight Test Results	948
<i>J. Lee, B. Strovers, V. Lin, R. Beck</i>	
Waypoint Navigation Using Constrained Infinite Horizon Model Predictive Control	969
<i>F. de Almeida</i>	
Comparison of Branching Strategies for Path-Planning with Avoidance Using Nonlinear Branch-and-Bound.....	983
<i>A. Eele, A. Richards</i>	
Modelling and Suboptimal Trajectory Generation for a Symmetric Flapping Wing Vehicle	993
<i>J. Jackson, R. Bhattacharya, T. Strganac</i>	

Design of a Track-Generation Algorithm for the RedBull Air Race World Series	1008
<i>M. Weingartner, F. Holzapfel, G. Sachs</i>	
Stability Augmentation for Crosswind Landings Using Dynamic Cell Structures	1030
<i>A. Sivakumar, T. Phang, C. Tan</i>	
6-DOF Synchronization Control for Multiple Spacecraft Formation Flying	1043
<i>J. Shan</i>	
A Bang-Bang Control Approach to Maneuver Spacecraft in a Formation with Differential Drag	1058
<i>B. Shankar Kumar, A. Ng</i>	
Dynamics and Control of Satellite Formation Flying Based on Relative Orbit Elements	1069
<i>Q. He, C. Han</i>	
Point Targeting of Multi-Satellites via a Virtual Structure Formation Flight Scheme	1085
<i>C. Ahn, Y. Kim</i>	
Attitude and Phase Synchronization of Formation Flying Spacecraft: Lagrangian Approach	1107
<i>S. Chung, U. Ahsun, J. Slotine</i>	
New Worlds Observer Formation Control Design Based on the Dynamics of Relative Motion	1127
<i>R. Luquette</i>	
Stationkeeping of a Flux-Pinned Satellite Network	1137
<i>M. Norman</i>	
Convergence Properties of Autocorrelation-Based Generalized Multiple-Model Adaptive Estimation	1149
<i>B. Alsuwaidan, J. Crassidis, Y. Cheng</i>	
Computational Nonlinear Stochastic Control Based on the Fokker-Planck-Kolmogorov Equation	1169
<i>M. Kumar, S. Chakravorty, J. Junkins</i>	
Stochastic Disturbance Accommodating Control Using a Kalman Estimator	1184
<i>J. George, P. Singla, J. Crassidis</i>	
Observer Markov Parameter Identification Theory for Time Varying Eigensystem Realization Algorithm	1206
<i>M. Majji, J. Junkins</i>	
Uncertainty Evaluation Through Mapping Identification in Intensive Dynamic Simulations	1218
<i>Y. Wan, S. Roy, B. Lesieutre</i>	
Model Reduction of Input-Output Dynamical Systems by Proper Orthogonal Decomposition	1232
<i>A. Or, J. Speyer, H. Carlson</i>	
New Risk-Averse Control Paradigm for Stochastic Two-Time-Scale Systems and Multi-Resolution Performance Robustness	1242
<i>K. Pham, L. Robertson</i>	
Robust Multiple Model Filtering with Uncertain Transition Models	1262
<i>L. Bertuccelli</i>	
Control Laws for a Dual-Spin Stabilized Platform	1277
<i>K. Lim, D. Moerder</i>	
Position Tracking Control for a Simulated Miniature Helicopter	1296
<i>R. Hopkins, Y. Xu</i>	
A QFT Based Control Design for the Wraith UAV	1313
<i>M. Frye, R. Colgren</i>	
Dynamic Gain Scheduled Control of an F16 Model	1342
<i>N. Hammoudi, M. Lowenberg</i>	

Nonlinear Robust Controller Design for High-Alpha Maneuvering Enhancement of a Fighter Aircraft with Aerodynamic and Thrust Vectoring Controls	1358
<i>Ö. Atesoglu, M. Özgören</i>	
Multidisciplinary Control Law Design and Flight Test Demonstration on a Business Jet.....	1383
<i>D. Gangsaas, J. Hodgkinson, C. Harden, N. Saeed, K. Chen</i>	
Transition Point Displacement Control on a Wing Equipped with Actuators	1408
<i>M. Labib, A. Popov, J. Fays, R. Botez</i>	
Flight Control Design Using Hierarchical Dynamic Inversion and Quasi-steady States.....	1435
<i>K. Peng, K. Lum, E. Poh, D. Li</i>	
Terminal and Boost Phase Intercept of Ballistic Missile Defense	1454
<i>R. Chen, J. Speyer, D. Lianos</i>	
Robust Minimax Strategies for Missile Guidance Design	1467
<i>E. Trottemant, C. Scherer, M. Weiss</i>	
Exo-Atmospheric Guidance of an Accelerating Interceptor Missile	1484
<i>T. Shima, O. Golan</i>	
Robust Analysis of Guidance Performance Against Weaving Targets	1496
<i>M. Weiss</i>	

Volume 3

A Guidance Law with a Switching Logic for Maintaining Seeker's Lock-on for Stationary Targets.....	1508
<i>D. Sang, C. Ryoo, M. Tahk</i>	
Adaptive Methods for Flight Control Diagnostics.....	1518
<i>J. Burkholder, G. Tao, M. Niestroy</i>	
Hybrid Robust Control and Reinforcement Learning for Optimal Upset Recovery	1539
<i>B. Dutoi, N. Richards, N. Gandhi, D. Ward, J. Leonard</i>	
Fast Thrust Response for Improved Flight/Engine Control under Emergency Conditions.....	1561
<i>J. Litt, T. Guo</i>	
An Integrated Approach to Damage Accommodation in Flight Control	1571
<i>J. Boskovic, N. Knoebel, R. Mehra, I. Gregory</i>	
An Integrated Aircraft Health Assessment and Fault Contingency Management System for Aircraft.....	1596
<i>M. Roemer, L. Tang, S. Bharadwaj, Celeste Belcastro</i>	
Aircraft Loss-of-Control Accident Prevention: Switching Control of the GTM Aircraft with Elevator Jam Failures	1605
<i>B. Chang, H. Kwatny, Christine Belcastro, Celeste Belcastro</i>	
Flight Controls and Performance Challenges for MAVs in Complex Environments	1620
<i>M. Ol, G. Parker, G. Abate, J. Evers</i>	
Flow Fields in Complex Terrain and Their Challenges to Micro Flight	1641
<i>S. Watkins, B. Loxton, M. Abdulrahim, C. Bil, J. Milbank</i>	
Autonomous Gust Insensitive Aircraft.....	1657
<i>W. Pisano, D. Lawrence</i>	
Biologically Inspired Flight Techniques for Small and Micro Unmanned Aerial Vehicles	1674
<i>J. Langelan</i>	
Micro-Aerial Vehicle Flight in Turbulent Environments: Use of an Indoor Flight Facility for Rapid Design and Evaluation.....	1687
<i>S. Bieniawski, D. Halaas, J. Vian</i>	

Unmanned Aircraft Guidance for Penetration of Pre-Tornadic Storms	1698
<i>J. Elston, E. Frew</i>	
Adaptive Gust Alleviation for a Tilt-Rotor UAV Operating in Turbulent Airwakes	1712
<i>J. Horn, J. Cooper, J. Schierman, S. Sparbanie</i>	
An Optimal Strategy for Persistent Contrail Avoidance	1728
<i>S. Campbell, N. Neogi, M. Bragg</i>	
Air Traffic Management complexity maps induced by degradation of Communication, Navigation and Surveillance.....	1744
<i>M. Gariel, E. Feron, J. Clarke</i>	
Pilot Support for Curved Decelerating Approaches in Actual Wind Conditions.....	1756
<i>A. in 't Veld, M. Mulder, R. Groenouwe, M. van Paassen</i>	
Network Model to Address Capacity/Demand Imbalances in the National Airspace System.....	1774
<i>T. Myers, D. Kierstead</i>	
Parallelization of the Traffic Flow Management Problem	1799
<i>J. Rios, K. Ross</i>	
Characterizing Intent Maneuvers from Operational Data: Step Towards Trajectory Prediction Uncertainty Estimation	1809
<i>J. Garcia-Chico, R. Vivona, K. Cate</i>	
UAV Conflict Detection and Resolution for Static and Dynamic Obstacles	1827
<i>H. Shin, A. Tsourdos, B. White, M. Shanmugavel, M. Tahk</i>	
Dynamic Modeling and Flight Control Simulation of a Large Flexible Launch Vehicle.....	1848
<i>W. Du, B. Wie, M. Whorton</i>	
Evaluation of Ares-I Control System Robustness to Uncertain Aerodynamics and Flex Dynamics.....	1873
<i>J. Jang, C. Van Tassell, N. Bedrossian, C. Hall</i>	
Learning About Ares I from Monte Carlo Simulation	1886
<i>J. Hanson, C. Hall</i>	
Simulation-Based Fault Analysis Methodology for Aerospace Vehicles	1905
<i>A. Marcos, G. De Zaiacomo, L. Peñin</i>	
Similarity Metrics for Closed Loop Dynamic Systems	1920
<i>M. Whorton, L. Yang, R. Hall</i>	
Preliminary Analysis of Space Transportation Systems with Spaceports Around Libration Points.....	1936
<i>M. Nakamiya, D. Scheeres, H. Yamakawa, M. Yoshikawa</i>	
Multiple UAV Deconfliction via Navigation Functions.....	1947
<i>A. Rahmani, K. Kosuge, T. Tsukamaki</i>	
Obstacle Avoidance and Cloud Detection for Unmanned Aerial Systems	1960
<i>D. Schrage, A. Yezzi, B. Ganapathy, S. Mishra</i>	
Curvature-Velocity-Orientation Method for UAV Collision Avoidance.....	1972
<i>Y. Gu, G. Sagoo, B. Seanor, G. Campa, M. Napolitano</i>	
A Bayesian Approach to Aircraft Encounter Modeling	1982
<i>M. Kochenderfer, J. Kuchar, J. Griffith, L. Espindle</i>	
Hazard Alerting Using Line-of-Sight Rate.....	2003
<i>M. Kochenderfer, J. Griffith, J. Kuchar</i>	
Stability Analysis of a Null Space Behavioral Controller for Obstacle Avoidance	2012
<i>M. Cellini, L. Pollini, M. Innocenti</i>	
Computing Short-Time Aircraft Maneuvers Using Direct Methods.....	2025
<i>O. Yakimenko, Y. Xu, G. Basset</i>	

Minimum Fuel Circling Flight for Unmanned Aerial Vehicles in a Constant Wind	2048
<i>M. Harada, K. Bollino</i>	
A Novel Probabilistic Approach in Determination of Landing Site for Distressed Aircraft	2056
<i>R. Rapetti, N. Sarigul-Klijn, A. Jordan, I. Lopez, M. Sarigul-Klijn</i>	
Flight Dispatching for Unmanned Aerial Vehicles.....	2069
<i>X. Prats, E. Pastor, P. Royo, J. Lopez</i>	
Optimal Path Planning for Skid-to-Turn Unmanned Aerial Vehicle.....	2090
<i>N. Yokoyama, Y. Ochi</i>	
Control of Many Coupled Oscillators and Application to Segmented-Mirror Telescopes.....	2107
<i>D. MacMynowski, P. Thompson, M. Sirota</i>	
Optical Beam Control Testbeds	2115
<i>B. Agrawal, T. Martinez</i>	
An Analysis of Smoothing Algorithms on Signal Jitter in Optical Tracking Data.....	2131
<i>S. Small, K. Nyarko, C. Scott</i>	
Uni-Directional Motion Stability of Spatial Resolution Coverage Discs	2140
<i>H. Altwaijry, D. Hyland</i>	
An Optical Helmet-Tracking System Using EKF based PF	2151
<i>Y. Lee, Y. Kim, C. Park</i>	
Precise Position Control of a Gimballed Camera System.....	2161
<i>B. Ozkan, E. Yildiz, B. Donmez</i>	
Predictor-Tunnel Display and Direct Force Control for Improving Flight Path Control.....	2179
<i>G. Sachs, F. Holzapfel</i>	
Low-Cost On-Board Guidance Aid for Landing on Small Airports in Low Visibility and Adverse Weather	2193
<i>G. Sachs, F. Schuck, F. Holzapfel</i>	
Genetic Algorithms for Shortest Path Routing of Autonomous Gliders	2206
<i>N. Kahveci, P. Ioannou</i>	
Multi-Pursuer Evasion.....	2216
<i>A. Sun, H. Liu</i>	
Optimal Trajectory Determination for Increased Relative Navigation Observability of Air Vehicles	2225
<i>A. Fosbury, J. Crassidis</i>	

Volume 4

ASTRO 15 Star Tracker Flight Experience and Further Improvements Towards the ASTRO APS Star Tracker	2244
<i>U. Schmidt, C. Elstner, K. Michel</i>	
Development and Testing of the StarCam SG100: A Stellar Gyroscope.....	2252
<i>A. Katake, J. Ochoa, J. Zbranek, B. Day, C. Bruccoleri, D. Goodsell</i>	
A Magnetometer Compensation Scheme for Countering Thermally Induced Field Disturbances on the GOES-13 Spacecraft	2264
<i>S. Miller</i>	
Efficient Precision Pointing of Multiple Spacecraft Payloads: The Design and Flight Experience.....	2278
<i>R. Li, Y. Wu, S. Mansour</i>	
Analytical and Simulation-Based Control Law Robustness Validation Using CAESAR.....	2287
<i>A. Bateman, M. Aiello, D. Ward, G. Balas, J. Cooper</i>	

Robustness Analysis and Reliable Flight Regime Estimation of an Integrated Resilient Control System for a Transport Aircraft	2299
<i>J. Shin, Christine. Belcastro</i>	
Nonlinear Modeling and Analysis Software for Control Upset Prevention and Recovery of Aircraft	2318
<i>G. Bajpai, A. Beytin, M. Yasar, H. Kwatny, B-C. Chang, S. Thomas</i>	
Verifiable Adaptive Control: UCAV and Aerial Refueling	2328
<i>K. Wise, E. Lavretsky, N. Hovakimyan</i>	
Stability Margins for Adaptive Controllers in the Presence of Time-Delay	2354
<i>A. Annaswamy, J. Jang, E. Lavretsky</i>	
NASA Langley's AirSTAR Testbed: A Subscale Flight Test Capability for Flight Dynamics and Control System Experiments	2366
<i>T. Jordan, R. Bailey</i>	
GPS-Based Relative Navigation During the Separation Sequence of the PRISMA Formation	2380
<i>S. D'Amico, O. Montenbruck, R. Larsson, C. Chasset</i>	
PRISMA: An In-Orbit Test Bed for GNC Experiments	2394
<i>P. Bodin, R. Larsson, F. Nilsson, C. Chasset, R. Noteborn, M. Nylund</i>	
Characterization of a Radio Frequency Space Environment Path Emulator for Evaluating Spacecraft Ranging Hardware	2410
<i>J. Mitchell, P. Baldwin, B. Barbee, R. Kurichh, R. Luquette</i>	
Ground and Space Testing of Multiple Spacecraft Control During Close-Proximity Operations	2426
<i>S. McCamish, M. Romano, S. Nolet, C. Edwards, D. Miller</i>	
Flight-Like Ground Demonstrations of Precision Maneuvers for Spacecraft Formations	2444
<i>D. Scharf, F. Hadaegh, J. Keim, A. Morfopoulos, A. Ahmed, Y. Brenman</i>	
Distributed Estimate Fusion Filter for Large Spacecraft Formations	2461
<i>T. McLoughlin, M. Campbell</i>	
Vision-Based UAV Navigation	2478
<i>J. Sasiadek, M. Walker</i>	
High Accuracy Ground Target Geo-location Using Autonomous Micro Aerial Vehicle Platforms	2490
<i>G. Conte, M. Hempel, P. Rudol, D. Lundstrom, S. Duranti, M. Wzorek, P. Doherty</i>	
Vision Based Hovering and Landing System for a VTOL-MAV with Geo-Localization Capabilities	2504
<i>N. Frietsch, O. Meister, C. Schlaile, J. Seibold, G. Trommer</i>	
MVCSLAM: Mono-Vision Corner SLAM for Autonomous Micro-Helicopters in GPS Denied Environments	2520
<i>K. Celik, S. Chung, A. Somani</i>	
Network Centric Multiple Manned/Unmanned Systems (UMS) Navigation and Control Coordination	2533
<i>N. Coleman, K. Lam, K. Patel, G. Roehrich, C. Lin</i>	
Calculation of Bounding Sets for Neural Network Based Adaptive Control Systems	2548
<i>G. Campa, M. Mammarella, B. Cukic, Y. Gu, M. Napolitano, E. Fuller</i>	
An Adaptive Attitude Control Formulation Under Angular Velocity Constraints	2572
<i>P. Singla, T. Singh</i>	
Dynamic Neural Network-Based Robust Backstepping Control approach for Quadrotors	2584
<i>A. Das, F. Lewis, K. Subbarao</i>	
Theory and Flight Test Validation of Long Term Learning Adaptive Flight Controller	2601
<i>G. Chowdhary, E. Johnson</i>	

Adaptive Output Feedback Control Applied to the Rigid Body Equations of Motion	2629
<i>R. Patel, E. Mehiel</i>	
Unfalsified Adaptive Control: The Benefit of Bandpass Filters.....	2646
<i>M. Chang, M. Safonov</i>	
Adaptive Control Scheme for Linear Uncertain Switched Systems	2659
<i>Y. Hou, C. Dong, Q. Wang</i>	
Robust Attitude Acquisition for Microsatellite via Magnetic Torquers and Moment Bias Flywheel	2671
<i>W. Jing, W. Chen</i>	
A Comparison of Adaptive Nonlinear Control Designs for an Over-Actuated Fighter Aircraft Model.....	2683
<i>E. van Oort, L. Sonneveldt, Q. Chu, J. Mulder</i>	
Mixed H_2/H_∞ Scheduling Control Scheme for a Two Degree-of-Freedom Aeroelastic System Under Varying Airspeed and Gust Conditions.....	2702
<i>Z. Prime, B. Cazzolato, C. Doolan</i>	
Nonlinear Adaptive Trajectory Control Applied to an F-16 Model	2718
<i>L. Sonneveldt, E. van Oort, Q. Chu, J. Mulder</i>	
MPC Supervisory Flight Controller: A Case Study to Flight EL AL 1862.....	2739
<i>A. Hennig, G. Balas</i>	
Comparison of Autonomous Aerial Refueling Controllers Using Reduced Order Models	2756
<i>O. Murillo, P. Lu</i>	
Dynamic Wind Tunnel Rig Implementation of Nonlinear Dynamic Inversion-Based Anti-Windup Scheme.....	2775
<i>P. Menon, G. Herrmann, M. Turner</i>	
Adaptive Dynamic Inversion for Asymptotic Tracking of an Aircraft Reference Model.....	2789
<i>W. MacKunis, M. Kaiser, P. Patre, W. Dixon</i>	
Modeling and Control of Scramjet-Powered Hypersonic Vehicles: Challenges, Trends, and Tradeoffs	2800
<i>A. Rodriguez, J. Dickeson, O. Cifdaloz, A. Kelkar, J. Vogel, D. Soloway</i>	
Heterogeneous Cooperative Control of Multiple UAVs with Collaborative Assignment and Reactive Motion Planning	2840
<i>J. Redding, J. Boskovic, R. Mehra, C. Rui</i>	
A Reactive/Deliberative Tactical Planner Using Genetic Algorithms	2864
<i>S. Thrasher, C. Dever</i>	
Air Combat Strategy Using Approximate Dynamic Programming.....	2884
<i>J. McGrew, L. Bush, J. How, N. Roy, B. Williams</i>	
Cursor-on-Target Control for Semi-autonomous UAS	2904
<i>J. Crouse, P. Blue, R. Cobb, M. Mears</i>	
How Do we Certify for the Unexpected?	2917
<i>J. Rushby</i>	
Formal Verification and Automated Testing for Diagnostic and Monitoring Systems	2924
<i>B. Dutertre, J. Rushby, A. Tiwari, C. Munoz, R. Siminiceanu</i>	
Automating Component-Based System Assembly.....	2933
<i>P. Manolios</i>	
Towards a Metric for the Assessment of Safety Critical Control Systems.....	2937
<i>O. Gonzalez, J. Chavez-Fuentes, W. Gray</i>	
Cassini Attitude Control Flight Software: From Development to In-Flight Operation.....	2947
<i>J. Brown</i>	

Cassini's Maneuver Automation Software (MAS) Process: How to Successfully Command 200 Navigation Maneuvers	2978
<i>G. Yang, D. Mohr, C. Kirby</i>	

Volume 5

Cassini Attitude Control Operations: Flight Rules and How They are Enforced	2992
<i>T. Burk, D. Bates</i>	
Cassini Attitude Control Fault Protection: Launch to End of Prime Mission Performance.....	3006
<i>P. Meakin</i>	
Pointing Stability Performance of the Cassini Spacecraft.....	3018
<i>E. Burrough, A. Lee</i>	
Attitude Controller for the Atmospheric Entry of the Mars Science Laboratory.....	3042
<i>P. Brugarolas, A. San Martin, E. Wong</i>	
Analysis of Hypersonic Flight Dynamics with Probabilistic Uncertainty in System Parameters	3063
<i>A. Prabhakar, R. Bhattacharya</i>	
Robust Control of Lunar Spacecraft Powered Descent Using a Second Order Sliding Mode Technique.....	3076
<i>J. Orr, Y. Shtessel</i>	
Robust Guidance via a Predictor-Corrector Algorithm with Drag Tracking for Aero- Gravity Assist Maneuvers	3084
<i>J. Casoliva, D. Lyons, A. Wolf, K. Mease</i>	
Nonlinear Dynamic Inversion-Based Guidance and Control for a Pinpoint Mars Entry	3102
<i>T. Hormigo, J. Araújo, F. Câmara</i>	
Real-Time Landing Point Redesignation (LPR) Algorithm	3116
<i>B. Cohanin, B. Collins</i>	
Apollo-Derived Terminal Control for Bank-Modulated Mars Entries with Altitude Maximization.....	3128
<i>E. Garcia-Llama</i>	
Alleviating Airspace Restriction Through Strategic Control.....	3146
<i>A. Mukherjee, S. Grabbe, B. Sridhar</i>	
A Plug and Play Framework for Automated Air Traffic Control	3157
<i>K. Roy, H. Huang, C. Tomlin</i>	
Sequential Traffic Flow Optimization with Tactical Flight Control Heuristics	3172
<i>S. Grabbe, B. Sridhar, A. Mukherjee</i>	
Flexible, Performance-Based Route Planning for Super-Dense Operations.....	3189
<i>J. Prete, J. Krozel, J. Mitchell, J. Kim, J. Zou</i>	
Analysis of Environmental Impact of Eliminating Arrival Hold Short Operations for Runway Crossings at Dallas/Ft. Worth Airport	3203
<i>G. Monroe, L. Tobias, Y. Jung</i>	
Optimization of Taxiway Routing and Runway Scheduling	3214
<i>G. Keith, A. Richards, S. Sharma</i>	
Rendezvous Maneuvers of Multiple Spacecraft Using Differential Drag Under J2 Perturbation	3225
<i>R. Bevilacqua, M. Romano</i>	
Large Time Scale Optimal Control of Electrodynamic Tether Satellites.....	3249
<i>R. Stevens, W. Wiesel</i>	

Trajectory Control for General Solar Sails	3273
<i>L. Rios-Reyes, D. Scheeres</i>	
ARD-Like Gain Scheduled Control for Re-Entry Vehicle	3287
<i>M. Ganet-Schoeller, H. Charbonnel, B. Cavrois</i>	
Handling Qualities Evaluation for Spacecraft Docking in Low Earth Orbit.....	3305
<i>E. Mueller, K. Bilimoria, C. Frost</i>	
A Faceted Shape Model Approach to Altimetry and Velocimetry for Spacecraft Exploration of Irregularly Shaped Bodies	3319
<i>D. Bayard, P. Brugarolas, S. Broschart</i>	
On Lunar On-Orbit Vision-Based Navigation: Terrain Mapping, Feature Tracking Driven EKF	3339
<i>L. Singh, S. Lim</i>	
Optimal Impulsive Maneuvering Within a Confined Hover Region	3357
<i>J. Williams, E. Lightsey</i>	
A Dynamic Path Generation Method for a UAV Swarm in the Urban Environment	3369
<i>D. Shim, S. Sastry</i>	
Multiple UAV Task Allocation Using Particle Swarm Optimization	3376
<i>P. Sujit, J. George, R. Beard</i>	
Vehicle Routing with Linear Temporal Logic Specifications: Applications to Multi-UAV Mission Planning	3385
<i>S. Karaman, E. Frazzoli</i>	
Consensus-Based Auction Approaches for Decentralized Task Assignment.....	3409
<i>L. Brunet, H. Choi, J. How</i>	
Treecoding for Scalable Belief Exchange in Autonomous Vehicle Control Systems.....	3433
<i>J. Emhoff, J. Moore</i>	
On Efficient Cooperative Strategies between UAVs and Humans in a Dynamic Environment.....	3448
<i>K. Savla, T. Temple, E. Frazzoli, C. Nehme</i>	
Guidance and Control System Design for Chase UAV	3464
<i>K. Enomoto, T. Yamasaki, H. Takano, Y. Baba</i>	
Flight Control Law Design with Hierarchy-Structured Dynamic Inversion Approach	3477
<i>J. Kawaguchi, Y. Miyazawa, T. Ninomiya</i>	
Block Backstepping, NDI and Related Cascade Designs for Efficient Development of Nonlinear Flight Control Laws	3495
<i>J. Thunberg, J. Robinson</i>	
Adaptive Control of Hypersonic Vehicles in the Presence of Thrust and Actuator Uncertainties.....	3519
<i>T. Gibson, A. Annaswamy</i>	
Experimental Trapped Vorticity Flight Control Using an Augmenting Error Minimization Adaptive Law.....	3535
<i>J. Muse, A. Kutay, A. Calise</i>	
Autoland Strategies for a Fixed Wing UAV in Adverse Atmospheric Conditions.....	3552
<i>I. Yavrucuk, V. Kargin</i>	
Input Shaping for Helicopter Slung Load Swing Reduction	3580
<i>M. Bisgaard, A. la Cour-Harbo, J. Bendtsen</i>	
Modelling Continuously Morphing Aircraft for Flight Control	3592
<i>N. Ameri, M. Lowenberg, M. Friswell, E. Livne</i>	
Ground Assisted Conflict Resolution in Self-Separation Airspace.....	3615
<i>G. Chaloulos, G. Roussos, J. Lygeros, Kostas J. Kyriakopoulos</i>	

Design and Evaluation of a Vertical Separation Assistance Display	3627
<i>F. Heylen, S. van Dam, M. Mulder, M. van Paassen</i>	
Hierarchical, Hybrid Framework for Collision Avoidance Algorithms in the National Airspace.....	3650
<i>M. Vitus, C. Tomlin</i>	
Impact of Automatic Dependent Surveillance-Broadcast (ADS-B) on Traffic Alert and Collision Avoidance System (TCAS) Performance	3663
<i>F. Romli, J. King, L. Li, J. Clarke</i>	
Study of Capacity and Conflict Resolution in a Hexagonal Airspace Sector.....	3674
<i>E. McClain, G. Nagle, P. O'Leary, J. Clarke</i>	
Tactical Separation Algorithms and Their Interaction with Conflict Avoidance Systems.....	3682
<i>H. Tang, D. Denery, H. Erzberger, R. Paielli</i>	
A Multiple-Derivative and Multiple-Delay Paradigm for Decentralized Controller Design: Introduction Using the Canonical Double-Integrator Network.....	3700
<i>Y. Wan, S. Roy, A. Saberi, A. Stoorvogel</i>	
Analytical Solutions for Minimum-Time Neighboring Optimal Aircraft Guidance in Winds.....	3718
<i>M. Jardin</i>	
Stability Analysis of Periodic Motion of Electrodynamics Tether System in Elliptic Orbit	3729
<i>H. Kojima, T. Sugimoto</i>	

Volume 6

Almost Global Robust Attitude Tracking Control of Spacecraft in Gravity.....	3748
<i>A. Sanyal, N. Chaturvedi</i>	
Sequential Multiresolution Trajectory Optimization for Moving Targets	3758
<i>S. Jain, P. Tsiotras</i>	
Optimal Guidance of a Relay MAV for ISR Support Beyond Line-of-Sight.....	3777
<i>J. Hansen, M. Pachter, D. Jacques, P. Blue</i>	
Real-Time Path Planning for Time-Optimal Exploration.....	3799
<i>A. Klesh, A. Girard, P. Kabamba</i>	
Dynamic Flight Envelope Assessment and Prediction	3812
<i>J. Urnes, E. Reichenbach, T. Smith</i>	
Experimental Validation of Metrics-Driven Enhanced-Safety (ME) Adaptive Control.....	3822
<i>J. Neidhoefer, N. Kulkarni, K. Al-Ali</i>	
Flight Results of the NF-15B Intelligent Flight Control System (IFCS) Aircraft with Adaptation to a Longitudinally Destabilized Plant	3845
<i>J. Bosworth</i>	
Enhancements to a Neural Adaptive Flight Control System for a Modified F-15 Aircraft.....	3863
<i>J. Kaneshige, J. Burken</i>	
Flight Validation of Metrics Driven L_1 Adaptive Control	3877
<i>V. Dobrokhodov, I. Kitsios, I. Kaminer, K. Jones, E. Xargay, N. Hovakimyan</i>	
Closing the Certification Gaps in Adaptive Flight Control Software.....	3899
<i>S. Jacklin</i>	
In Flight Validation of Adaptive Flight Control Methods.....	3913
<i>E. Johnson, A. Calise, H. De Blauwe</i>	
A Flight Control System Architecture for the NASA AirSTAR Flight Test Infrastructure	3927
<i>A. Murch</i>	
Hybrid Navigation System for the SHEFEX-2 Mission.....	3935
<i>S. Theil, M. Schlotterer, M. Conradt, M. Hallmann, M. Markgraf, I. Vanschoenbeek</i>	

SiREUS: Status of the European MEMS Rate Sensor	3948
<i>R. Durrant, S. Dussy, H. Crowle</i>	
Mini and Micro Sensor Systems: Where Small Does Not Mean Immature	3961
<i>K. Boom, J. Leijens</i>	
An Innovative Sensor System for Collision Avoidance	3972
<i>D. Accardo, A. Moccia, G. Fasano, A. Rispoli</i>	
An Advanced Air Data System Architecture for Space Re-Entry Applications Based on Sensor Fusion Algorithms	3988
<i>F. Nebula, R. Palumbo, G. Morani, F. Corraro</i>	
Course Correction Fuze Concept Analysis for In-Service 155 mm Spin-Stabilized Gunnery Projectiles	4000
<i>E. Gagnon, M. Lauzon</i>	
Active Nutation and Precession Control for Exoatmospheric Spinning Ballistic Missiles	4020
<i>R. Elias, J. Vega-Navarez</i>	
Robust Stability Analysis of Adaptive Missile Autopilots	4039
<i>K. Wise</i>	
Gain Scheduling Control Design for a Pitch-Axis Missile Autopilot	4057
<i>D. Saussié, L. Saydy, O. Akhrif</i>	
Robust Roll-Pitch-Yaw Integrated Autopilot for a High Angle-of-Attack Missile	4073
<i>S. Kang, H. Kim, D. Won, M. Tahk</i>	
Discussion and Analysis of Missile IGC Design	4087
<i>M. Dancer, S. Balakrishnan, E. Ohlmeyer</i>	
Rapid Prototyping of a Guidance and Control System for Missiles	4103
<i>B. Pan, S. Tang, B. Wie</i>	
Shaping State-Dependent Convergence Rates in Nonlinear Control System Design	4122
<i>W. Lohmiller, J. Stine</i>	
Stability Metrics for Simulation and Flight-Software Assessment and Monitoring of Adaptive Control Assist Compensators	4150
<i>A. Hodel, M. Whorton, J. Zhu</i>	
Non-Linear Control Structures for Rotorcraft Positioning	4175
<i>A. Drouin, T. Miquel, F. Mora-Camino</i>	
A Necessary and Sufficient Vertex Solution for Checking Robust Stability of Interval Parameter Matrices	4200
<i>R. Yedavalli</i>	
Nonlinear Control Using the State Dependent Coefficient Pole Placement Technique	4214
<i>C. Mracek</i>	
Nonlinear Controller Design for Satellite Reaction Wheels Unloading Using Anti-Windup Techniques	4247
<i>C. Pittet, N. Despre, S. Tarbouriech, C. Prieur</i>	
Observability and Estimation of Distributed Space Systems via Local Information-Exchange Networks	4264
<i>A. Rahmani, M. Mesbahi, N. Fathpour, F. Hadaegh</i>	
Minimum-Time Reorientation of an Asymmetric Rigid Body	4281
<i>A. Fleming, P. Sekhavat, I. Ross</i>	
Integrated Robust Control Design Methodology for an Advanced S/C with Large Flexible Structure	4293
<i>R. Chiang, J. Liu, D. Bender</i>	

Rapid Multi-Target Pointing and High Accuracy Attitude Control Steering Law of Variable Speed Control Moment Gyroscopes	4303
<i>M. Takahashi, Y. Nanamori, K. Yoshida</i>	
A Gyroless Safehold Control Law Using Angular Momentum as an Inertial Reference	4313
<i>E. Stoneking, K. Lebsack</i>	
Eliminating Secular Rotation of Spacecraft Orbits About the Angular Momentum Vector in J2 Perturbed Orbits.....	4325
<i>C. Wilkins, V. Kapila</i>	
Attitude Guidance and Control for Synchronized Maneuvers About a Fixed Rotation Axis	4342
<i>S. Ulrich, A. Kron, J. de Lafontaine</i>	
Value-Based Tasking Controllers for Sensing Assets	4361
<i>W. McEneaney, A. Oran, A. Cavender</i>	
Information-Theoretic Optimization of Periodic Orbits for Persistent Cooperative Geolocation	4371
<i>W. Whitacre, M. Campbell, G. Tillinghast</i>	
Coordinated Standoff Tracking of Moving Targets: Control Laws and Information Architectures	4383
<i>T. Summers, M. Akella, M. Mears</i>	
Guidance and Control Design for the Ascent Phase of the Hopper RLV	4408
<i>A. Marcos, L. Peñín, J. Sommer, W. Belau, E. Bornschlegl</i>	
Expendable Launch Vehicle Adaptive Autopilot Design	4423
<i>C. Plaisted, A. Leonessa</i>	
Active Compensation of Low Frequency Flexible Modes of Crew Launch Vehicle Using Sliding Mode Observers.....	4439
<i>Y. Shtessel, S. Baev</i>	
L_1 Adaptive Control for Flexible Space Launch Vehicle and Proposed Plan for Flight Validation.....	4447
<i>E. Kharisov, I. Gregory, C. Cao</i>	
Adaptive Attitude and Vibration Control of the NASA Ares Crew Launch Vehicle.....	4467
<i>J. Muse, K. Kim, L. Qin, A. Calise, J. Craig</i>	
Launch Vehicle Ascent Flight Control Augmentation via a Hybrid Adaptive Controller	4482
<i>B. LeFevre, R. Jha</i>	

Volume 7

Time-Coordinated Path Following of Multiple UAVs over Time-Varying Networks using L_1 Adaptation.....	4494
<i>A. Aguiar, I. Kaminer, R. Ghabcheloo</i>	
Tunnel-MILP: Path Planning with Sequential Convex Polytopes.....	4519
<i>M. Vitus, V. Pradeep, G. Hoffmann, S. Waslander, C. Tomlin</i>	
An A*-EC Hybrid Path Planning Method for Waypoint Traveling Problem Considering Terrain	4532
<i>K. Mitsutake, S. Higashino</i>	
Collision-Free Multi-UAV Optimal Path Planning and Cooperative Control for Tactical Applications	4546
<i>K. Bollino, L. Lewis</i>	
On-line Path Generation for Small Unmanned Aerial Vehicles Using B-Spline Path Templates.....	4563
<i>D. Jung, P. Tsiotras</i>	

Cooperative UAV Tracking Under Urban Occlusions and Airspace Limitations	4581
<i>V. Shaferman, T. Shima</i>	
Adaptive Mode Suppression Scheme for an Aeroelastic Airbreathing Hypersonic Cruise Vehicle	4597
<i>J. Levin, P. Ioannou, M. Mirmirani</i>	
Multi-Vehicle Cooperative Search Using Distributed Model Predictive Control.....	4609
<i>P. Trodden, A. Richards</i>	
Robust and Early Detection of Oscillatory Failure Case for New Generation Airbus Aircraft.....	4620
<i>L. Lavigne, A. Zolghadri, P. Goupil, P. Simon</i>	
A Model Following Inverse Controller with Adaptive Compensation for General Aviation Aircraft.....	4635
<i>H. Bruner, J. Steck</i>	
Multi-Objective and Predictive Control: Application to the Clear Air Turbulence Issue.....	4658
<i>P. Paim, X. Dal Santo</i>	
Robust Adaptive Multiple Model Controller Design for an Airbreathing Hypersonic Vehicle Model	4674
<i>M. Kuipers, P. Ioannou, B. Fidan</i>	
Analysis of the Aircraft to Aircraft Conflict Properties in the National Airspace System	4695
<i>M. Paglione, C. Santiago, R. Oaks</i>	
State Vector Based Near Term Trajectory Prediction.....	4720
<i>H. Ryan, M. Paglione</i>	
A Demonstration of an Aircraft Intent Interchange Specification for Facilitating Trajectory-Based Operations in the National Airspace System.....	4732
<i>M. Konyak, D. Warburton, J. Lopez-Leone</i>	
Investigation Into the Use of Automatic Dependent Surveillance-Broadcast Data for Monitoring Aircraft Altimetry System Error.....	4749
<i>L. Martin, C. Gerhardt-Falk, J. Perez</i>	
Future Advanced System of Collaborative T&E Requirements, Methods, and Practices	4765
<i>C. Jaggard, W. Baldwin, M. Paglione</i>	
Orion Crew Exploration Vehicle Launch Abort System Guidance and Control Analysis Overview	4773
<i>J. Davidson, S. Kim, D. Raney, V. Aubuchon, D. Sparks, R. Busan, R. Proud, D. Merritt</i>	
Design of Launch Abort System Thrust Profile and Concept of Operations.....	4795
<i>D. Litton, R. Winski, S. O'Keefe</i>	
Orion Service Module Abort Preliminary Design.....	4806
<i>D. Shoemaker, M. Tedesco</i>	
Orion Entry Flight Control Modifications and Performance	4825
<i>B. Hoelscher, A. Strahan, S. Stachowiak, G. Loe</i>	
Orion Entry Flight Corridor Analysis.....	4842
<i>J. Rea</i>	
Tactile Displays in the Cockpit: Developments in the Netherlands	4856
<i>E. Groen, C. Jansen, J. Van Erp, H. Van Veen</i>	
Comparing Situation Awareness for two Airborne Separation Assistance Interfaces	4864
<i>C. Steens, S. Van Dam, M. van Paassen, M. Mulder</i>	
Unmanned Aerial Vehicle Flying Qualities.....	4886
<i>C. McFarlane, T. Richardson, C. Jones</i>	
Piloted Sliding Mode FTC Simulator Evaluation for the ELAL Flight 1862 Incident	4906
<i>H. Alwi, C. Edwards, O. Stroosma, J. Mulder</i>	

Development of an Ecological Interface for the Three Degree Decelerating Approach	4924
<i>B. de Beer, M. Mulder, M. van Paassen</i>	
Design of a Partial Gravity Flight Director	4938
<i>A. Van den Heuvel, M. Mulder, M. Van Paassen</i>	
Solar Torque Control By Using Thin-Film Directionally Sensitive Surfaces	4959
<i>C. Harris, J. Wehner</i>	
Coning Control of Solar Sails Using Magnetic Momentum Error Reduction	4971
<i>D. Lawrence, M. Whorton</i>	
Adaptive Nonlinear Dynamic Inversion for Spacecraft Attitude Control with Fuel Sloshing	4988
<i>E. Weerd, E. Kampen, D. Gemert, Q. Chu, J. Mulder</i>	
Adaptive Guidance and Control for Space Access Vehicle Subject to Control Surface Failures.....	5012
<i>Q. Lam, M. McFarland, M. Ruth, D. Drake, D. Ridgely, M. Oppenheimer</i>	
Optimal Control of Spinning Axisymmetric Spacecraft: A Pseudospectral Approach	5034
<i>A. Fleming, I. Ross</i>	
Nonlinear Model Reference Adaptive Control for Satellite Attitude Tracking.....	5044
<i>S. Scarritt</i>	
Motion Planning in Complex Environments Using Closed-loop Prediction	5054
<i>Y. Kuwata, J. Teo, S. Karaman, G. Fiore, E. Frazzoli, J. How</i>	
Collaborative Target Tracking for Swarming MAVs Using Potential Fields and Panel Methods	5076
<i>O. Uzol, I. Yavrucuk, N. Sezer Uzol</i>	
Sensor Based Path Planning in Highly Constrained Environments for Agile Autonomous Vehicles	5084
<i>K. Berg-Taylor, K. Seo, S. Chung</i>	
Design and Implementation of a Low-Cost Aided Attitude and Heading Reference System.....	5104
<i>P. Martin, E. Salaün</i>	
Effect of Coordinate Switching on Translunar Trajectory Simulation Accuracy.....	5122
<i>M. Vautier, A. Sinclair</i>	
Unmanned Rotorcraft Tight Formation Flight Control Using Sliding Mode Control Driven by Sliding Mode Disturbance Observers.....	5131
<i>D. Galzi, Y. Shtessel</i>	
Fuel Efficient Formation Flight Control Design Based on Energy Maneuverability.....	5151
<i>J. Choi, Y. Kim</i>	
Stabilization of Collective Motion in a Uniform and Constant Flow Field	5167
<i>D. Paley</i>	
Distributed Discrete-time Consensus with a Time-varying Reference State	5175
<i>Y. Cao, W. Ren, Y. Li</i>	
Applications of a Macroscopic Model for En Route Sector Capacity	5185
<i>J. Welch, J. Andrews, B. Martin, E. Shank</i>	
Combining Airspace Sectors for the Efficient Use of Air Traffic Control Resources.....	5199
<i>M. Bloem, P. Kopardekar</i>	
Airspace Sector Redesign Based on Voronoi Diagrams.....	5214
<i>M. Xue</i>	
Analysis of Current Airspace Operations and Implications for Dynamic Airspace Configuration	5223
<i>C. Brinton, L. Cook</i>	
Dynamic Airspace Configuration Management Based on Computational Geometry Techniques.....	5236
<i>J. Mitchell, G. Sabhnani, R. Hoffman, J. Krozel, A. Yousefi</i>	

Volume 8

Capacity Estimation for Super-Dense Operations	5248
<i>J. Krozel, J. Prete, J. Mitchell, J. Kim, J. Zou</i>	
Analysis of Current Sectors Based on Traffic and Geometry	5263
<i>G. Chatterji, Y. Zheng, P. Kopardekar</i>	
Examining Airspace Structural Components and Configuration Practices for Dynamic Airspace Configuration	5281
<i>P. Lee, J. Mercer, B. Gore, N. Smith, K. Lee</i>	
An Analytical Approach to Star Identification Reliability	5304
<i>M. Kumar, D. Mortari, J. Junkins</i>	
Innovative SBR Antenna Technology (ISAT) ACS Design	5315
<i>J. Liu, D. Bender, R. Chiang, S. Chen, W. Wang</i>	
Reaction Wheel Disturbance Modeling, Jitter Analysis, and Validation Tests for Solar Dynamics Observatory	5326
<i>K. Liu, P. Maghami, C. Blaurock</i>	
Flux-Pinned Interfaces for the Assembly, Manipulation, and Reconfiguration of Modular Space Systems	5344
<i>J. Shoer</i>	
Efficient Control Torque Distribution Approach for Spacecraft Attitude Control	5361
<i>Y. Choi, H. Leeghim, H. Bang</i>	
Feature Extraction of Low Dimensional Sensor Returns for Autonomous Target Identification	5370
<i>C. Lum, R. Rysdyk</i>	
Feature Following and Distributed Navigation Systems Development for a Small Unmanned Aerial Vehicle with Low-Cost Sensors	5385
<i>D. Lee, I. Kaminer, V. Dobrokhodov, K. Jones</i>	
Multiresolution Path Planning Via Sector Decompositions Compatible to On-Board Sensor Data	5407
<i>E. Bakolas, P. Tsiotras</i>	
An Autonomous System for Cooperative Search and Localization Using Unmanned Vehicles	5418
<i>J. Tisdale, Z. Kim, J. Hedrick</i>	
Demonstrative Maneuvers for Aircraft Agility Prediction	5432
<i>D. Hall, C. Shearer</i>	
Robust Model Predictive Control with a Safety Mode: Applied to Small-Body Proximity Operations	5455
<i>J. Carson, B. Acikmese, R. Murray, D. MacMynowski</i>	
Implementation Details and Flight Test Results of an Autonomous Soaring Controller	5473
<i>D. Edwards</i>	
Modeling and Control of an Unmanned Underwater Vehicle with Four Thrusters	5489
<i>K. Küçük, K. Özgören</i>	
Stochastic Guidance Design for UAV Vision-Based Control Applications	5511
<i>Y. Watanabe, E. Johnson, A. Calise</i>	
Reactive Vision Based Obstacle Avoidance with Camera Field of View Constraints	5526
<i>R. Beard, J. Saunders</i>	
Application of Machine Vision in Unmanned Aerial Systems for Autonomous Target Tracking	5541
<i>J. Effland, B. Seanor, Y. Gu, M. Napolitano</i>	

Wide-Field Integration Methods for Autonomous Navigation in 3-D Environments	5559
<i>A. Hyslop, J. Humbert</i>	
Electro-Optical System Analysis for Sense and Avoid	5577
<i>J. Griffith, M. Kochenderfer, J. Kuchar</i>	
Pursuit Guidance Law and Adaptive Backstepping Controller Design for Vision-Based Net-Recovery UAV	5588
<i>S. Yoon, Y. Kim, S. Kim</i>	
A UAV Video-Surveillance System-Student Project and In-Flight Test Bed	5621
<i>D. Schmidt</i>	
Experiments in Fixed-Wing UAV Perching	5628
<i>R. Cory, R. Tedrake</i>	
Aerobatic Maneuvering of Miniature Air Vehicles Using Attitude Trajectories	5640
<i>J. Hall, T. McLain</i>	
GPS / MV Based Aerial Refueling for UAVs	5657
<i>M. Mammarella, G. Campa, M. Napolitano, B. Seanor, M. Fravolini</i>	
An Architecture for Autonomous Control of a Robotic Satellite Grappling Mission	5673
<i>J. Lennon, C. Henshaw, W. Purdy</i>	
On the Development of Parameterized Linear Analytical Longitudinal Airship Models	5681
<i>E. Kulczycki, A. Elfes, M. Quadrelli, J. Johnson, D. Bayard</i>	
Trajectory Generation and Control Methodology for an Autonomous Ground Vehicle	5704
<i>G. Elkaim, J. Connors</i>	
Design of the Onboard Autonomous Targeting Algorithm for the TransEarth Phase of Orion	5723
<i>M. Weeks, B. Marchand, C. Smith, S. Scarritt</i>	
Optimal Guidance of Hypersonic Vehicles Using B-Splines and Galerkin Projection	5749
<i>B. Singh, R. Bhattachary</i>	
Managing Energy and Mode Transitions in PredGuid Entry Guidance	5760
<i>M. Miller, G. Barton</i>	
A Review of Options for Autonomous Cislunar Navigation	5780
<i>J. Christian, E. Lightsey</i>	
Gain Scheduled FDI for a Re-Entry Vehicle	5799
<i>M. Kerr, A. Marcos, L. Peñin, E. Bornschlegl</i>	
Entry Trajectory Optimization with Analytical Feedback Bank Angle Law	5821
<i>P. Lu</i>	
Visiting Vehicle RF Ranging System Performance in International Space Station Multipath Environment	5839
<i>S. Hwu, K. DeSilva, M. Upanavage, C. Sham, Q. Kroll</i>	
Power-Optimal Steering of a Space Robotic System Driven by Control-Moment Gyroscopes	5849
<i>M. Carpenter</i>	
Control Moment Gyros as Space-Robotics Actuators	5864
<i>D. Brown</i>	
Optimal Seeding of a Class of Self-Reproducing Systems	5878
<i>A. Menezes, P. Kabamba</i>	
Optimization of the Trajectory of a General Free-Flying Manipulator During the Rendezvous Maneuver	5894
<i>K. Seweryn, M. Banaszkiewicz</i>	
Optimal Control for Robotic Capturing and Passivation of a Tumbling Satellite with Unknown Dynamics	5907
<i>F. Aghili</i>	

Cooperative Manipulation of a Flexible Object by Nonholonomically-Constrained Robots	5928
<i>L. Weitz, J. Doebbler, K. Holmstrom, J. Hurtado</i>	
Autoration of an Unmanned Helicopter by a Reinforcement Learning Algorithm	5938
<i>D. Lee, H. Bang, K. Baek</i>	
Reinforcement Learning for Active Length Control of Shape Memory Alloys.....	5952
<i>K. Kirkpatrick, J. Valasek</i>	
Reinforcement Learning of a Morphing Airfoil-Policy and Discrete Learning Analysis	5972
<i>A. Lampton, A. Niksch, J. Valasek</i>	

Volume 9

Morphing Airfoils with Four Morphing Parameters	5996
<i>A. Lampton, A. Niksch, J. Valasek</i>	
An Optimal Control Modification to Model-Reference Adaptive Control for Fast Adaptation.....	6017
<i>N. Nguyen, K. Krishnakumar, J. Boskovic</i>	
Direct Adaptive Control of Systems with Actuator Failures: State of the Art and Continuing Challenges.....	6037
<i>G. Tao, S. Joshi</i>	
Adaptive Gain-Scheduled Controllers in the Presence of Actuator Anomalies.....	6062
<i>A. Annaswamy, J. Jang, E. Lavretsky</i>	
A Comparison of Select Direct Adaptive Control Methods Under Actuator Failure Accommodation.....	6075
<i>A. Kutay, G. Chowdhary, A. Calise, E. Johnson</i>	
Control of Uncertain Systems with Nonaffine Dynamics Using Hamilton's Principle and Time-Scale Separation	6088
<i>E. Lavretsky, N. Hovakimyan</i>	
L_1 Adaptive Output Feedback Controller for Non Strictly Positive Real Reference Systems with Applications to Aerospace Examples	6103
<i>C. Cao, N. Hovakimyan</i>	
Inherent Robustness of Minimal Modeling Discrete-Time Adaptive Control to Flight Anomalies.....	6119
<i>M. Santillo, D. Bernstein</i>	
Multiple Model-Based Adaptive Fault-Tolerant Control of Delta Clipper Experimental (DC-X) Planetary Lander	6141
<i>J. Boskovic, J. Jackson, N. Nguyen, R. Mehra</i>	
Orion GN&C Architecture for Increased Spacecraft Automation and Autonomy Capabilities	6163
<i>J. Hart, E. King, P. Miotto, S. Lim</i>	
Estimating Burn Error During Proximity Operations For Open-loop Guidance Maneuvers With Application.....	6189
<i>Z. Milenkovic</i>	
Orion Preliminary Navigation System Design.....	6201
<i>H. Mamich, C. D'Souza</i>	
Assessment of Orion Mission Capability as a Function of Driving Time and Geometry-Related Factors.....	6214
<i>G. Condon, A. Scott</i>	
An Implementation Of An Inertially-Fixed Eigenaxis Attitude Maneuver Intercept Algorithm	6230
<i>Z. Milenkovic, M. Martin</i>	
Autonomous Ballistic Missile Inertial Guidance: A New Paradigm for the 21st Century.....	6242
<i>R. Fall, M. Dipipi, S. Slivinsky, C. Paul</i>	

A High Reliability Solid State Accelerometer for Ballistic Missile Inertial Guidance	6255
<i>S. Becka, M. Novack, S. Slivinsky, C. Paul</i>	
Strategic Interferometric Fiber-Optic Gyroscope for Ballistic Missile Inertial Guidance	6267
<i>S. Divakaruni, G. Keith, C. Narayanan, J. Keener</i>	
Linear Quadratic Differential Games Guidance Law for Imposing a Terminal Intercept Angle	6275
<i>V. Shaferman, T. Shima</i>	
Circular Guidance Laws With and Without Terminal Velocity Direction Constraints	6294
<i>V. Lam</i>	
Robustness Analysis of Decomposition-Based Simultaneous Stabilization with Optimal Control Approach	6314
<i>R. Perez, H. Liu</i>	
Mixed H_2/H_∞ Control Design for Mechanical Systems: Analytical and Numerical Developments	6336
<i>D. Alazard, N. Fezans, N. Imbert, B. Carpentier</i>	
Advances in Pseudospectral Methods for Optimal Control	6352
<i>F. Fahroo, I. Ross</i>	
QZ Based Algorithm for System Pole, Transmission Zero and Residue Derivatives	6375
<i>B. Burchett</i>	
Optimal Control for Spacecraft Large Angle Manuevers Using H Linear Varying Parameter Control Techniques	6397
<i>H. Hughes, F. Wu</i>	
Design of Gain-Scheduled SPR Controllers Using Numerical Optimization	6437
<i>J. Forbes, C. Damaren</i>	
Gradient Descent Optimization Maximizes Stability Margins for an Unstable, Non-Minimal Phase Plant	6449
<i>D. Cameron</i>	
Descriptor Form All Solutions H-Infinity Controller Formulae: A Matrix Pencil Approach	6457
<i>A. Karthikeyan, M. Safonov</i>	
An Optics-Based Tip-Path Plane Tracking System for Rotorcraft Applications	6467
<i>R. Sickenberger, F. Schmitz</i>	
Integrated Pan/Tilt Sensor System and Flight Controls	6483
<i>J. Dunham, E. Johnson</i>	
An Adaptive Kalman Filter for Motion Estimation/Prediction of a Free-Falling Space Object Using Laser-Vision Data with Uncertain Inertial and Noise Characteristics	6501
<i>F. Aghili, K. Parsa</i>	
Orbital Express Advanced Video Guidance Sensor: Ground Testing, Flight Results and Comparisons	6522
<i>R. Pinson, R. Howard, A. Heaton</i>	
Preliminary Calibration Results for a High-Precision CMOS Sun Sensor	6534
<i>M. Grassi, G. Rufino, M. Rolfi</i>	
Vision-Based Navigation for Airfield Surface Operation	6543
<i>E. Frew, T. Gerritsen, S. Pledgie, C. Brinton, S. Patel, B. Schwartz</i>	
Characterization and Implementation of a Vision-Based 6-DOF Localization System	6566
<i>J. Doebbler, J. Davis, J. Valasek, J. Junkins</i>	
On-Board Vision-Based Sense-and-Avoid for Small UAVs	6578
<i>A. Dennis, J. Archibald, B. Edwards, D. Lee</i>	
Jth Moment Extended Kalman Filtering for Estimation of Nonlinear Dynamic Systems	6586
<i>M. Majji, J. Junkins, J. Turner</i>	

Adaptive Aircraft Trajectory Prediction using Particle Filters	6604
<i>I. Lympelopoulos, J. Lygeros</i>	
Adaptive Huber-Based Filtering Using Projection Statistics: Application to Spacecraft Attitude Estimation	6620
<i>C. Karlgaard, AH. Schaub</i>	
Observer-Type H_∞ Filter Design for Structural Systems	6640
<i>M. Meisami-Azad, J. Mohammadpour, K. Grigoriadis</i>	
Non-Linear System Identification for Aeroelastic Systems with Application to Experimental Data	6654
<i>S. Kukreja</i>	
Differential Geometric Estimators for Nonlinear Dynamic Systems	6667
<i>P. Menon</i>	
Distributed Optimization for Automating Air Traffic Flow Management	6685
<i>A. Agogino</i>	
Short Term National Airspace System Delay Prediction Using Weather Impacted Traffic Index	6696
<i>B. Sridhar, N. Chen</i>	
High-Capacity Tube Network Design using the Hough Transform	6706
<i>M. Xue, P. Kopardekar</i>	
Traffic Complexity Measurement Under Higher Levels of Automation and Higher Traffic Densities	6718
<i>P. Kopardekar, T. Prevot, M. Jastrzebski</i>	
Incorporating User Preferences in Collaborative Traffic Flow Management	6732
<i>K. Sheth, S. Gutierrez-Nolasco</i>	
Traffic Flow Management for Super-Dense Operations	6744
<i>R. Jakobovits, J. Krozel</i>	

Volume 10

Traffic Flow Management using Supply Chain and FIR Filter Methods	6758
<i>K. Roy, C. Tomlin</i>	
Flight-Deck Automation for Trajectory-Based Surface Operations	6772
<i>V. Cheng, G. Sweriduk, J. Yeh, A. Andre, D. Foyle</i>	
4D Trajectory and Time-of-Arrival Control to Enable Continuous Descent Arrivals	6787
<i>J. Klooster, K. Wichman, O. Bleeker</i>	
Three-Degree Decelerating Approaches in High Density Arrival Streams	6804
<i>A. de Leege, M. Mulder, R. van Paassen</i>	
En Route Speed Change Optimization for Spacing Continuous Descent Arrivals	6829
<i>M. Lowther, J. Clarke, L. Ren</i>	
Advanced Noise Abatement Departure Procedures: Custom Optimized Departure Profiles	6848
<i>S. Hebly, H. Visser</i>	
Trajectory Planning by Preserving Flexibility: Metrics and Analysis	6859
<i>H. Idris, T. El-Wakil, D. Wing</i>	
Analysis of Climb Trajectory Modeling for Separation Assurance Automation	6873
<i>D. Thipphavong</i>	
Abstraction Techniques for Capturing and Comparing Trajectory Predictor Capabilities and Requirements	6887
<i>R. Vivona, S. Green, K. Cate</i>	

Quadrotor Helicopter Trajectory Tracking Control	6903
<i>G. Hoffmann, S. Waslander, C. Tomlin</i>	
Optimal Controller for an Autonomous Helicopter in Hovering	6917
<i>L. Zhao, V. Murthy</i>	
A System for 3D Autonomous Rotorcraft Navigation in Urban Environments	6933
<i>P. Tsenkov, J. Howlett, M. Whalley</i>	
The JAviator: A High-Payload Quadrotor UAV with High-Level Programming Capabilities	6956
<i>R. Trummer, H. Roeck, S. Craciunas, C. Kirsch</i>	
Comprehensive Nonlinear Modeling of an Unmanned-Aerial-Vehicle Helicopter	6977
<i>G. Cai, B. Chen, T. Lee, K. Lum</i>	
Evaluation of Operational Flight Program in Tilt Rotor UAV	7002
<i>C. Yoo, B. Park, Y. Kang</i>	
Trajectory Design, Guidance and Control for Autonomous Parafoils	7010
<i>B. Rademacher, P. Lu, A. Strahan, C. Cerimele</i>	
Modeling and Simulation of Nonlinear Dynamics of a Powered Paraglider	7035
<i>M. Watanabe, Y. Ochi</i>	
A Dynamic Threshold Approach to Fault Detection in Uninhabited Aerial Vehicles	7051
<i>A. Ortiz, N. Neogi</i>	
Design of Redundancy Relations for Unmanned Aerial Vehicle FDI	7069
<i>M. Fravolini, G. Campa, M. Napolitano</i>	
Aircraft Attitude, Position, and Velocity Determination Using Sensor Fusion	7081
<i>J. Jarrell, Y. Gu, B. Seanor, M. Napolitano</i>	
Low-Cost Sensor Based Integrated Airdata and Navigation System for General Aviation Aircraft	7098
<i>S. Myszchik, F. Holzapfel, G. Sachs</i>	
Seeker Gyro Calibration Via Model-Based Fusion of Visual and Inertial Data	7119
<i>M. Goldshtein, Y. Oshman, T. Efrati</i>	
Performance of Multi-Criterion Acquisition Sensor Systems	7138
<i>R. Frankot</i>	
Unscented Information Filtering for Distributed Estimation and Multiple Sensor Fusion	7155
<i>D-J. Lee</i>	
Estimability of Sensor Alignment Biases Using the Static Cramer Rao Lower Bound	7170
<i>M. Topland, O. Hallingstad</i>	
Robust Fault Tolerant LPV Control Design for Systems Under Actuator Failures	7180
<i>J. Mohammadpour, K. Grigoriadis</i>	
Centre of Gravity Movement as Redundant Pitch Attitude Control in Control Allocation	7189
<i>H. Ahmad, T. Young, D. Toal, E. Omerdic</i>	
Computationally Efficient Use of MPC and Dynamic Inversion for Reconfigurable Flight Control	7202
<i>D. Joosten, T. Boom, T. Lombaerts</i>	
An Example of Flight Control System Design for Inherent Damage Tolerance	7215
<i>R. Hess, G. Cama</i>	
Integrated Guidance and Autopilot for Dual Controlled Missiles Using Higher Order Sliding Mode Controllers and Observers	7242
<i>C. Tournes, Y. Shtessel</i>	
Uncertainty Modeling, Analysis and Robust Flight Control Design for a Small UAV System	7267
<i>Y. Paw, G. Balas</i>	

Flight Control Reconfiguration based on Online Physical Model Identification and Nonlinear Dynamic Inversion	7283
<i>T. Lombaerts, H. Huisman, P. Chu, B. Mulder, D. Joosten</i>	
Improved Reliable H₂ Output Feedback Controller Design for F-16 Aircraft Against Faults	7307
<i>L. Feng, J. Wang, E. Poh</i>	
A Multi-Position Calibration Algorithm for Inertial Measurement Units.....	7313
<i>H. Zhang, Y. Wu, M. Wu, X. Hu, Y. Zha</i>	
Evaluation of the Haltere as a Biologically Inspired Inertial Rate Measurement Sensor	7328
<i>R. Thompson, J. Evers, M. Wehling, W. Dixon</i>	
Reliability Improvement for Low-Cost Attitude Sensing Using Redundant Calculations	7342
<i>M. Ilg, B. Chang</i>	
Methods for Localization and Mapping Using Vision and Inertial Sensors	7353
<i>A. Wu, E. Johnson</i>	
UGV Trailer Position Estimation Using a Dynamic Base RTK System.....	7378
<i>W. Travis, D. Hodo, D. Bevly, J. Hung</i>	
Adaptive Sensing for Improving Detection of Unexploded Ordnances.....	7390
<i>A. Chen</i>	
Autonomous Ground-Based Tracking of Migrating Raptors using Vision	7405
<i>S. Sarfraz, J. Langelaan</i>	
Adaptive Vision-Based Guidance Law with Guaranteed Performance Bounds for Tracking a Ground Target with Time-Varying Velocity	7419
<i>L. Ma, C. Cao, N. Hovakimyan, V. Dobrokhodov, I. Kaminer</i>	
Motion Estimation via a Zoom Camera	7451
<i>L. Ma, C. Cao, A. Young, N. Hovakimyan</i>	
Multi-Reference Visual Servo Control of an Unmanned Ground Vehicle.....	7465
<i>S. Mehta, G. Hu, A. Dani, W. Dixon</i>	
Vision-Based Target Geolocation and Optimal Surveillance on an Unmanned Aerial Vehicle.....	7477
<i>J. Ross, B. Geiger, G. Sinsley, J. Horn, L. Long, A. Niessner</i>	
Vision-Based Obstacle Avoidance of Wheeled Robots Using Fast Estimation	7492
<i>A. Dippold, L. Ma, N. Hovakimyan</i>	

Volume 11

A Vision-Based Automatic Landing System for Fixed-Wing UAVs Using an Inflated Airbag.....	7519
<i>D. Shim, S. Huh, B. Min</i>	
Introducing the Model-Based Aerospace Challenge (MACH).....	7530
<i>M. Jardin, R. Shenoy</i>	
Modeling and Control Design for the ARES Aircraft, Model-based Aerospace Challenge #1	7538
<i>A. Hjartarson, Y. Paw, A. Chakraborty</i>	
Control System Modeling and Design for a Mars Flyer, MACH-1 Competition	7561
<i>G. Elkaim, M. Lizarraga, D. Garalde, J. Choi</i>	
On Modeling and Robust Control of ARES.....	7590
<i>R. Bhattacharya, J. Valasek, B. Singh, S. Johnson, J. Jackson, M. Marwaha</i>	
Model-Based Aerospace Challenge 2 (MACH-2)	7624
<i>R. Shenoy, M. Jardin</i>	
Temporal Multiple Model Estimator for a Maneuvering Target	7629
<i>G. Hexner, H. Weiss</i>	

Homing Missile Guidance and Estimation for Three-Dimensional Intercept	7655
<i>R. Chen, J. Speyer, D. Lianos</i>	
Effect of Estimation on the Performance of an Integrated Missile Guidance and Control System	7683
<i>A. Zhurbal, M. Idan</i>	
Comparison Between Three Spiraling Ballistic Missile State Estimators.....	7707
<i>J. Kim, S. Vaddi, P. Menon, E. Ohlmeyer</i>	
Roll Estimation of a Smart Munition Using a Magnetometer Based on an Unscented Kalman Filter	7723
<i>H. Lee, K. Kim, H. Park, C. Park, J. Lee</i>	
Sliding Mode Guidance Law for Delayed LOS Rate Measurement	7736
<i>K. Lum, J. Xu, K. Abidi, J. Xu</i>	
Performance Study of Radar And Seeker Estimator in a Realistic Tactical Scenario.....	7747
<i>T. Srinivasan, P. Kar, A. Sarkar, M. Ananthasayanam</i>	
Control of a Flexible, Hypersonic Scramjet Vehicle Using a Differential Algebraic Approach.....	7768
<i>T. Adami, J. Zhu</i>	
Robust Sliding Mode Control for Release of Spacecraft from Maglev Launch Assist.....	7780
<i>P. Gurbacki</i>	
Adaptive Reconfigurable Dynamic Inversion Control for a Hypersonic Cruise Vehicle	7802
<i>H. Youssef, S. Reiman, C. Dillon, H. Lee</i>	
SPHERES Reconfigurable Control Allocation for Autonomous Assembly.....	7813
<i>S. Mohan, D. Miller</i>	
Gain Scheduled Autopilot Synthesis for an Atmosphere Re-Entry Vehicle	7822
<i>S. Theodoulis, G. Duc</i>	
Interactive Booster Guidance.....	7834
<i>R. Sexton, M. Rubery</i>	
Analysis of Approximations in Multi-Temporal Measurements.....	7842
<i>A. Fosbury</i>	
Uncertainty Propagation for Nonlinear Dynamical Systems Using Gaussian Mixture Models.....	7864
<i>G. Terejanu, P. Singla, T. Singh, P. Scott</i>	
GPS Code Tracking using a Sampling Importance Resampling Particle Filter.....	7888
<i>G. Fay, J. Speyer</i>	
Comparison of Adaptive Estimation Techniques for Vector Delay/Frequency Tracking.....	7906
<i>M. Lashley, D. Bevly</i>	
Fault Detection for Deep Space Satellites.....	7917
<i>W. Williamson, J. Speyer, V. Dang, J. Sharp</i>	
Modifications to Pose Estimation Algorithms that Allow for Near-Planar Feature Points.....	7943
<i>S. Schweighart, P. Miotto, M. Hale, L. Singh</i>	
Spacecraft Pointing for Science Observations for MESSENGER's Venus Flyby 2 and Mercury Flyby 1.....	7960
<i>R. Vaughan, D. O'Shaughnessy</i>	
Satellite-to-Satellite Tracking for Future Earth Observation Missions: The Embedded Model Control Approach.....	7981
<i>L. Massotti, P. Silvestrin, M. Aguirre, E. Canuto</i>	
ATV GNC and Safety Functions Synthesis: Overall Design, Main Performances and Operations.....	8003
<i>B. Cavrois, S. Reynaud, G. Personne, S. Chavy, S. Strandmoe</i>	

High-Accuracy On-Board Attitude Estimation for the GMES Sentinel-2 Satellite: Concept, Design, and First Results	8025
<i>S. Winkler, G. Wiedermann, W. Gockel</i>	
Flight Trajectory and Control System of SELenological and Engineering Explorer "KAGUYA" mission to the Moon	8040
<i>S. Matsumoto, Y. Takizawa, M. Ogawa, Y. Kawakatsu, H. Terada</i>	
Comparative Observer-Based Nutation Control Techniques for NASA Magnetospheric Multiscale (MMS) Mission Spacecraft	8055
<i>N. Mushaweh, M. Thein</i>	
Cockpit Avionics Upgrades Required Attitude Symbol for the Space Shuttle Cockpit	8072
<i>L. Roberts</i>	
A Fault-Tolerant Magnetic Spin Stabilizing Controller for the JC2Sat-FF Mission	8091
<i>A. de Ruiter, J. Lee, A. Ng</i>	
Development of a Payload Derived Position Acquisition System for Parachute Recovery Systems	8111
<i>R. Tiaden, O. Yakimenko</i>	
Flight Test Verification of the Guidance and Navigation Systems Design for an Unmanned Scaled Supersonic Experimental Airplane NEXST-1	8128
<i>Y. Murakami, D. Kwak, K. Nakahata</i>	
Integrated Avionics System for Research UAVs	8142
<i>Y. Gu, B. Seanor, S. Gururajan, M. Napolitano</i>	
New Means for Observing and Characterizing Projectile Dynamics in Free-Flight Experiments	8151
<i>T. Harkins, G. Brown, B. Davis, F. Fresconi, W. Hathaway, A. Hathaway, A. Lovas</i>	
Relative Navigation Algorithm Between Cooperating Spacecraft	8172
<i>C. Decoust, B. Udrea</i>	
Autonomous Pose Determination of a Passive Target Through Spheroid Modelling	8184
<i>D. Wokes, P. Palmer</i>	
A Comparison of Optical Flow algorithms for Real Time Aircraft Guidance and Navigation	8209
<i>M. Mammarella, G. Campa, B. Seanor, M. Napolitano, M. Fravolini</i>	
In-Flight Demonstration of Safety Critical Operations of ATV Jules Verne GNC	8223
<i>E. De Pasquale, C. Casas-Cuadrado, I. Juarez, M. Bonnet, D. Caluwaerts</i>	

Author Index