Van Roessel, H. J., G90-046 van Schoor, M. C., G90-146 Venkayya, V. B., G90-077 Vincent, T. L., G90-081, G90-100, G90-105 von Flotow, A. H., G88-059, G90-093 Walker, B. K., G90-151

Walker, R. A., G90-128

Walker, S. R., G90-154 Warren, W., G90-141 Weeks, C. J., G90-113 Weisshaar, T. A., G90-067 White, J. E., G90-088 Wie, B., G90-124, G90-125, G90-126, G90-141, G90-142, G90-145 Wilkinson, C. K., G90-072 Williams, T., G90-097 Wise, K. A., G90-019 Wood, L. J., G90-113 Wu, Z. Y., G90-081 Yang, C., G90-149 Yeh, F., G90-149 Yeh, H., G90-062, G90-158 Yen, V., G90-037 Yoon, Y. J., G90-103 Young, K. D., G90-099 Young, P., G90-064 Yu, W., G90-144 Zadunaisky, P. E., G90-157 Zhang, Q., G90-044 Zhao, Y., G90-117, G90-118, G90-168 Zimmerman, D. C., G90-011

Chronological Index

G88-059 Some Approximations for the Dynamics of Spacecraft Tethers. A. H. von Flotow, Massachusetts Institute of Technology (11, 4, p. 357) Article
Technical Comment by A. K. Misra, McGill University, Canada (13, 2, p. 380)

Reply (13, 2, p. 380)

G89-015 Efficacy of the Gibbs-Appell Method for Generating Equations of Motion for Complex Systems. Edward A. Desloge, Florida State University (12, 1, p. 114) Engineering Note

Technical Comment by David A. Levinson, Lockheed Palo Alto Research Laboratory; and Arun K. Banerjee, Lockheed Missiles & Space Company (13, 2, p. 381) Reply (13, 2, p. 382)

G90-001 Computational Method for Determining the No-Escape Envelope of a Short-Range Missile. Frank Neuman, NASA Ames Research Center (13, 1, p. 6) Synoptic based on AIAA Paper 88-4137 CP889

G90-002 Simulation Investigation of the Effects of Helicopter Hovering Dynamics on Pilot Performance. Bimal L. Aponso, David G. Mitchell and Roger H. Hoh, Systems Technology, Inc. (13, 1, p. 8) Article based on AIAA Paper 87-2533 CP889

G90-003 Analysis and Design of Sidestick Controller Systems for General Aviation Aircraft. Daniel M. Martin and David R. Downing, *University of Kansas Center for Research, Inc.* (13, 1, p. 16) Article

G90-004 Attitude Projection Method for Analyzing Large-Amplitude Airplane Maneuvers. Osamu Kato, Nagoya University, Japan (13, 1, p. 22) Article

G90-005 Time-Domain Aeroservoelastic Modeling Using Weighted Unsteady Aerodynamic Forces. Mordechay Karpel, Technion—Israel Institute of Technology (13, 1, p. 30) Article

G90-006 Numerical Approach for Solving Rigid Spacecraft Minimum Time Attitude Maneuvers. Feiyue Li and Peter M. Bainum, Howard University (13, 1, p. 38) Article based on AIAA Paper 88-0675

G90-007 Reduced-Order Compensator Design for a Flexible Structure. Ph. C. Opdenacker, E. A. Jonckheere, M. G. Safonov and J. C. Juang, *University of Southern California*; and M. S. Lukich, *TRW*, *Inc.* (13, 1, p. 46) Article

G90-008 Near-Minimum Time, Closed-Loop Slewing of Flexible Spacecraft. R. M. Byers, S. R. Vadali and J. L. Junkins, *Texas A&M University* (13, 1, p. 57) Article

G90-009 Robust Linear Quadratic Gaussian Control for Flexible Structures. P. A. Blelloch, Structural Dynamics Research Corporation; and D. L. Mingori, University of California, Los Angeles (13, 1, p. 66) Article based on AIAA Paper 86-2051 CP889

G90-010 Interactions Between Rigid-Body and Flexible-Body Motions in Maneuvering Spacecraft. Larry M. Silverberg and Sungtae Park, North Carolina State University (13, 1, p. 73) Article

G90-011 On the Nature of the Interaction Between Structures and Proof-Mass Actuators. David C. Zimmerman, *University of Florida*; and Daniel J. Inman, *Brown University* (13, 1, p. 82) Article

G90-012 Spacecraft Momentum Unloading: The Cell Mapping Approach. H. Flashner, *University of Southern California*; and T. F. Burns, *TRW, Inc.* (13, 1, p. 89) Article

G90-013 Spacecraft Mass Property Identification with Torque-Generating Control. E. Bergmann, Charles Stark Draper Laboratory, Inc.; and J. Dzielski, Pennsylvania State University (13, 1, p. 99) Article

G90-014 Tether Damping in Space. Xiaohua He and J. David Powell, Stanford University (13, 1, p. 104) Article

G90-015 Role of Maggi's Equations in Computational Methods for Constrained Multibody Systems. Andrew Kurdila, John G. Papastavridis and Manohar P. Kamat, Georgia Institute of Technology (13, 1, p. 113) Article

G90-016 Multitarget Classification and Estimation Using Clustering Techniques. S. N. Balakrishnan and Byron D. Tapley, *University of Texas at Austin* (13, 1, p. 121) Article based on AIAA Paper 88-0571

G90-017 On the Approximate Solution of Complex Combat Games. Frank Neuman, NASA Ames Research Center (13, 1, p. 128) Article based on AIAA Paper 87-2395 CP878

G90-018 Linear-Quadratic Guidance Law for Dual Control of Homing Missiles. D. G. Hull, J. L. Speyer and D. B. Burris, University of Texas at Austin (13, 1, p. 137) Article

G90-019 Bank-to-Turn Missile Autopilot Design Using Loop Transfer Recovery. Kevin A. Wise, McDonnell Douglas Astronautics Company (13, 1, p. 145) Article based on AIAA Paper 88-0336

G90-020 Numerical Computation of Singular Control Functions in Trajectory Optimization Problems. Hans Joachim Oberle, University of Hamburg, FRG (13, 1, p. 153) Article

G90-021 Analytical and Experimental Investigation of Output Feedback vs Linear Quadratic Regulator. Zoran N. Martinovic, George C. Schamel II, Raphael T. Haftka and William L. Hallauer Jr., Virginia Polytechnic Institute and State University (13, 1, p. 160) Article based on AIAA Paper 87-2390 CP878

G90-022 Estimator Eigenvalue Placement in Positive Real Control. G. L. Slater and M. D. McLaren, *University of Cincinnati* (13, 1, p. 168) Article

- G90-023 Class of Hierarchical Controllers and Their Blackboard Implementations. T. L. Skillman, W. Kohn, D. Nguyen, C. Ling and R. Dodhiawala, *Boeing Company* (13, 1, p. 176) Article based on AIAA Paper 87-2820 CP878
- G90-024 New Form for the Optimal Rendezvous Equations Near a Keplerian Orbit. Thomas E. Carter, Eastern Connecticut State University (13, 1, p. 183) Engineering Note Errata (13, 2, p. 384)
- G90-025 Optimal Aeroassisted Orbital Plane Change with Heating-Rate Constraint. Fu-Kuo Hsu and Te-Son Kuo, National Taiwan University, Taiwan, ROC; and Jeng-Shing Chern, Chung Shan Institute of Science and Technology, Taiwan, ROC (13, 1, p. 186) Engineering Note based on AIAA Paper 88-0301
- G90-026 On the Level 2 Ratings of the Cooper-Harper Scale. David J. Moorhouse, U.S. Air Force Wright Aeronautical Laboratories, Wright-Patterson AFB (13, 1, p. 189) Engineering Note
- G90-027 Constrained Initial Guidance Algorithm. John E. Cochran Jr. and Davy A. Haynes, *Auburn University* (13, 2, p. 193) Article
- G90-028 Investigation of the Use of Acceleration Estimates by Endgame Guidance Laws. Douglas P. Looze, University of Massachusetts; John Y. Hsu and Daniel Grunberg, ALPHATECH, Inc. (13, 2, p. 198) Article
- G90-029 Multibody System Order n Dynamics Formulation Based on Velocity Transform Method. J. E. Keat, Cambridge Research, Photon Research Associates (13, 2, p. 207) Article
- G90-030 Maggi's Equations of Motion and the Determination of Constraint Reactions. John G. Papastavridis, *Georgia Institute of Technology* (13, 2, p. 213) Article
- G90-031 Dynamics of an Arbitrary Flexible Body in Large Rotation and Translation. Arun K. Banerjee and John M. Dickens, Lockheed Missiles & Space Company (13, 2, p. 221) Article based on AIAA Paper 89-1308 CP891
- G90-032 Gravity Effects on Damping of a Space Structure with Pinned Joints. Steven L. Folkman and Frank J. Redd, *Utah State University* (13, 2, p. 228) Article based on AIAA Paper 88-2449 CP883
- G90-033 Control of Linear Dampers for Large Space Structures. J. K. Haviland, T. W. Lim, W. D. Pilkey and H. Politansky, *University of Virginia* (13, 2, p. 234) Article based on AIAA Paper 87-2251 CP875
- G90-034 Dynamics and Control of Spacecraft with Retargeting Flexible Antennas. Leonard Meirovitch and Moon K. Kwak, Virginia Polytechnic Institute and State University (13, 2, p. 241) Article based on AIAA Paper 88-2414 CP882
- G90-035 Sensor and Actuator Selection for Large Space Structure Control. M. L. DeLorenzo, Air Command and Staff College, Maxwell AFB (13, 2, p. 249) Article
- G90-036 Decentralized Feedback Maneuver of Flexible Spacecraft. Larry Silverberg and Lester A. Foster, North Carolina State University (13, 2, p. 258) Article
- G90-037 Fourier-Based Optimal Control Approach for Structural Systems. Vincent Yen and Mark L. Nagurka, Carnegie-Mellon University (13, 2, p. 265) Article

- G90-038 Identification of Moderately Nonlinear Flight Mechanics Systems with Additive Process and Measurement Noise. Ravindra V. Jategaonkar and Ermin Plaetschke, *Institute for Flight Mechanics*. *DFVLR*, *FRG* (13, 2, p. 277) Article based on AIAA Paper 88-4347 CP8810
- G90-039 Hinges-Free and Hinges-Locked Modes of a Deformable Multibody Space Station—A Continuum Analysis. Hari B. Hablani, *Rockwell International* (13, 2, p. 286) Article based on AIAA Paper 87-0925 CP873
- G90-040 Approximate Loop Transfer Recovery Method for Designing Fixed-Order Compensators. Anthony J. Calise and J. V. R. Prasad, Georgia Institute of Technology (13, 2, p. 297) Article based on AIAA Paper 88-4078 CP889
- G90-041 Restructurable Control Using Proportional-Integral Implicit Model Following. Chien Y. Huang and Robert F. Stengel, *Princeton University* (13, 2, p. 303) Article based on AIAA Paper 87-2312 CP878
- G90-042 Gain-Sensitivity Augmentation for Near-Optimal Control of Linear Parameter-Dependent Plants. Peter L. Graf and Rahmat Shoureshi, *Purdue University* (13, 2, p. 310) Article
- G90-043 Sensitivity Controller for Uncertain Systems. Kenji Okada, Mitsubishi Electric Corporation, Japan; and Robert E. Skelton, Purdue University (13, 2, p. 321) Article
- **G90-044 Suppression of Undesired Inputs of Linear Systems by Eigenspace Assignment.** Qiang Zhang, G. L. Slater and R. J. Allemang, *University of Cincinnati* (13, 2, p. 330) Article
- G90-045 Robust Control System Design Synthesis with Observers. Tsuyoshi Okada, Masahiko Kihara and Masakazu Ikeda, National Defense Academy, Japan (13, 2, p. 337) Article
- G90-046 Unfolding of Double-Zero Eigenvalue Bifurcations for Supersonic Flow Past a Pitching Wedge. N. Sri Namachchivaya, University of Illinois; and H. J. Van Roessel, University of Alberta, Canada (13, 2, p. 343) Article
- G90-047 Pilot-Vehicle Analysis of Multiaxis Tasks. Duane McRuer, Systems Technology, Inc.; and David K. Schmidt, Purdue University (13, 2, p. 348) Article based on AIAA Paper 87-2538 CP878
- G90-048 Simulator Motion-Drive Algorithms: A Designer's Perspective. Meyer A. Nahon and Lloyd D. Reid, *University of Toronto, Canada* (13, 2, p. 356) Article
- **G90-049 Optimal Strapdown Attitude Integration Algorithms.** M. B. Ignagni, *Honeywell Systems and Research Center* (13, 2, p. 363) Article
 - Errata (13, 3, p. 576)
- G90-050 Libration Damping of a Tethered Satellite by Yo-Yo Control with Angle Measurement. W. R. Davis and A. K. Banerjee, Lockheed Missiles & Space Company (13, 2, p. 370) Engineering Note
- G90-051 Functional Analysis Methods in the Study of the Optimal Transfer. Mihai Popescu and Tina Popescu, National Institute for Scientific and Technical Creation, Romania (13, 2, p. 374) Engineering Note
- G90-052 Bang-Bang Control of Flexible Spacecraft Slewing Maneuvers: Guaranteed Terminal Pointing Accuracy. G. Singh, P. T. Kabamba and N. H. McClamroch, *University of Michigan* (13, 2, p. 376) Engineering Note
- G90-058 Stability of Dynamical Systems: An Overview. S. Pradeep and S. K. Shrivastava, *Indian Institute of Science* (13, 3, p. 385) Survey Paper

- G90-059 Optimal Explicit Guidance of Multistage Launch Vehicle Along Three-Dimensional Trajectory. S. K. Sinha, Indian Space Research Organization Headquarters; and S. K. Shrivastava, Indian Institute of Science (13, 3, p. 394) Article
- G90-060 Gain Margins and Phase Margins for Control Systems with Adjustable Parameters. Che-Hsu Chang, National Chiao-Tung University, Taiwan, ROC; and Kuang-Wei Han, Chung-Shan Institute of Science and Technology, Taiwan, ROC (13, 3,
- G90-061 Sparse Jacobian Updates in the Collocation Method for Optimal Control Problems. John T. Betts, *Boeing Computer Services* (13, 3, p. 409) Article based on AIAA Paper 88-4150 CP889
- G90-062 Control of Unknown Systems via Deconvolution. Hsi-Han Yeh, Siva S. Banda and P. J. Lynch, Flight Dynamics Laboratory, Wright-Patterson AFB (13, 3, p. 416) Article based on AIAA Paper 87-2310 CP878
- G90-063 Structural Tailoring and Feedback Control Synthesis: An Interdisciplinary Approach. W. Keith Belvin, NASA Langley Research Center; and K. C. Park, University of Colorado (13, 3, p. 424) Article based on AIAA Paper 88-2206 CP882
- G90-064 Comparison of Test Signals for Aircraft Frequency Domain Identification. Peter Young and Ronald J. Patton, University of York, England, UK (13, 3, p. 430) Article based on AIAA Paper 88-4349 CP8810
- G90-065 Reduced-Order Modeling and Controller Design for a High-Performance Helicopter. Mark Ekblad, *University of Minnesota* (13, 3, p. 439) Article based on AIAA Paper 88-4501
- G90-066 Design and Evaluation of a Cockpit Display for Hovering Flight. Ronald A. Hess and Peter J. Gorder, University of California, Davis (13, 3, p. 450) Article based on AIAA Paper 88-4495
- G90-067 Aeroservoelastic Tailoring for Lateral Control Enhancement. Terrence A. Weisshaar and Changho Nam, Purdue University (13, 3, p. 458) Article
- G90-068 Cooperative Synthesis of Control and Display Augmentation in Approach and Landing. Sanjay Garg and David K. Schmidt, *Purdue University* (13, 3, p. 466) Article based on AIAA Paper 88-4182 CP889
- **G90-069 Model for Human Use of Motion Cues in Vehicular Control.** Ronald A. Hess, *University of California, Davis* (13, 3, p. 476) Article
- **G90-070 Orbital Dynamics in a Stochastic Atmosphere.** J. de Lafontaine, European Space Research and Technology Centre, the Netherlands (13, 3, p. 483) Article
- G90-071 Maximum Orbit Plane Change with Heat-Transfer-Rate Considerations. J. Y. Lee and D. G. Hull, *University of Texas at Austin* (13, 3, p. 492) Article
- G90-072 Attitude Motion of a Nonattitude-Controlled Cylindrical Satellite. Charles K. Wilkinson, Textron Defense Systems (13, 3, p. 498) Article based on AIAA Paper 88-4223 CP8811
- G90-073 Three-Axis Attitude Determination via Kalman Filtering of Magnetometer Data. Mark L. Psiaki, Cornell University; François Martel and Parimal K. Pal, Ithaco, Inc. (13, 3, p. 506) Article

- G90-074 Redundancy Control of a Free-Flying Telerobot. John R. Spofford, Martin Marietta Astronautics Group; and David L. Akin, Massachusetts Institute of Technology (13, 3, p. 515) Article based on AIAA Paper 88-4094 CP889
- **G90-075 Sensor Placement in Structural Control.** H. Baruh and K. Choe, *Rutgers University* (13, 3, p. 524) Article based on AIAA Paper 88-4056 CP889
- G90-076 Artificial Intelligence-Based Model-Adaptive Approach to Flexible Structure Control. S. Hanagud, B. J. Glass and A. J. Calise, Georgia Institute of Technology (13, 3, p. 534) Article based on AIAA Paper 87-2457 CP878
- G90-077 Efficiency of Structure-Control Systems. H. Öz and K. Farag, Ohio State University; and V. B. Venkayya, Flight Dynamics Laboratory, Wright-Patterson AFB (13, 3, p. 545) Article
- G90-078 Three Parallel Computation Methods for Structural Vibration Analysis. Olaf Storaasli and Susan Bostic, NASA Langley Research Center; Merrell Patrick, Umesh Mahajan and Shing Ma, Duke University (13, 3, p. 555) Article based on AIAA Paper 88-2391 CP882
- G90-079 Explicit-Implicit Staggered Procedure for Multibody Dynamics Analysis. K. C. Park, J. C. Chiou and J. D. Downer, University of Colorado (13, 3, p. 562) Article
- G90-080 Misstatements of the Test for Positive Semidefinite Matrices. Thomas H. Kerr, Massachusetts Institute of Technology, Lincoln Laboratory (13, 3, p. 571) Engineering Note
- **G90-081 Estimating Projections of the Controllable Set.** Thomas L. Vincent and Zong Y. Wu, *University of Arizona* (13, 3, p. 572) Engineering Note
- G90-083 Early Development of Transit, The Navy Navigation Satellite System (HKT). Harold D. Black, Johns Hopkins University Applied Physics Laboratory (13, 4, p. 577) Article
- G90-084 Adaptive Guidance for an Aero-Assisted Boost Vehicle. Bandu N. Pamadi, Vigyan Research Associates, Inc.; Lawrence W. Taylor Jr. and Douglas B. Price, NASA Langley Research Center (13, 4, p. 586) Article based on AIAA Paper 88-4173 CP889
- G90-085 Near-Optimal Midcourse Guidance for Air-to-Air Missiles. P. K. A. Menon, Georgia Institute of Technology; and M. M. Briggs, Integrated Systems, Inc. (13, 4, p. 596) Article
- G90-086 Optimal Midcourse Guidance for Medium-Range Air-to-Air Missiles. Fumiaki Imado and Takeshi Kuroda, Mitsubishi Electric Corporation, Japan; and Susumu Miwa, Tokyo Denki University, Japan (13, 4, p. 603) Article based on AIAA Paper 88-4063 CP889
- G90-087 Optimal Heading Change with Minimum Energy Loss for a Hypersonic Gliding Vehicle. Anthony J. Calise and Gyoung H. Bae, Georgia Institute of Technology (13, 4, p. 609) Article
- G90-088 Linear-Quadratic-Regulator Pointing Control System for a High-Altitude Balloon Payload. John E. White and Jerry R. Etter, Sandia National Laboratories (13, 4, p. 615) Article based on AIAA Paper 88-4109 CP889
- G90-089 Synthesis of Finite-Interval H_{∞} Controllers by State-Space Methods. M. B. Subrahmanyam, Naval Air Development Center (13, 4, p. 624) Article

- G90-090 Effects of Biodynamic Coupling on the Human Operator Model. M. Idan, Stanford University; and S. J. Merhav, Technion—Israel Institute of Technology (13, 4, p. 630) Article
- G90-091 Analytical Model of the Rotation of an Artificial Satellite. E. Bois and J. Kovalevsky, Observatoire de la Côte d'Azur, France (13, 4, p. 638) Article
- G90-092 Analytical Models for Relative Motion Under Constant Thrust. J. Van der Ha and R. Mugellesi, European Space Agency, FRG (13, 4, p. 644) Article based on AIAA Paper 88-4300 CP8811
- G90-093 Two Nonlinear Control Approaches for Retrieval of a Thrusting Tethered Subsatellite. D. J. Pines and A. H. von Flotow, Massachusetts Institute of Technology; and D. C. Redding, Charles Stark Draper Laboratory (13, 4, p. 651) Article based on AIAA Paper 88-4171 CP889
- G90-094 Optimal Momentum Management Controller for the Space Station. J. W. Sunkel, NASA Johnson Space Center; and L. S. Shieh, University of Houston (13, 4, p. 659) Article based on AIAA Paper 89-3473 CP899
- G90-095 Parameter Identification of Aeroelastic Modes of Rotary Wings from Transient Time Histories. Ahmed Omar Amrani and Ronald Du Val, Advanced Rotorcraft Technology, Inc. (13, 4, p. 669) Article
- G90-096 Optimal Extraction of Structural Characteristics from Response Measurements. An-Chen Lee and Juhn-Horng Chen, National Chiao Tung University, Taiwan, ROC (13, 4, p. 675) Article
- G90-097 Pole/Zero Cancellations in Flexible Space Structures. Trevor Williams and Jer-Nan Juang, NASA Langley Research Center (13, 4, p. 684) Article based on AIAA Paper 88-4055 CP889
- G90-098 Simulation of Actively Controlled Spacecraft with Flexible Appendages. R. R. Ryan, *University of Michigan* (13, 4, p. 691) Article based on AIAA Paper 87-0478
- G90-099 Distributed Finite-Element Modeling and Control Approach for Large Flexible Structures. K. David Young, Lawrence Livermore National Laboratory, University of California (13, 4, p. 703) Article based on AIAA Paper 88-4085 CP889
- G90-100 Positioning and Active Damping of Flexible Beams. Thomas L. Vincent, Yeong Ching Lin and Shiv P. Joshi, University of Arizona (13, 4, p. 714) Article
- G90-101 Experimental Study of the Effects of Nonlinearities on Ground Resonance. George T. Flowers, Auburn University; and Benson H. Tongue, University of California, Berkeley (13, 4, p. 725) Article
- G90-102 Low-Frequency Response of Accelerometers for Observer Design in a Gravity Environment. M. A. Norris, Virginia Polytechnic Institute and State University; R. C. Thompson, Pennsylvania State University; and A. Das, Air Force Astronautics Laboratory, Edwards AFB (13, 4, p. 732) Article
- G90-103 Extension of Strapdown Attitude Algorithm for High-Frequency Base Motion. Jang G. Lee and Yong J. Yoon, Seoul National University, Korea; John G. Mark and Daniel A. Tazartes, Litton Systems, Inc. (13, 4, p. 738) Article based on AIAA Paper 88-4126 CP889

- G90-104 Optimizing Multihypothesis Diagnosis of Control-Actuator Failures in Linear Systems. Yakov Ben-Haim, *Technion—Israel Institute of Technology* (13, 4, p. 744) Article
- G90-105 Control for Energy Dissipation in Structures. S. P. Joshi, T. L. Vincent and Y. C. Lin, *University of Arizona* (13, 4, p. 751) Engineering Note based on AIAA Paper 88-2272 CP882
- G90-106 Optimal Coupling Ratio Selection for Flexible Appendage Actuators. John B. Stetson Jr., General Electric Company (13, 4, p. 754) Engineering Note
- G90-107 Reduction of Missile Navigation Errors by Roll Programming. Robert J. Fitzgerald, Raytheon Company (13, 4, p. 755) Engineering Note based on AIAA Paper 88-4090 CP889
- G90-108 Dynamics of Tethered Payloads with Deployment Rate Control. Arun K. Banerjee, Lockheed Missiles & Space Company (13, 4, p. 759) Engineering Note
- G90-109 Analysis of an Onboard Antenna Pointing Control System. Yoichi Kawakami, Hiroshi Hojo and Masazumi Ueba, Nippon Telegraph and Telephone Corporation, Radio Communication Systems Laboratories, Japan (13, 4, p. 762) Engineering Note based on AIAA Paper 88-4306 CP8811
- G90-110 Calculation of Stability Derivatives for Slender Bodies Using Boundary Element Method. Shinji Suzuki and Kizuki Fukuda, *University of Tokyo, Japan* (13, 4, p. 763) Engineering Note
- G90-111 Compressed Polynomial Approach for Onboard Ephemeris Representation. B. V. Sheela and P. Padmanabhan, Indian Space Research Organization Satellite Centre (13, 4, p. 765) Engineering Note
- G90-112 In Appreciation of Arthur E. Bryson, Jr. (Keynote Paper) Y. C. Ho, *Harvard University*; and J. L. Speyer, *University of California*, Los Angeles (13, 5, p. 770) Article
- G90-113 Orbit Determination Strategy and Accuracy for a Comet Rendezvous Mission. James K. Miller, Jet Propulsion Laboratory, California Institute of Technology; Connie J. Weeks, Loyola Marymount University; and Lincoln J. Wood, Jet Propulsion Laboratory, California Institute of Technology (13, 5, p. 775) Article based on AIAA Paper 89-0348
- G90-114 Aeroassisted Transfer Between Elliptical Orbits Using Lift Control. David Mishne, Rafael, Israel; Nahum Melamed and Josef Shinar, Technion—Israel Institute of Technology (13, 5, p. 785) Article based on AlAA Paper 88-4346 CP8810
- G90-115 Approximate Optimal Atmospheric Guidance Law for Aeroassisted Plane-Change Maneuvers. Jason L. Speyer and Edwin Z. Crues, *University of Texas at Austin* (13, 5, p. 792) Article based on AIAA Paper 88-4174 CP 889
- G90-116 Passive Homing Missile Guidance Law Based on New Target Maneuver Models. Jason L. Speyer and Kevin D. Kim, University of Texas at Austin; and Minjea Tahk, Korea Advanced Institute of Science and Technology (13, 5, p. 803) Article based on AIAA Paper 90-3378 CP909
- G90-117 Optimal Paths Through Downbursts. Yiyuan Zhao, University of Minnesota; and A. E. Bryson Jr., Stanford University (13, 5, p. 813) Article
- G90-118 Control of an Aircraft in Downbursts. Yiyuan Zhao, University of Minnesota; and A. E. Bryson Jr., Stanford University (13, 5, p. 819) Article

- G90-119 Helicopter Trim with Flap-Lag-Torsion and Stall by an Optimized Controller. David A. Peters, Mnaouar Chouchane and Mark Fulton, Georgia Institute of Technology (13, 5, p. 824) Article
- G90-120 System Identification Requirements for High-Bandwidth Rotorcraft Flight Control System Design. Mark B. Tischler, Aeroflightdynamics Directorate, U.S Army Aviation Research and Technology Activity, Ames Research Center (13, 5, p. 835) Article
- G90-121 Maximum Likelihood Tuning of a Vehicle Motion Filter. Thomas L. Trankle and Uri H. Rabin, Systems Control Technology (13, 5, p. 842) Article
- G90-122 Nonlinear Flight Control Design via Sliding Methods. J. Karl Hedrick and Swaminathan Gopalswamy, *University of California, Berkeley* (13, 5, p. 850) Article
- G90-123 Efficient Algorithm for Time-Optimal Control of a Two-Link Manipulator. Elke-Barbara Meier, Ball Aerospace Systems Division; and Arthur E. Bryson Jr., Stanford University (13, 5, p. 859) Article based on AIAA Paper 87-2263 CP878
- G90-124 Minimum-Time Pointing Control of a Two-Link Manipulator. Bong Wie, Arizona State University; Chien-Hsiung Chuang, University of Texas at Austin; and John Sunkel, NASA Johnson Space Center (13, 5, p. 867) Article based on AIAA Paper 88-4117 CP 889
- G90-125 Approach to Large Space Structure Control System Design Using Traditional Tools. P. Y. Chu, B. Wie, B. Gretz and C. Plescia, Ford Aerospace Corporation (13, 5, p. 874) Article
- G90-126 Transfer Function Analysis of a Flexible Toroidal Structure. Bong Wie, Arizona State University; and Arthur E. Bryson Jr., Stanford University (13, 5, p. 881) Article
- G90-127 Second-Order Algorithm for Optimal Model Order Reduction. A. E. Bryson Jr. and A. Carrier, Stanford University (13, 5, p. 887) Article
- **G90-128 Reliable Algorithm for Modal Decomposition.** Robert A. Walker and Arthur E. Bryson Jr., *Stanford University* (13, 5, p. 893) Article
- G90-129 Projection and Assembly Method for Multibody Component Model Reduction. Douglas E. Bernard, Jet Propulsion Laboratory, California Institute of Technology (13, 5, p. 905) Article
- **G90-130 Fixed Interval Smoothing: Revisited.** Stephen Ralph McReynolds, *General Electric Company* (13, 5, p. 913) Article
- G90-131 Optimal Autorotational Descent of a Helicopter with Control and State Inequality Constraints. Allan Y. Lee, *Jet Propulsion Laboratory, California Institute of Technology* (13, 5, p. 922) Engineering Note
- **G90-132 How to Perform Differentiations on Matrices.** Jerry L. Sun, *Systems Control Technology, Inc.* (13, 5, p. 924) Engineering Note
- G90-133 Artificial Neural Networks, Back Propagation, and the Kelley-Bryson Gradient Procedure. Stuart E. Dreyfus, *University of California, Berkeley* (13, 5, p. 926) Engineering Note
- G90-134 Linear Helicopter Trackers Using Attitude Measurements. John D. Schierman and Dominick Andrisani II, Purdue University (13, 6, p. 929) Article

- G90-135 Three-Dimensional Trajectory Optimization for Aircraft. Robert L. Schultz, *Honeywell, Inc.* (13, 6, p. 936) Article
- G90-136 Inertial Energy Distribution Error Control for Optimal Wind-Shear Penetration. K. Krishnakumar and J. E. Bailey, *University of Alabama* (13, 6, p. 944) Article based on AIAA Paper 89-0016
- G90-137 Two-Time-Scale Longitudinal Control of Airplanes Using Singular Perturbation. Fu-Chuang Chen and Hassan K. Khalil, *Michigan State University* (13, 6, p. 952) Article based on AIAA Paper 88-4112 CP889
- G90-138 Proposal and Flight Evaluation of a New Pitch-Mode Decoupling System. Masaki Komoda, Tokyo Metropolitan Institute of Technology, Japan; Nagakatu Kawahata, Nihon University, Japan; Yukichi Tsukano and Takatsugu Ono, National Aerospace Laboratory, Japan (13, 6, p. 961) Article based on AIAA Paper 88-4605 CP8812
- G90-139 Model Following Reconfigurable Flight Control System for the AFTI/F-16. W. D. Morse, Sandia National Laboratories; and K. A. Ossman, Ohio State University (13, 6, p. 969) Article
- G90-140 Observability Analysis for Target Maneuver Estimation via Bearing-Only and Bearing-Rate-Only Measurements. Stephan A. R. Hepner and Hans P. Geering, Swiss Federal Institute of Technology (13, 6, p. 977) Article based on AIAA Paper 87-2382 CP878
- G90-141 Periodic-Disturbance Accommodating Control of the Space Station for Asymptotic Momentum Management. Wayne Warren and Bong Wie, Arizona State University; and David Geller, NASA Johnson Space Center (13, 6, p. 984) Article based on AIAA Paper 89-3476 CP899
- G90-142 Multibody Interaction Effects on Space Station Attitude Control and Momentum Management. Bong Wie, Arizona State University; Anren Hu and Ramendra Singh, Dynacs Engineering Company, Inc. (13, 6, p. 993) Article based on AIAA Paper 89-3514 CP899
- G90-143 Spillover Stabilization of Large Space Structures. Eva A. Czajkowski, Virginia Polytechnic Institute and State University; Andre Preumont, Free University of Brussels, Belgium; and Raphael T. Haftka, Virginia Polytechnic Institute and State University (13, 6, p. 1000) Article based on AIAA Paper 88-2484 CP883
- G90-144 Eigenstructure Assignment with Gain Suppression Using Eigenvalue and Eigenvector Derivatives. Kenneth M. Sobel and Wangling Yu, City College of New York; and Frederick J. Lallman, NASA Langley Research Center (13, 6, p. 1008) Article based on AIAA Paper 88-4101 CP889
- G90-145 Pulse-Modulated Control Synthesis for a Flexible Spacecraft. Tobin C. Anthony and Bong Wie, University of Texas at Austin; and Stanley Carroll, NASA Marshall Space Flight Center (13, 6, p. 1014) Article based on AIAA Paper 89-3433 CP898
- G90-146 Hybrid Scaled Structural Dynamic Models and Their Use in Damping Prediction. Edward F. Crawley, Jonathan L. Sigler and Marthinus C. van Schoor, Massachusetts Institute of Technology; and Marc J. Gronet, Lockheed Missile & Space Company (13, 6, p. 1023) Article
- G90-147 Efficient Eigenvalue Assignment for Large Space Structures. Peiman G. Maghami and Jer-Nan Juang, NASA Langley Research Center (13, 6, p. 1033) Article based on AIAA Paper 89-1393 CP891

- G90-148 Finite Element Modeling of Frequency-Dependent Material Damping Using Augmenting Thermodynamic Fields. George A. Lesieutre, SPARTA, Inc.; and D. Lewis Mingori, University of California, Los Angeles (13, 6, p. 1040) Article based on AIAA Paper 89-1380 CP891
- G90-149 Identification, Reduction, and Refinement of Model Parameters by the Eigensystem Realization Algorithm. Ciann-Dong Yang, National Cheng Kung University, Taiwan, ROC; and Fang-Bo Yeh, Tunghai University, Taiwan, ROC (13, 6, p. 1051) Article
- G90-150 Lateral Stability of Gliding Parachutes. Peter Crimi, Textron Defense Systems (13, 6, p. 1060) Article
- G90-151 Orthogonal Series Generalized Likelihood Ratio Test for Failure Detection and Isolation. Steven R. Hall, Massachusetts Institute of Technology; and Bruce K. Walker, University of Cincinnati (13, 6, p. 1064) Article
- **G90-152 System Failure Isolation in Dynamic Systems.** Dan T. Horak, *Allied-Signal Aerospace Company* (13, 6, p. 1075) Article
- G90-153 Steering Law Design for Redundant Single-Gimbal Control Moment Gyroscopes. Nazareth S. Bedrossian, Joseph Paradiso and Edward V. Bergmann, Charles Stark Draper Laboratory, Inc.; and Derek Rowell, Massachusetts Institute of Technology (13, 6, p. 1083) Article
- **G90-154 Preferred Gimbal Angles for Single Gimbal Control Moment Gyros.** S. R. Vadali, H-S. Oh and S. R. Walker, *Texas A&M University* (13, 6, p. 1090) Article based on AIAA Paper 89-3477 CP899
- G90-155 Redundant Single Gimbal Control Moment Gyroscope Singularity Analysis. Nazareth S. Bedrossian, Joseph Paradiso and Edward V. Bergmann, Charles Stark Draper Laboratory, Inc.; and Derek Rowell, Massachusetts Institute of Technology (13, 6, p. 1096) Article
- **G90-156 Guidance and Control for Cooperative Tether-Mediated Orbital Rendezvous.** Dale G. Stuart, *TRW Space and Technology Group* (13, 6, p. 1102) Article based on AIAA Paper 88-4170 CP889
- G90-157 Universal Formulation for the Perturbed Two-Body Problem. Pedro E. Zadunaisky, Comision Nacional de Investigaciones Espaciales, Argentina; and Claudia M. Giordano, Universidad Nacional de La Plata, Argentina (13, 6, p. 1109) Article

- G90-158 Robust Control Design with Real-Parameter Uncertainty and Unmodeled Dynamics. Hsi-Han Yeh, Siva S. Banda and Sharon A. Heise, Flight Dynamics Laboratory, Wright-Patterson AFB; and Andrew C. Bartlett, University of Massachusetts (13, 6, p. 1117) Article
- G90-159 Optimal Reduced-Order Observer-Estimators. Wassim M. Haddad, Florida Institute of Technology; and Dennis S. Bernstein, Harris Corporation (13, 6, p. 1126) Article
- G90-160 Qualitative Study of a Planar Pursuit Evasion Game in the Atmosphere. M. Guelman, Rafael, Ministry of Defense, Israel; J. Shinar and A. Green, Technion—Israel Institute of Technology (13, 6, p. 1136) Article
- G90-161 Game Theory for Automated Maneuvering During Air-to-Air Combat. Fred Austin, Giro Carbone, Michael Falco and Hans Hinz, Grumman Corporate Research Center; and Michael Lewis, NASA Ames Research Center (13, 6, p. 1143) Article based on AIAA Paper 87-2393 CP878
- **G90-162 Equations of Motion of a Rotating Rigid Body.** R. A. Broucke, *University of Texas at Austin* (13, 6, p. 1150) Engineering Note
- **G90-163 Navigation Path Planning for Autonomous Aircraft: Voronoi Diagram Approach.** Jimmy Krozel and Dominick Andrisani II, *Purdue University* (13, 6, p. 1152) Engineering Note
- G90-164 Approximation of Analog Controllers for Sampled-Data Systems. Ricardo S. Sánchez Peña, Instituto de Investigaciones Aeronáuticas y Espaciales, Centro Espacial San Miguel, Argentina (13, 6, p. 1155) Engineering Note
- G90-165 State-Variable Models of Structures Having Rigid-Body Modes. Roy R. Craig Jr., Tsu-Jeng Su and Zhenhua Ni, University of Texas at Austin (13, 6, p. 1157) Engineering Note
- G90-166 Stability Condition for Flexible Structure Control with Mode Residualization. Chun-Liang Lin and Fei-Bin Hsiao, National Cheng Kung University, Taiwan, ROC; and Bor-Sen Chen, National Tsing Hua University, Taiwan, ROC (13, 6, p. 1160) Engineering Note
- G90-167 Effect of Thrust/Speed Dependence on Long-Period Dynamics in Supersonic Flight. Gottfried Sachs, Technische Universität München, Germany (13, 6, p. 1163) Engineering Note
- G90-168 Generalized Gradient Algorithm for Trajectory Optimization. Yiyuan Zhao, *University of Minnesota*; A. E. Bryson Jr. and R. Slattery, *Stanford University* (13, 6, p. 1166) Engineering Note