

Entry Vehicles and Landers

Orbital Decay Due to Drag in an Exponentially Varying Atmosphere G80-111

Lunar and Interplanetary Trajectories

A New Method for Optimizing Multiple-Flyby Trajectories G81-103
 Floquet Reference Solutions for the Lunar Theory and the Jovian Moons G81-102
 Optimal Control via Mathematical Programming G81-071
 Navigation Accuracy Analysis for an Ion Drive Flyby of Comet Halley G81-060
 A New Trajectory Concept for Exploring the Earth's Geomagnetic Tail G81-032

Meteoroid and Radiation Protection

A New Method for Optimizing Multiple-Flyby Trajectories G81-103

Missions and Economics

A New Trajectory Concept for Exploring the Earth's Geomagnetic Tail G81-032

Navigation, Guidance, and Flight-Path Control

Navigation Accuracy Analysis for an Ion Drive Rendezvous for an Ion Drive Rendezvous with Comet Tempel 2 G81-093
 Identity Between INS Position and Velocity Error Models G81-092
 An Improved Approach to Predicting Pilot Rating Behavior G81-084
 Reliability and Accuracy Prediction for a Redundant Strapdown Navigator G81-083
 Optimal Control via Mathematical Programming G81-071
 Navigation Accuracy Analysis for an Ion Drive Flyby of Comet Halley G81-060
 Expansion of the Third-Body Disturbing Function G81-054
 Simultaneous Eccentricity and Drift Rate Control G81-049

Sequential Orbit Determination with Auto-Correlated Gravity Modeling Errors G81-048

A New Trajectory Concept for Exploring the Earth's Geomagnetic Tail G81-032
 Optimization of Earth Sensor Thresholding Techniques G81-024
 Geometric Dilution of Precision in Global Positioning System Navigation G81-016
 Stability of a Precision Attitude Determination Scheme G80-112
 Sequential Estimation Algorithm Using a Continuous UDU^T Covariance Factorization G80-057

Signatures and Tracking

Operational Experience on OTS-2 G81-087

Simulation

Three-Dimensional Response Characteristics for Spacecraft with Deploying Flexible Appendages G81-111
 Formulation of Equations of Motion for Complex Spacecraft G80-017

Space Station Systems, Manned

Stability of an Orbiting Ring G81-033

Systems

In-Flight Magnetometer Calibration and Attitude Determination for Near-Earth Spacecraft G81-082
 On-Orbit Control System Performance of the HEAO-2 Observatory G81-026
 Stability of a Precision Attitude Determination Scheme G80-112
 Sequential Estimation Algorithm Using a Continuous UDT^T Covariance Factorization G80-057

Structural Mechanics and Materials**Structural Design**

Wind-Tunnel Investigation of Active Controls Technology Applied to a DC-10 Derivative G81-085

Structural Dynamics

Three-Dimensional Response Characteristics for Spacecraft with Deploying Flexible Appendages G81-111
 Control of a Large Flexible Platform in Orbit G81-110
 Sensitivity of Modal-Space Control to Non-ideal Conditions G81-090
 Attitude Stabilization of Large Flexible Spacecraft G81-089
 Generic Model of a Large Flexible Space Structure for Control Concept Evaluation G81-088
 Wind-Tunnel Investigation of Active Controls Technology Applied to a DC-10 Derivative G81-085
 Stability of Large Space Structure Control Systems Using Positivity Concepts G81-078
 Control of Large Flexible Space Structures Using Pole Placement Design Techniques G81-047
 Stability of an Orbiting Ring G81-033
 Optimal Control of Damped Flexible Gyroscopic System G81-027
 Sensing the Position and Vibration of Spacecraft Structures G81-025
 Deformable Mirror Surface Control Techniques G81-005
 Optimal Local Control of Flexible Structures G81-004

Structural Stability

Attitude Stabilization of Large Flexible Spacecraft G81-089
 Wind-Tunnel Investigation of Active Controls Technology Applied to a DC-10 Derivative G81-085
 Stability of Large Space Structure Control Systems Using Positivity Concepts G81-078

Structural Statics

Sensing the Position and Vibration of Spacecraft Structures G81-025

Author Index

Ackermann, J., G81-104
 Albanes, W., G81-022
 Alford, R. L., G80-054
 Alford, R. L., G80-054
 Anderson, G. M., G81-020
 Anderson, R. H., G81-024, G81-025
 Arbel, A., G81-077
 Ashkenas, I. L., G81-029
 Asner Jr., B. A., G81-045
 Axelby, G. S., G81-091
 Bainum, P. M., G81-110
 Balakrishna, S., G81-068
 Balas, M., G81-089
 Ballard, J., G81-043
 Bar-Itzhack, I. Y., G81-062, G81-081, G81-092
 Barmish, B. R., G81-070
 Barthelemy, J.-F.M., G81-090
 Baruh, H., G81-027
 Benhabib, R. J., G81-078
 Berkery, E. A., G81-026
 Bhattacharyya, K. C., G80-112

Bhattacharyya, K.C., G81-094
 Bien, Z., G81-002
 Bierman, G. J., G80-057
 Bradley, J. W., G81-042
 Breakwell, J. A., G81-076
 Breakwell, J. V., G81-033, G81-051
 Broucke, R., G81-054
 Browne, J.C., G81-013
 Bruckner, J. M. H., G81-105
 Buchanan, H. J., G81-044
 Buholz, N. E., G81-025
 Buratti, A., G81-037
 Byrnes, D. V., G81-103
 Calise, A. J., G81-064
 Carrington, C. K., G81-059
 Chaffin, D. E., G81-080
 Chakravarty, A. J. M., G80-111
 Chakravarty, A. J. M., G81-096
 Chiarappa, D. J., G81-005
 Chopra, I., G81-043
 Chyung, D. H., G81-002
 Claysmith, C. R., G81-005

Contensou, P., G81-039
 Daly, K. C., G81-083
 D'Amario, L. A., G81-103
 DeHoff, R. L., G81-008
 Deprit, A., G81-099
 Deprit, A., G81-034
 Didaleusky, D. G. J., G81-067
 Dougherty, H. J., G81-063
 Draper, C. S., G81-074
 Dunham, D. W., G81-032
 Dunn, H. J., G81-066
 Erzberger, H., G81-040
 Fagg, A. S., G81-087
 Fang, B. T., G81-016
 Farquhar, R. W., G81-032
 Farrell, J. L., G81-091
 Ferguson Jr., J. R., G81-014
 Forrest, R. D., G81-106
 Franklin, S. N., G81-104
 Fredricks, D. A., G81-070
 Fusco, G., G81-037
 Gai, E., G81-083

Galaboff, Z. J., G81-044
 Garrard, W. L., G81-066
 Gartrell, C. F., G81-049
 Gerber, M. A., G81-079
 Gerdes, R. M., G81-106
 Getz, W. M., G81-003
 Ginter, S., G81-089
 Glandorf, D. R., G81-057
 Good, D. I., G81-013
 Graham, D., G81-015, G81-058
 Grepper, P. O., G81-041
 Grubin, C., G80-017
 Grunwald, A. J., G81-107
 Gupta, N.K., G81-077
 Hablani, H. B., G81-088
 Hackney, R. D., G81-008
 Haeussermann, W., G81-038
 Hallauer Jr., W. L., G81-090
 Hamer, H. A., G81-110
 Hargraves, C., G81-065
 Harrison, J. V., G81-083
 Hatfield, J. J., G81-107

- Hathaway, W. H., G81-009
 Hattis, P. D., G81-086
 Hegg, D. R., G81-109
 Heiling, C. I., G81-024
 Heimbaugh, R. M., G81-085
 Hess, R. K., G81-030
 Hofmann, L. G., G81-067
 Hoh, R. H., G81-029
 Hopkins, M. S., G81-044
 Huang, C.-C., G81-025
 Hubert, C., G81-028
 Huff, R. W., G81-030
 Hughes, P. C., G81-046
 Huguenin, F. E., G81-041
 Humphrey, C. H., G81-105
 Iliff, K. W., G81-035
 Iwens, R. P., G81-078
 Jackson, R. L., G81-078
 Jarmark, B. S. A., G81-051
 Johnson, C. D., G81-021
 Johnson, F., G81-065
 Juang, J. N., G81-047
 Junkins, J. L., G81-059
 Kane, T. R., G80-017
 Kane, T. R., G80-017
 Karatsinides, S. P., G81-053
 Knobe, B., G81-006
 Krinik, A. C., G81-093
 Krishna, R., G81-110
 Kroncke, G. T., G81-014
 Lamont, G. B., G81-061
 Lebacqz, J. V., G81-106
 Lehtinen, B., G81-008
 Lerner, G. M., G81-082
 Levinson, D. A., G80-017
 Levinson, D. A., G80-017
 Lips, K. W., G81-111
 Liu, J. J. F., G80-054
 Liu, J. J. F., G80-054
 MacLauchlan, J. B., G81-087
 Mahesh, J. K., G81-066
 Maine, R. E., G81-035
 Marchal, C., G81-039
 Marmon, W. C., G81-023
 McDowell, J. L., G81-100
 McGee, L. A., G81-069
 McKern, R., G81-112
 McLean, J. D., G81-040
 McRuer, D., G81-058
 Medan, Y., G81-081
 Meirovitch, L., G81-027
 Mermagen, W. H., G81-042
 Merrill, R. K., G81-106
 Merz, A. W., G81-051, G81-069
 Modi, V. J., G81-111
 Moomaw, R. F., G81-030
 Murphy, C. H., G81-010, G81-056, G81-075
 Musoff, H., G81-112
 Nesline, F. W., G81-012, G81-050
 Oh, S. D., G81-011
 Okomoto, A. Y., G81-024
 Osder, S., G81-007
 Oskay, V., G81-042
 Pachter, M., G81-003
 Paris, S., G81-065
 Pastrick, H. L., G81-019
 Paulk Jr., C. H., G81-069
 Pelka, E. J., G81-063
 Peters, J. G., G80-057
 Peters, J. G., G80-057
 Platus, D. H., G81-108
 Porat, B., G81-062
 Powers, W. F., G81-053
 Ramamoorthy, P., G81-071
 Reddy, A.S.S.R., G81-110
 Reid, J. G., G81-080
 Rettie, I., G81-065
 Rice, R. B., G81-047
 Robertson, J. B., G81-107
 Rodden, J. J., G81-063
 Rooney, R. H., G81-070
 Rose, R. E., G81-026
 Schaechter, D. B., G81-004
 Schmidt, S. F., G81-001, G81-069
 Seltzer, S. M., G81-019, G81-045
 Shao-hua, Y., G81-101
 Shapiro, E. Y., G81-070
 Sheela, B. V., G81-071
 Shirley, W. A., G81-085
 Shuster, M. D., G81-011, G81-082
 Silverthorn, J. T., G81-080
 Skelton, R. E., G81-036, G81-046
 Sng, K. B., G80-071
 Sorensen, J. A., G81-055
 Stanford, R. H., G81-103
 Steck, S. A., G81-069
 Stone, C. R., G81-066
 Sturgeon, W. R., G81-031
 Tanaka, K., G81-084
 Tapley, B. D., G80-057
 Thibodeaux, J. J., G81-068
 Toler, P. L., G81-061
 Tripathi, A. R., G81-013
 Urnes, J. M., G81-030
 van Woerkom, P. T., G80-111
 Vergez, P. L., G81-113
 Warren, M. E., G81-019
 Waters, M. H., G81-055
 Wauer, J. C., G81-105
 Wells, B. H., G81-050
 Whitbeck, R. F., G81-052, G81-067
 Whyte, R. H., G81-009
 Wiesel, W. E., G81-102
 William, C. E., G81-059
 Williamson Jr., W. E., G81-100
 Winchenbach, G. L., G81-009
 Winther, B. A., G81-085
 Wood, L. J., G80-112, G81-060, G81-093
 Wright, J. R., G81-048
 Wu, Y. W., G81-047
 Yeo, B. P., G80-071
 Young, W. D., G81-013
 Zarchan, P., G81-012, G81-050
 Zimmerman, H. E., G81-024

Chronological Index

G80-017 Formulation of Equations of Motion for Complex Spacecraft. Thomas R. Kane, *Stanford University*; and David A. Levinson, *Lockheed Palo Alto Research Laboratory* (JGC 3, 2, p. 99) Survey Paper

Technical Comment by Carl Grubin, *Teledyne Systems Company* (JGC 4, 1, p. 94)

Reply (JGC 4, 1, p. 95)

G80-054 Semianalytic Theory for a Close-Earth Artificial Satellite. J.J.F. Liu, *Headquarters Aerospace Defense Command*; and R.L. Alford, *Northrop Services, Inc.*, (JGC 3, 4, p. 304) Article based on AIAA Paper 79-0123

Erratum (JGC 4, 5, p. 576)

G80-057 Sequential Estimation Algorithm Using a Continuous UDU^T Covariance Factorization. B.D. Tapley and J.G. Peters, *The University of Texas* (JGC 3, 4, p. 326) Article based on AIAA Paper 78-1428

Technical Comment by Gerald J. Bierman, *Factorized Estimation Applications, Inc.* (JGC 4, 4, p. 444)

Reply (JGC 4, 4, p. 446)

G80-111 Orbital Decay Due to Drag in an Exponentially Varying Atmosphere. Abhijit J.M. Chakravarty, *University of Washington* (JGC 3, 6, p. 592) Engineering Note

Technical Comment by Paul Th. L.M. van Woerkom, *National Aerospace Laboratory NLR (The Netherlands)* (JGC 4, 5, p. 574)

Reply (JGC 4, 5, p. 576)

G80-112 Stability of a Precision Attitude Determination Scheme. K.C. Bhattacharyya, *Vikram Sarabhai Space Centre* (JGC 3, 6, p. 586) Engineering Note

Technical Comment by Lincoln J. Wood, *Jet Propulsion Laboratory, California Institute of Technology* (JGC 4, 5, p. 573)

Reply (JGC 4, 5, p. 574)

G81-001 The Kalman Filter: Its Recognition and Development for Aerospace Applications (History of Key Technologies). Stanley F. Schmidt, *Analytical Mechanics Associates, Inc.* (JGC 4, 1, p. 4) Article

G81-002 Rendezvous of Controlled Systems with Time-Delay. Zeungnam Bien, *Korea Advanced Institute of Science*; and Dong H. Chyung, *The University of Iowa* (JGC 4, 1, p. 8) Article

G81-003 Capturability in a Two-Target "Game of Two Cars". Wayne M. Getz and Meir Pachter, *National Research Institute for Mathematical Sciences of the CSIR* (JGC 4, 1, p. 15) Article

G81-004 Optimal Local Control of Flexible Structures. David B. Schaechter, *Jet Propulsion Laboratory, California Institute of Technology* (JGC 4, 1, p. 22) Article based on AIAA Paper 79-1740 CP7910

G81-005 Deformable Mirror Surface Control Techniques. Daniel J. Chiarappa and Charles R. Claysmith, *General Dynamics Convair Division* (JGC 4, 1, p. 27) Article based on AIAA Paper 79-1757 CP7910

G81-006 Flight Languages: Ada vs HAL/S. Bruce Knobe, *Intermetrics, Inc.* (JGC 4, 1, p. 35) Article based on AIAA Paper 79-1988 CP7913