1991 Journal of Guidance, Control, and Dynamics Index

How to Use the Index

In the Subject Index, pages 1330–1336, each technical paper is listed under a maximum of three appropriate headings. Note the number in boldface type following each paper title, and use that number to locate the paper in the Chronological Index. The Author Index, pages 1336–1337, lists all authors associated with a given technical paper. The locating numbers are identical to those in the Subject Index. The Chronological Index, pages 1338–1344, lists all papers by their unique code numbers. This listing contains titles, authors and their affiliations, and volume, issue number, and page where the paper appeared. It also gives the AIAA paper number, if any, on which the article was based, as well as the "CP" or conference volume number if the paper was published in a bound collection of meetings papers. Comments, Replies, and Errata are listed directly beneath the paper to which they refer. If the paper to which they refer was published prior to 1991, that paper also will appear in both the Subject and Chronological Indexes. Authors of Comments also are listed in the Author Index.

Subject Index

Aircraft Technology, Conventional, STOL/VTOL

Aerodynamics

Application of Aeroservoelastic Modeling
Using Minimum-State Unsteady Aerodynamic Approximations G91-188
Evolution of Airplane Stability and Control:
A Designer's Viewpoint (HKT) G91-071

Aeroelasticity and Aeroservoelasticity

Helicopter Air Resonance Modeling and Suppression Using Active Control

Application of Aeroservoelastic Modeling
Using Minimum-State Unsteady Aerodynamic Approximations
G91-188
Structure (Control Design Synthesis of Active

Structure/Control Design Synthesis of Active Flutter Suppression System by Goal Programming G91-187

Numerical and Literal Aeroelastic-Vehicle-Model Reduction for Feedback Control Synthesis G91-140 Controllability and Observability of Gyro-

elastic Vehicles Aerospace Plane

Adaptable Method of Managing Jets and Aerosurfaces for Aerospace Vehicle Control G91-006

Civil Missions and Transportation

Design and Evaluation of an Air Traffic Control Final Approach Spacing Tool

Communication and Air Traffic Control

Design and Evaluation of an Air Traffic Control Final Approach Spacing Tool 691-125

Flight Control Integration

Retrospective Essay on Nonlinearities in Aircraft Flight Control (HKT) G91-167

Flight Mechanics

Generalized Technique for Inverse Simulation Applied to Aircraft Maneuvers

G91-137

G91-133

Flight Operations

Analytical Prediction of Height-Velocity
Diagram of a Helicopter Using Optimal
Control Theory G91-063

Ground Support

Parameter Insensitive Control Utilizing Eigenspace Methods G91-181

Landing Dynamics

Optimal Aircraft Performance During Microburst Encounter G91-061

Man/Machine Interface

Adaptive Suppression of Biodynamic Interference in Helmet-Mounted Displays and Head Teleoperation G91-177 Superimposed Perspective Visual Cues for Helicopter Hovering Above a Moving Ship Deck G91-091

Performance

Roll-Performance Criteria for Highly Augmented Aircraft

Dynamic Decrease of Drag by Optimal
Periodic Control

G91-128

G91-128

Rotorcraft

Fidelity

Time-Periodic Control of a Multiblade Helicopter G91-192 Helicopter Air Resonance Modeling and Suppression Using Active Control

Nonlinear Control of a Twin-Lift Helicopter Configuration G91-190 Flying Quality Analysis and Flight Evaluation of a Highly Augmented Combat Rotorcraft G91-141 Identifiability of Helicopter Models Incorporating Higher-Order Dynamics G91-124 Application of Multiple-Input/Single-Output Analysis Procedures to Flight Test Data G91-090

Analytical Prediction of Height-Velocity
Diagram of a Helicopter Using Optimal
Control Theory G91-063
Closed-Loop Assessment of Flight Simulator

G91-024

Simulation

Statistical Linearization for Multi-Input/
Multi-Output Nonlinearities G91-196
Covariance Analysis Algorithm for Interconnected Systems G91-059
Closed-Loop Assessment of Flight Simulator
Fidelity G91-024

STOL/VTOL/STOVL

Superimposed Perspective Visual Cues for Helicopter Hovering Above a Moving Ship Deck G91-091
Stability Augmentation and Control Decoupling for the Airborne Remotely Operated Device G91-022

Testing, Flight and Ground

Constrained Eigensystem Realization Algorithm for Lightly Damped Distributed Structures G91-149
Application of Multiple-Input/Single-Output Analysis Procedures to Flight Test Data G91-1990

Vibration

Adaptive Suppression of Biodynamic Interference in Helmet-Mounted Displays and Head Teleoperation G91-177
Compensating Sampling Errors in Stabilizing Helmet-Mounted Displays Using Auxiliary Acceleration Measurements G91-158
Jacobi Method for Unsymmetric Eigenproblems G91-096

Weather Hazards

Optimal Aircraft Performance During Microburst Encounter G91-061

Energy

Solar Power

Orbital Motion Under Continuous Radial Thrust G91-094

Fluid Dynamics

Computational Fluid Dynamics

Explicit Exponential Method for the Integration of Stiff Ordinary Differential Equations G91-184

Guidance, Control, and Dynamics Technology

Aircraft Dynamics

Roll-Performance Criteria for Highly Augmented Aircraft G91-189
Generalized Technique for Inverse Simulation Applied to Aircraft Maneuvers

G91-137

Identifiability of Helicopter Models Incorporating Higher-Order Dynamics G91-124
National Aerospace Plane Longitudinal
Long-Period Dynamics G91-026
Identification of Time Delays in Flight
Measurements G91-017

Aircraft Guidance

Rapid Near-Optimal Aerospace Plane Trajectory Generation and Guidance

G91-178

Retrospective Essay on Nonlinearities in Aircraft Flight Control (HKT) G91-167 Precise Flight-Path Control Using a Predictive Algorithm G91-139

Design of a Total Energy Control Autopilot Using Constrained Parameter Optimization G91-138

Dynamic Decrease of Drag by Optimal
Periodic Control

G91-128

Ascent Performance of an Air-Breathing Horizontal-Takeoff Launch Vehicle

G91-123

Onboard Automatic Aid and Advisory for Pilots of Control-Impaired Aircraft

G91-122

Optimal Trajectory Synthesis for Terrain-Following Flight G91-120

Integration of Four-Dimensional Guidance with Total Energy Control System

G91-080

Application of Total Energy Control for High-Performance Aircraft Vertical Transitions 691-062

Application of Singular Perturbation Methods for Three-Dimensional Minimum-Time Interception G91-051

Aircraft Stability and Control

Time-Periodic Control of a Multiblade Helicopter Nonlinear Control of a Twin-Lift Helicopter Configuration G91-190 Application of Stochastic Robustness to Aircraft Control Systems G91-186 Flying Quality Analysis and Flight Evaluation of a Highly Augmented Combat Rotorcraft G91-141 Numerical and Literal Aeroelastic-Vehicle-Model Reduction for Feedback Control G91-140 Synthesis Generalized Technique for Inverse Simulation Applied to Aircraft Maneuvers G91-137 Error Dynamics and Perfect Model Follow-

Error Dynamics and Perfect Model Following with Application to Flight Control G91-136

Controllability and Observability of Gyroelastic Vehicles G91-133 Assigning Controllability and Observability

Gramians in Feedback Control G91-132
Critical Mode Interaction in the Presence of
External Random Excitation G91-115
Multistage Design of an Optimal Momentum

Multistage Design of an Optimal Momentum

Management Controller for the Space
Station G91-072

Evolution of Airplane Stability and Control: A Designer's Viewpoint (HKT) G91-071 Analytical Prediction of Height-Velocity
Diagram of a Helicopter Using Optimal
Control Theory
G91-063

Near-Minimum-Time Control of Distributed Parameter Systems: Analytical and Experimental Results G91-057

Optimal Rigid-Body Motions G91-054 Approach to Robust Control Systems Design G91-032

National Aerospace Plane Longitudinal Long-Period Dynamics G91-026 Technique for Predicting Longitudinal Pilot-

Induced Oscillations G91-025
New Technique for Aircraft Flight Control

Reconfiguration G91-023
Stability Augmentation and Control Decoupling for the Airborne Remotely Op-

erated Device G91-022
High Performance Linear-Quadratic and
H-Infinity Designs for a "Supermaneuverable" Aircraft G91-020

Robust Control Design with Real-Parameter Uncertainty and Unmodeled Dynamics

G90-158
Improved Time-Domain Stability Robustness Measures for Linear Regulators

G89-092

Astrodynamics

Optimal In-Plane Orbital Evasive Maneuvers
Using Continuous Low Thrust Propulsion
G91-198

Constant Covariance in Local Vertical Coordinates for Near-Circular Orbits

Orbital Dynamics of the Hanging Tether Interferometer G91-193
Dynamics of a Tethered Satellite Subjected to Aerodynamic Forces G91-172
Guidance for Asteroid Rendezvous G91-164

True Anomaly Approximation for Elliptical Orbits G91-159 Approach for Targeting Landers and Penetrators Using Orbital Optical Navigation

G91-143
Generalized Covariance Analysis for Partially Autonomous Deep Space Missions
G91-142

Application of Encke's Method to Long Arc Orbit Determination Solutions G91-099 Fast Orbit Propagator for Graphical Display G91-068

Mission Function Control of Tethered Subsatellite Deployment/Retrieval: In-Plane and Out-of-Plane Motion G91-067 Nonlinear Dynamical Model of Relative

Motion for the Orbiting Debris Problem
G91-064

Star Pattern Identification Aboard an Inertially Stabilized Spacecraft G91-036 Satellite Relocation by Tether Deployment G91-030

Contribution of Zonal Harmonics to Gravitational Moment G91-029

Reduced-Dynamic Technique for Precise Orbit Determination of Low Earth Satellites G91-003

Continuous Global N-Tuple Coverage with (2N + 2) Satellites G91-002

Avionics Systems

Autonomously Aided Strapdown Attitude Reference System G91-176 Compensating Sampling Errors in Stabilizing Helmet-Mounted Displays Using Auxiliary Acceleration Measurements G91-158

Computer Science

Fault-Tolerant Parallel Processor G91-079

Control System Design

Optimal Feedback Gains for Three-Dimensional Large Angle Slewing of Spacecraft
G91-195

Time-Periodic Control of a Multiblade Helicopter G91-192 Helicopter Air Resonance Modeling and

Suppression Using Active Control

G91-191
Nonlinear Control of a Twin-Lift Helicopter
Configuration G91-190
Application of Stochastic Robustness to

Aircraft Control Systems G91-186 Homotopy Approach to Optimal, Linear Quadratic, Fixed Architecture Compen-

sation G91-183
Robust Non-Minimum-Phase Compensation
for a Class of Uncertain Dynamical Systems G91-179

Autonomously Aided Strapdown Attitude Reference System G91-176 Symbolic Computer Language for Multibody

Symbolic Computer Language for Multibody Systems G91-175 Robust H_{∞} Control Design for the Space

Station with Structured Parameter Uncertainty G91-170
Retrospective Essay on Nonlinearities in

Aircraft Flight Control (HKT) G91-167
Stabilization via Dynamic Output Feedback:
A Numerical Approach G91-165

Linear Quadratic Regulator Approach to the Stabilization of Matched Uncertain Linear Systems G91-162

Optimal Nonlinear Compensator G91-155
Stability of Second-Order Multidimensional
Linear Time-Varying Systems G91-152

Optical Modeling for Dynamics and Control Analysis G91-150 Mission Function Control for a Slew Ma-

neuver Experiment G91-145

Numerical and Literal Aeroelastic-VehicleModel Reduction for Feedback Control
Synthesis G91-140

Precise Flight-Path Control Using a Predictive Algorithm G91-139

Perion of a Total Francy Control Autorilat

Design of a Total Energy Control Autopilot
Using Constrained Parameter Optimization G91-138

Error Dynamics and Perfect Model Following with Application to Flight Control G91-136

Design of Restructurable Flight Control Systems Using Feedback Linearization G91-135

Measure of Controllability for Actuator
Placement
G91-134

Controllability and Observability of Gyroelastic Vehicles G91-133

Assigning Controllability and Observability
Gramians in Feedback Control G91-132
Time-to-Go Prediction for Homing Missiles

Based on Minimum-Time Intercepts
G91-130

Design and Evaluation of an Air Traffic Control Final Approach Spacing Tool G91-125

Dynamic Interpolation and Application to Flight Control G91-121 Use of Negative Weights in Linear Quadratic

Regulator Synthesis G91-118
Classical Control System Design and Experiment for the Mini-Mast Truss Structure

Critical Mode Interaction in the Presence of External Random Excitation G91-115

Stability of an Asymmetric Dual-Spin	n Space-
craft with Flexible Platform	G91-113
Identification of a Tendon Control	
for Flexible Space Structures	G91-112
Modeling of the Slewing Control of	a Flex-
ible Structure	G91-111
Feedback Control of Tethered S	
Using Lyapunov Stability Theory	G91-110
Reorientation Maneuver for Spinnin	g Space-
craft	G91-109
Digital Redesign of an Optimal Mo	
Management Controller for the	
Station Controller for the	G91-108
Dynamic Evaluation of the NASA	
Traction-Drive Joint	G91-101
Order-Variable Adaptive Pole-Pl	
Controllers for a Flexible System	
Generalized Proportional-Plus-De	
Compensators for a Class of U	
Plants	G91-097
Trajectory Design for Robotic Mani	ipulators
in Space Applications	G91-095
Modeling Error Bounds for Flexible	le Struc-
tures with Application to Robust	Control
	G91-093
Stability Robustness Margin Com	putation
for Structured Real-Parameter F	erturba-
tions	G91-085
Singular Value Robustness Tests for	Missile
Autopilot Uncertainties	G91-084
Integration of Four-Dimensional C	
with Total Energy Control Syste	
with Total Lifelgy Control Bysic	G91-080
Attitude Acquisition System for Co	
	G91-077
cation Spacecraft	
Control of Uncertain Structures Usin	
Power Flow Approach	G91-075
Multistage Design of an Optimal Mo	mentum
Management Controller for the	e Space
Station	G91-072
Station Evolution of Airplane Stability and	G91-072 Control:
Station Evolution of Airplane Stability and A Designer's Viewpoint (HKT)	G91-072 Control: G91-071
Station Evolution of Airplane Stability and A Designer's Viewpoint (HKT) Mission Function Control of Tethe	G91-072 Control: G91-071 red Sub-
Station Evolution of Airplane Stability and A Designer's Viewpoint (HKT) Mission Function Control of Tethe satellite Deployment/Retrieval:	G91-072 Control: G91-071 red Sub- In-Plane
Station Evolution of Airplane Stability and A Designer's Viewpoint (HKT) Mission Function Control of Tethe satellite Deployment/Retrieval: and Out-of-Plane Motion	G91-072 Control: G91-071 red Sub- In-Plane G91-067
Station Evolution of Airplane Stability and A Designer's Viewpoint (HKT) Mission Function Control of Tethe satellite Deployment/Retrieval: and Out-of-Plane Motion Near-Minimum-Time Control of Di	G91-072 Control: G91-071 red Sub- In-Plane G91-067 stributed
Station Evolution of Airplane Stability and A Designer's Viewpoint (HKT) Mission Function Control of Tethe satellite Deployment/Retrieval: and Out-of-Plane Motion Near-Minimum-Time Control of Di Parameter Systems: Analytical an	G91-072 Control: G91-071 red Sub- In-Plane G91-067 stributed d Exper-
Station Evolution of Airplane Stability and A Designer's Viewpoint (HKT) Mission Function Control of Tethe satellite Deployment/Retrieval: and Out-of-Plane Motion Near-Minimum-Time Control of Di-Parameter Systems: Analytical an imental Results	G91-072 Control: G91-071 red Sub- In-Plane G91-067 stributed
Station Evolution of Airplane Stability and A Designer's Viewpoint (HKT) Mission Function Control of Tethe satellite Deployment/Retrieval: and Out-of-Plane Motion Near-Minimum-Time Control of Di-Parameter Systems: Analytical an imental Results Optimal Rigid-Body Motions	G91-072 Control: G91-071 red Sub- In-Plane G91-067 stributed d Exper- G91-057 G91-054
Station Evolution of Airplane Stability and A Designer's Viewpoint (HKT) Mission Function Control of Tethe satellite Deployment/Retrieval: and Out-of-Plane Motion Near-Minimum-Time Control of Di-Parameter Systems: Analytical an imental Results	G91-072 Control: G91-071 red Sub- In-Plane G91-067 stributed d Exper- G91-057 G91-054
Station Evolution of Airplane Stability and A Designer's Viewpoint (HKT) Mission Function Control of Tethe satellite Deployment/Retrieval: and Out-of-Plane Motion Near-Minimum-Time Control of Di-Parameter Systems: Analytical an imental Results Optimal Rigid-Body Motions	G91-072 Control: G91-071 red Sub- In-Plane G91-067 stributed d Exper- G91-057 G91-054
Station Evolution of Airplane Stability and A Designer's Viewpoint (HKT) Mission Function Control of Tethe satellite Deployment/Retrieval: and Out-of-Plane Motion Near-Minimum-Time Control of Diparameter Systems: Analytical an imental Results Optimal Rigid-Body Motions Turbofan Engine Demonstration of Failure Detection Fractional Order State Equations	G91-072 Control: G91-071 red Sub- In-Plane G91-067 stributed d Exper- G91-057 G91-054 f Sensor G91-049 for the
Station Evolution of Airplane Stability and A Designer's Viewpoint (HKT) Mission Function Control of Tethe satellite Deployment/Retrieval: and Out-of-Plane Motion Near-Minimum-Time Control of Dirarameter Systems: Analytical an imental Results Optimal Rigid-Body Motions Turbofan Engine Demonstration of Failure Detection	G91-072 Control: G91-071 red Sub- In-Plane G91-067 stributed d Exper- G91-057 G91-054 f Sensor G91-049 for the
Station Evolution of Airplane Stability and A Designer's Viewpoint (HKT) Mission Function Control of Tethe satellite Deployment/Retrieval: and Out-of-Plane Motion Near-Minimum-Time Control of Di Parameter Systems: Analytical an imental Results Optimal Rigid-Body Motions Turbofan Engine Demonstration o Failure Detection Fractional Order State Equations Control of Viscoelastically Dampotures	G91-072 Control: G91-071 red Sub- In-Plane G91-067 stributed d Exper- G91-057 G91-054 f Sensor G91-049 for the ed Struc- G91-045
Station Evolution of Airplane Stability and A Designer's Viewpoint (HKT) Mission Function Control of Tethe satellite Deployment/Retrieval: and Out-of-Plane Motion Near-Minimum-Time Control of Di Parameter Systems: Analytical an imental Results Optimal Rigid-Body Motions Turbofan Engine Demonstration o Failure Detection Fractional Order State Equations Control of Viscoelastically Dampotures	G91-072 Control: G91-071 red Sub- In-Plane G91-067 stributed d Exper- G91-057 G91-054 f Sensor G91-049 for the ed Struc- G91-045
Station Evolution of Airplane Stability and A Designer's Viewpoint (HKT) Mission Function Control of Tethe satellite Deployment/Retrieval: and Out-of-Plane Motion Near-Minimum-Time Control of Di-Parameter Systems: Analytical an imental Results Optimal Rigid-Body Motions Turbofan Engine Demonstration of Failure Detection Fractional Order State Equations Control of Viscoelastically Dampetures Model Reduction and Control of	G91-072 Control: G91-071 red Sub- In-Plane G91-067 stributed d Exper- G91-057 G91-054 f Sensor G91-049 for the ed Struc- G91-045 Flexible
Station Evolution of Airplane Stability and A Designer's Viewpoint (HKT) Mission Function Control of Tethe satellite Deployment/Retrieval: and Out-of-Plane Motion Near-Minimum-Time Control of Diparameter Systems: Analytical an imental Results Optimal Rigid-Body Motions Turbofan Engine Demonstration of Failure Detection Fractional Order State Equations Control of Viscoelastically Dampotures Model Reduction and Control of Structures Using Krylov Vectors	G91-072 Control: G91-071 red Sub- In-Plane G91-067 stributed d Exper- G91-057 G91-054 f Sensor G91-049 for the ed Struc- G91-045 Flexible G91-040
Station Evolution of Airplane Stability and A Designer's Viewpoint (HKT) Mission Function Control of Tethe satellite Deployment/Retrieval: and Out-of-Plane Motion Near-Minimum-Time Control of Diparameter Systems: Analytical an imental Results Optimal Rigid-Body Motions Turbofan Engine Demonstration of Failure Detection Fractional Order State Equations Control of Viscoelastically Dampotures Model Reduction and Control of Structures Using Krylov Vectors Optimal Projection Control of an	G91-072 Control: G91-071 red Sub- In-Plane G91-067 stributed d Exper- G91-057 G91-054 f Sensor G91-049 for the ed Struc- G91-045 Flexible G91-040
Station Evolution of Airplane Stability and A Designer's Viewpoint (HKT) Mission Function Control of Tethe satellite Deployment/Retrieval: and Out-of-Plane Motion Near-Minimum-Time Control of Diparameter Systems: Analytical an imental Results Optimal Rigid-Body Motions Turbofan Engine Demonstration of Failure Detection Fractional Order State Equations Control of Viscoelastically Dampetures Model Reduction and Control of Structures Using Krylov Vectors Optimal Projection Control of an mental Truss Structure	G91-072 Control: G91-071 red Sub- In-Plane G91-067 stributed d Exper- G91-054 f Sensor G91-049 for the ed Struc- G91-045 Flexible G91-040 Experi- G91-038
Station Evolution of Airplane Stability and A Designer's Viewpoint (HKT) Mission Function Control of Tethe satellite Deployment/Retrieval: and Out-of-Plane Motion Near-Minimum-Time Control of Diparameter Systems: Analytical an imental Results Optimal Rigid-Body Motions Turbofan Engine Demonstration of Failure Detection Fractional Order State Equations Control of Viscoelastically Dampetures Model Reduction and Control of Structures Using Krylov Vectors Optimal Projection Control of an mental Truss Structure Attitude Determination Using Anter	G91-072 Control: G91-071 red Sub- In-Plane G91-067 stributed d Exper- G91-054 f Sensor G91-049 for the ed Struc- G91-045 Flexible G91-040 Experi- G91-038 enna Po-
Station Evolution of Airplane Stability and A Designer's Viewpoint (HKT) Mission Function Control of Tethe satellite Deployment/Retrieval: and Out-of-Plane Motion Near-Minimum-Time Control of Dirarameter Systems: Analytical an imental Results Optimal Rigid-Body Motions Turbofan Engine Demonstration of Failure Detection Fractional Order State Equations Control of Viscoelastically Dampetures Model Reduction and Control of Structures Using Krylov Vectors Optimal Projection Control of an mental Truss Structure Attitude Determination Using Antelarization Angles	G91-072 Control: G91-071 red Sub- In-Plane G91-067 stributed d Exper- G91-057 G91-054 f Sensor G91-049 for the ed Struc- G91-045 Flexible G91-040 Experi- G91-038 enna Po- G91-037
Station Evolution of Airplane Stability and A Designer's Viewpoint (HKT) Mission Function Control of Tethe satellite Deployment/Retrieval: and Out-of-Plane Motion Near-Minimum-Time Control of Diparameter Systems: Analytical an imental Results Optimal Rigid-Body Motions Turbofan Engine Demonstration of Failure Detection Fractional Order State Equations Control of Viscoelastically Dampetures Model Reduction and Control of Structures Using Krylov Vectors Optimal Projection Control of an mental Truss Structure Attitude Determination Using Anter	G91-072 Control: G91-071 red Sub- In-Plane G91-067 stributed d Exper- G91-057 G91-054 f Sensor G91-049 for the ed Struc- G91-045 Flexible G91-040 Experi- G91-038 enna Po- G91-037 as Design
Station Evolution of Airplane Stability and A Designer's Viewpoint (HKT) Mission Function Control of Tethe satellite Deployment/Retrieval: and Out-of-Plane Motion Near-Minimum-Time Control of Di Parameter Systems: Analytical an imental Results Optimal Rigid-Body Motions Turbofan Engine Demonstration o Failure Detection Fractional Order State Equations Control of Viscoelastically Dampetures Model Reduction and Control of Structures Using Krylov Vectors Optimal Projection Control of an mental Truss Structure Attitude Determination Using Ante larization Angles Approach to Robust Control System	G91-072 Control: G91-071 red Sub- In-Plane G91-067 stributed d Exper- G91-054 f Sensor G91-049 for the ed Struc- G91-045 Flexible G91-040 Experi- G91-038 en Po- G91-037 as Design G91-032
Station Evolution of Airplane Stability and A Designer's Viewpoint (HKT) Mission Function Control of Tethe satellite Deployment/Retrieval: and Out-of-Plane Motion Near-Minimum-Time Control of Dirarameter Systems: Analytical an imental Results Optimal Rigid-Body Motions Turbofan Engine Demonstration of Failure Detection Fractional Order State Equations Control of Viscoelastically Damportures Model Reduction and Control of Structures Using Krylov Vectors Optimal Projection Control of an mental Truss Structure Attitude Determination Using Antolarization Angles Approach to Robust Control System Attitude and Spin Rate Control of a	G91-072 Control: G91-071 red Sub- In-Plane G91-067 stributed d Exper- G91-054 f Sensor G91-049 for the ed Struc- G91-045 Flexible G91-040 Experi- G91-038 enna Po- G91-037 s Design G91-032 Spinning
Station Evolution of Airplane Stability and A Designer's Viewpoint (HKT) Mission Function Control of Tethe satellite Deployment/Retrieval: and Out-of-Plane Motion Near-Minimum-Time Control of Di Parameter Systems: Analytical an imental Results Optimal Rigid-Body Motions Turbofan Engine Demonstration o Failure Detection Fractional Order State Equations Control of Viscoelastically Dampetures Model Reduction and Control of Structures Using Krylov Vectors Optimal Projection Control of an mental Truss Structure Attitude Determination Using Ante larization Angles Approach to Robust Control System	G91-072 Control: G91-071 red Sub- In-Plane G91-067 stributed d Exper- G91-054 f Sensor G91-049 for the ed Struc- G91-045 Flexible G91-040 Experi- G91-038 enna Po- G91-037 is Design G91-032 Spinning
Station Evolution of Airplane Stability and A Designer's Viewpoint (HKT) Mission Function Control of Tethe satellite Deployment/Retrieval: and Out-of-Plane Motion Near-Minimum-Time Control of Di-Parameter Systems: Analytical an imental Results Optimal Rigid-Body Motions Turbofan Engine Demonstration of Failure Detection Fractional Order State Equations Control of Viscoelastically Dampetures Model Reduction and Control of Structures Using Krylov Vectors Optimal Projection Control of an mental Truss Structure Attitude Determination Using Antelarization Angles Approach to Robust Control System Attitude and Spin Rate Control of a Satellite Using Geomagnetic Fie	G91-072 Control: G91-071 red Sub- In-Plane G91-067 stributed d Exper- G91-054 f Sensor G91-049 for the ed Struc- G91-045 Flexible G91-040 Experi- G91-038 enna Po- G91-037 s Design G91-032 Spinning ld G91-031
Station Evolution of Airplane Stability and A Designer's Viewpoint (HKT) Mission Function Control of Tethe satellite Deployment/Retrieval: and Out-of-Plane Motion Near-Minimum-Time Control of Diparameter Systems: Analytical an imental Results Optimal Rigid-Body Motions Turbofan Engine Demonstration of Failure Detection Fractional Order State Equations Control of Viscoelastically Dampotures Model Reduction and Control of Structures Using Krylov Vectors Optimal Projection Control of an mental Truss Structure Attitude Determination Using Antelarization Angles Approach to Robust Control System Attitude and Spin Rate Control of a Satellite Using Geomagnetic Fie	G91-072 Control: G91-071 red Sub- In-Plane G91-067 stributed d Exper- G91-054 f Sensor G91-049 for the ed Struc- G91-045 Flexible G91-040 Experi- G91-038 enna Po- G91-037 rs Design G91-032 Spinning ld G91-031 Control
Station Evolution of Airplane Stability and A Designer's Viewpoint (HKT) Mission Function Control of Tethe satellite Deployment/Retrieval: and Out-of-Plane Motion Near-Minimum-Time Control of Diparameter Systems: Analytical an imental Results Optimal Rigid-Body Motions Turbofan Engine Demonstration of Failure Detection Fractional Order State Equations Control of Viscoelastically Dampetures Model Reduction and Control of Structures Using Krylov Vectors Optimal Projection Control of an mental Truss Structure Attitude Determination Using Antelarization Angles Approach to Robust Control System Attitude and Spin Rate Control of a Satellite Using Geomagnetic Fiel New Technique for Aircraft Flight Reconfiguration	G91-072 Control: G91-071 red Sub- In-Plane G91-067 stributed d Exper- G91-054 f Sensor G91-049 for the ed Struc- G91-045 Flexible G91-040 Experi- G91-038 enna Po- G91-037 as Design G91-031 Control G91-031 Control G91-023
Station Evolution of Airplane Stability and A Designer's Viewpoint (HKT) Mission Function Control of Tethe satellite Deployment/Retrieval: and Out-of-Plane Motion Near-Minimum-Time Control of Direct Parameter Systems: Analytical and imental Results Optimal Rigid-Body Motions Turbofan Engine Demonstration of Failure Detection Fractional Order State Equations Control of Viscoelastically Dampetures Model Reduction and Control of Structures Using Krylov Vectors Optimal Projection Control of and mental Truss Structure Attitude Determination Using Antellarization Angles Approach to Robust Control System Attitude and Spin Rate Control of a Satellite Using Geomagnetic Fiel New Technique for Aircraft Flight Reconfiguration Stability Augmentation and Control Stability Augm	G91-072 Control: G91-071 red Sub- In-Plane G91-067 stributed d Exper- G91-054 f Sensor G91-049 for the ed Struc- G91-045 Flexible G91-040 Experi- G91-037 ss Design G91-032 Spinning ld G91-031 Control G91-023 trol De-
Station Evolution of Airplane Stability and A Designer's Viewpoint (HKT) Mission Function Control of Tethe satellite Deployment/Retrieval: and Out-of-Plane Motion Near-Minimum-Time Control of Dirarameter Systems: Analytical an imental Results Optimal Rigid-Body Motions Turbofan Engine Demonstration of Failure Detection Fractional Order State Equations Control of Viscoelastically Dampetures Model Reduction and Control of Structures Using Krylov Vectors Optimal Projection Control of an mental Truss Structure Attitude Determination Using Antelarization Angles Approach to Robust Control System Attitude and Spin Rate Control of a Satellite Using Geomagnetic Fie New Technique for Aircraft Flight Reconfiguration Stability Augmentation and Concoupling for the Airborne Remore	G91-072 Control: G91-071 red Sub- In-Plane G91-067 stributed d Exper- G91-054 f Sensor G91-049 for the ed Struc- G91-045 Flexible G91-040 Experi- G91-037 as Design G91-032 Spinning ld G91-031 Control G91-023 trol De- otely Op-
Station Evolution of Airplane Stability and A Designer's Viewpoint (HKT) Mission Function Control of Tethe satellite Deployment/Retrieval: and Out-of-Plane Motion Near-Minimum-Time Control of Dirarameter Systems: Analytical and imental Results Optimal Rigid-Body Motions Turbofan Engine Demonstration of Failure Detection Fractional Order State Equations Control of Viscoelastically Dampotures Model Reduction and Control of Structures Using Krylov Vectors Optimal Projection Control of an mental Truss Structure Attitude Determination Using Antolarization Angles Approach to Robust Control System Attitude and Spin Rate Control of a Satellite Using Geomagnetic Fie New Technique for Aircraft Flight Reconfiguration Stability Augmentation and Concoupling for the Airborne Remocrated Device	G91-072 Control: G91-071 red Sub- In-Plane G91-067 stributed d Exper- G91-054 f Sensor G91-049 for the ed Struc- G91-045 Flexible G91-040 Experi- G91-037 as Design G91-032 Spinning ld G91-031 Control G91-023 trol De- ttely Op- G91-022
Station Evolution of Airplane Stability and A Designer's Viewpoint (HKT) Mission Function Control of Tethe satellite Deployment/Retrieval: and Out-of-Plane Motion Near-Minimum-Time Control of Dirarameter Systems: Analytical and imental Results Optimal Rigid-Body Motions Turbofan Engine Demonstration of Failure Detection Fractional Order State Equations Control of Viscoelastically Damportures Model Reduction and Control of Structures Using Krylov Vectors Optimal Projection Control of an mental Truss Structure Attitude Determination Using Antolarization Angles Approach to Robust Control System Attitude and Spin Rate Control of a Satellite Using Geomagnetic Fie New Technique for Aircraft Flight Reconfiguration Stability Augmentation and Concoupling for the Airborne Remoreated Device High Performance Linear-Quadra	G91-072 Control: G91-071 red Sub- In-Plane G91-067 stributed d Exper- G91-054 f Sensor G91-049 for the ed Struc- G91-045 Flexible G91-040 Experi- G91-038 enna Po- G91-037 ss Design G91-031 Control G91-023 trol De- ttely Op- G91-022 atic and
Station Evolution of Airplane Stability and A Designer's Viewpoint (HKT) Mission Function Control of Tethe satellite Deployment/Retrieval: and Out-of-Plane Motion Near-Minimum-Time Control of Di-Parameter Systems: Analytical an imental Results Optimal Rigid-Body Motions Turbofan Engine Demonstration of Failure Detection Fractional Order State Equations Control of Viscoelastically Dampetures Model Reduction and Control of Structures Using Krylov Vectors Optimal Projection Control of an mental Truss Structure Attitude Determination Using Antilarization Angles Approach to Robust Control System Attitude and Spin Rate Control of a Satellite Using Geomagnetic Fie New Technique for Aircraft Flight Reconfiguration Stability Augmentation and Concoupling for the Airborne Remocrated Device High Performance Linear-Quadra H-Infinity Designs for a	G91-072 Control: G91-071 red Sub- In-Plane G91-067 stributed d Exper- G91-054 f Sensor G91-049 for the ed Struc- G91-045 Flexible G91-040 Experi- G91-037 as Design G91-032 Spinning ld G91-031 Control G91-023 trol De- ttely Op- G91-022
Station Evolution of Airplane Stability and A Designer's Viewpoint (HKT) Mission Function Control of Tethe satellite Deployment/Retrieval: and Out-of-Plane Motion Near-Minimum-Time Control of Dirarameter Systems: Analytical an imental Results Optimal Rigid-Body Motions Turbofan Engine Demonstration of Failure Detection Fractional Order State Equations Control of Viscoelastically Dampetures Model Reduction and Control of Structures Using Krylov Vectors Optimal Projection Control of an mental Truss Structure Attitude Determination Using Antelarization Angles Approach to Robust Control System Attitude and Spin Rate Control of a Satellite Using Geomagnetic Fie New Technique for Aircraft Flight Reconfiguration Stability Augmentation and Concoupling for the Airborne Remocrated Device High Performance Linear-Quadra H-Infinity Designs for a maneuverable" Aircraft	G91-072 Control: G91-071 red Sub- In-Plane G91-067 stributed d Exper- G91-054 f Sensor G91-049 for the ed Struc- G91-045 Flexible G91-040 Experi- G91-038 enna Po- G91-037 rs Design G91-032 Spinning ld G91-031 Control G91-022 atic and "Super- G91-020
Station Evolution of Airplane Stability and A Designer's Viewpoint (HKT) Mission Function Control of Tethe satellite Deployment/Retrieval: and Out-of-Plane Motion Near-Minimum-Time Control of Di-Parameter Systems: Analytical an imental Results Optimal Rigid-Body Motions Turbofan Engine Demonstration of Failure Detection Fractional Order State Equations Control of Viscoelastically Dampetures Model Reduction and Control of Structures Using Krylov Vectors Optimal Projection Control of an mental Truss Structure Attitude Determination Using Antilarization Angles Approach to Robust Control System Attitude and Spin Rate Control of a Satellite Using Geomagnetic Fie New Technique for Aircraft Flight Reconfiguration Stability Augmentation and Concoupling for the Airborne Remocrated Device High Performance Linear-Quadra H-Infinity Designs for a	G91-072 Control: G91-071 red Sub- In-Plane G91-067 stributed d Exper- G91-054 f Sensor G91-049 for the ed Struc- G91-045 Flexible G91-040 Experi- G91-038 enna Po- G91-037 rs Design G91-032 Spinning ld G91-031 Control G91-022 atic and "Super- G91-020
Station Evolution of Airplane Stability and A Designer's Viewpoint (HKT) Mission Function Control of Tethe satellite Deployment/Retrieval: and Out-of-Plane Motion Near-Minimum-Time Control of Dirarameter Systems: Analytical an imental Results Optimal Rigid-Body Motions Turbofan Engine Demonstration of Failure Detection Fractional Order State Equations Control of Viscoelastically Dampetures Model Reduction and Control of Structures Using Krylov Vectors Optimal Projection Control of an mental Truss Structure Attitude Determination Using Antelarization Angles Approach to Robust Control System Attitude and Spin Rate Control of a Satellite Using Geomagnetic Fie New Technique for Aircraft Flight Reconfiguration Stability Augmentation and Concoupling for the Airborne Remocrated Device High Performance Linear-Quadra H-Infinity Designs for a maneuverable" Aircraft	G91-072 Control: G91-071 red Sub- In-Plane G91-067 stributed d Exper- G91-054 f Sensor G91-049 for the ed Struc- G91-045 Flexible G91-040 Experi- G91-038 enna Po- G91-037 rs Design G91-032 Spinning ld G91-031 Control G91-022 atic and "Super- G91-020 Singular
Station Evolution of Airplane Stability and A Designer's Viewpoint (HKT) Mission Function Control of Tethe satellite Deployment/Retrieval: and Out-of-Plane Motion Near-Minimum-Time Control of Dirarameter Systems: Analytical an imental Results Optimal Rigid-Body Motions Turbofan Engine Demonstration of Failure Detection Fractional Order State Equations Control of Viscoelastically Dampetures Model Reduction and Control of Structures Using Krylov Vectors Optimal Projection Control of an mental Truss Structure Attitude Determination Using Antelarization Angles Approach to Robust Control System Attitude and Spin Rate Control of a Satellite Using Geomagnetic Fie New Technique for Aircraft Flight Reconfiguration Stability Augmentation and Con coupling for the Airborne Remocrated Device High Performance Linear-Quadra H-Infinity Designs for a maneuverable" Aircraft Computation of the Real Structured	G91-072 Control: G91-071 red Sub- In-Plane G91-067 stributed d Exper- G91-054 f Sensor G91-049 for the ed Struc- G91-040 Experi- G91-032 Spinning Id G91-031 Control G91-023 trol De- tely Op- G91-022 atic and G91-020 Singular G91-020 Singular G91-018
Station Evolution of Airplane Stability and A Designer's Viewpoint (HKT) Mission Function Control of Tethe satellite Deployment/Retrieval: and Out-of-Plane Motion Near-Minimum-Time Control of Diparameter Systems: Analytical and imental Results Optimal Rigid-Body Motions Turbofan Engine Demonstration of Failure Detection Fractional Order State Equations Control of Viscoelastically Dampotures Model Reduction and Control of Structures Using Krylov Vectors Optimal Projection Control of and mental Truss Structure Attitude Determination Using Antelarization Angles Approach to Robust Control System Attitude and Spin Rate Control of a Satellite Using Geomagnetic Fie New Technique for Aircraft Flight Reconfiguration Stability Augmentation and Concoupling for the Airborne Remocrated Device High Performance Linear-Quadra H-Infinity Designs for a maneuverable" Aircraft Computation of the Real Structured Value via Polytopic Polynomials	G91-072 Control: G91-071 red Sub- In-Plane G91-067 stributed d Exper- G91-054 f Sensor G91-049 for the ed Struc- G91-045 Flexible G91-040 Experi- G91-037 as Design G91-032 Spinning ld G91-032 Spinning ld G91-033 trol De- tely Op- G91-022 atic and "Super- G91-020 Singular G91-018 bl System

Approach to Control Moment Gyroscope Steering Using Feedback Linearization Partitioned Solution Procedure for Control-Structure Interaction Simulations G91-008 Adaptable Method of Managing Jets and Aerosurfaces for Aerospace Vehicle Con-Beyond Singular Values and Loop Shapes G91-001 (Tutorial) Robust Control Design with Real-Parameter Uncertainty and Unmodeled Dynamics G90-158

Control System Effectors

Design of a Viscous Ring Nutation Damper for a Freely Precessing Body

Control Theory

Application of Stochastic Robustness to Aircraft Control Systems G91-186 Optimal Control Problems with Maximum Functional G91-182 Control of Distributed Parameter Systems by Moving Force Actuators G91-180 Robust Non-Minimum-Phase Compensation for a Class of Uncertain Dynamical Sys-G91-179 tems Stabilization via Dynamic Output Feedback: A Numerical Approach G91-165 Linear Quadratic Regulator Approach to the Stabilization of Matched Uncertain Linear Systems G91-162 Optimal Nonlinear Compensator G91-155 Assigning Controllability and Observability Gramians in Feedback Control G91-132 Use of Negative Weights in Linear Quadratic Regulator Synthesis G91-118 Stability Regions of a Model Reference Control System G91-104 Model Reduction for Flexible Structures: Test Data Approach G91-102 Order-Variable Adaptive Pole-Placement Controllers for a Flexible System G91-098 Trajectory Design for Robotic Manipulators in Space Applications G91-095 Application of Multiple-Input/Single-Output Analysis Procedures to Flight Test Data G91-090 Singular-Value Based Stability and Sensitivity Analysis of Discrete Multiloop Systems G91-088 Robust Eigenstructure Assignment Structured State Space Uncertainty G91-087 Stability Robustness Margin Computation for Structured Real-Parameter Perturbations Adaptive Two-Time-Scale Tracking Filter for Target Acceleration Estimation G91-082 Multistage Design of an Optimal Momentum Management Controller for the Space Station G91-072 Adaptive Noise Models for Extended Kalman Filter G91-069 Covariance Analysis Algorithm for Interconnected Systems G91-059 Robust Eigenspace Assignment Using Singular Value Sensitivities G91-058 Near-Minimum-Time Control of Distributed Parameter Systems: Analytical and Experimental Results G91-057 Perfect Explicit Model-Following Control Solution to Imperfect Model-Following Control Problems G91-055 Optimal Rigid-Body Motions G91-054 Approach to Robust Control Systems Design G91-032

New Technique for Aircraft Flight Control Reconfiguration Missile Autopilot Robustness to Uncertain Aerodynamics: Stability Hypersphere Radius Calculation High Performance Linear-Quadratic and H-Infinity Designs for a "Supermaneuverable" Aircraft Computation of the Real Structured Singular Value via Polytopic Polynomials G91-018 Integrated Flight/Propulsion Control System Design Based on a Centralized Approach G91-014 Model Reduction for Flexible Space Structures G91-009 Gibbs Phenomenon in Structural Control G91-007 Beyond Singular Values and Loop Shapes (Tutorial) G91-001 Robust Control Design with Real-Parameter Uncertainty and Unmodeled Dynamics G90-158

Krylov Model Reduction Algorithm for

Dynamics

Undamped Structural Dynamics Systems G91-194 Orbital Dynamics of the Hanging Tether Interferometer Symbolic Vector/Dyadic Multibody Formalism for Tree-Topology Systems G91-185 Symbolic Computer Language for Multibody Systems G91-175 Design of a Viscous Ring Nutation Damper for a Freely Precessing Body G91-173 Dynamics of a Tethered Satellite Subjected to Aerodynamic Forces G91-172 Linear Quadratic Regulator Approach to the Stabilization of Matched Uncertain Linear Dominance of Stiffening Effects for Rotating Flexible Beams G91-161 Derivation of the Relative Quaternion Differential Equation G91-156 Stability of Second-Order Multidimensional Linear Time-Varying Systems G91-152 Optical Modeling for Dynamics and Control Analysis G91-150 Active Vibration Control with Model Correction on a Flexible Laboratory Grid G91-146 Postflight Data-Reduction Techniques for Hovered Kinetic Energy Weapons G91-131 Gravity Gradient Stability of Satellites with Guy-Wire Constrained Appendages G91-126 Dynamic Interpolation and Application to Flight Control G91-121 Modal Truncation, Ritz Vectors, and Derivatives of Closed-Loop Damping Ratios G91-117 Critical Mode Interaction in the Presence of **External Random Excitation** G91-115 Transient Solution of Time-Variant Structural Systems Using Invariant Modal **Properties** G91-114 Stability of an Asymmetric Dual-Spin Spacecraft with Flexible Platform G91-113 Model Reduction for Flexible Structures: Test Data Approach G91-102 Dynamic Evaluation of the NASA-ORNL Traction-Drive Joint G91-101 Jacobi Method for Unsymmetric Eigenproblems G91-096 Modeling Error Bounds for Flexible Structures with Application to Robust Control G91-093

Computational Singular Perturbation Method for Dynamic Systems G91-092 Attitude Acquisition System for Communication Spacecraft G91-077 Unified Formulation of Dynamics for Serial Rigid Multibody Systems Anisotropic Stiffness Effect on Stability of a Magnetically Suspended Momentum Wheel G91-048 Resonances in the Despin Dynamics of Dual-Spin Spacecraft G91-047 Three-Dimensional Vibrations of Tethered Satellite Systems G91-046 Accommodation of Kinematic Disturbances During Minimum-Time Maneuvers of Flexible Spacecraft G91-041 Contribution of Zonal Harmonics to Gravitational Moment G91-029 Comparison of the Least-Squares Moving-Block Technique with Ibrahim's Method G91-028 Stability Tests of Spin-Stabilized Spacecraft in the Presence of Thrust G91-027 Nonlinear Behavior of a Passive Zero-Spring-Rate Suspension System G91-011 Model Reduction for Flexible Space Strucfures C91_009 Partitioned Solution Procedure for Control-Structure Interaction Simulations G91-008 Librational Instability of Rigid Space Station Due to Translation of Internal Mass G91-004

Engine Control

Integrated Flight/Propulsion Control System
Design Based on a Centralized Approach
G91-014

Flight Displays

Adaptive Suppression of Biodynamic Interference in Helmet-Mounted Displays and Head Teleoperation G91-177

Flight Mechanics

Application of Singular Perturbation Methods for Three-Dimensional Minimum-Time Interception G91-051
National Aerospace Plane Longitudinal Long-Period Dynamics G91-026

Roll-Performance Criteria for Highly Aug-

Handling Qualities

mented Aircraft Compensating Sampling Errors in Stabilizing Helmet-Mounted Displays Using Auxiliary Acceleration Measurements G91-158 Flying Quality Analysis and Flight Evaluation of a Highly Augmented Combat Rotorcraft Error Dynamics and Perfect Model Following with Application to Flight Control Lateral-Direction Tracking Requirements from Simulation Data G91-106 Technique for Predicting Longitudinal Pilot-**Induced Oscillations** G91-025 Closed-Loop Assessment of Flight Simulator **Fidelity** G91-024

Launch Vehicle Guidance and Control

Rapid Near-Optimal Aerospace Plane Trajectory Generation and Guidance
G91-178
Trajectory Optimization on a Parallel Processor
G91-060 Conditional Performance Error Covariance
Analyses for Commercial Titan Launch
Vehicles G91-056
Weak Hamiltonian Finite Element Method
for Optimal Control Problems G91-019

Missile Dynamics

topilot

Optimal Aeroassisted Intercept Trajectories at Hyperbolic Speeds G91-016

Modern Guidance Law for High-Order Au-

G91-154

Missile Guidance and Control

Partially Filled Nutation Damper for a Freely Precessing Gyroscope G91-153 Time-to-Go Prediction for Homing Missiles Based on Minimum-Time Intercepts G91-130 Optimal Plane Change During Constant Altitude Hypersonic Flight G91-119 Angle-Only Tracking Filter in Modified Spherical Coordinates G91-103 Singular Value Robustness Tests for Missile Autopilot Uncertainties G91-084 Adaptive Two-Time-Scale Tracking Filter for Target Acceleration Estimation G91-082 Optimal Thrust Control of a Missile with a Pulse Motor G91-053 Missile Autopilot Robustness to Uncertain Aerodynamics: Stability Hypersphere Radius Calculation G91-021

Navigation

Approach for Targeting Landers and Penetrators Using Orbital Optical Navigation G91-143 Optimal Guidance for High-Order and Acceleration Constrained Missile G91-083 Magellan In-Flight Gyro/Star Scanner Misalignment Calibration G91-012

Analytical Solutions to a Guidance Problem

Optimization Techniques

Statistical Linearization for Multi-Input/ Multi-Output Nonlinearities Optimal Feedback Gains for Three-Dimensional Large Angle Slewing of Spacecraft G91-195 Homotopy Approach to Optimal, Linear Quadratic, Fixed Architecture Compensation G91-183 Optimal Control Problems with Maximum Functional G91-182 Robust H_{∞} Control Design for the Space Station with Structured Parameter Uncertainty C91-170 Stabilization via Dynamic Output Feedback: A Numerical Approach G91-165 Optimal Nonlinear Compensator G91-155 Active Vibration Control with Model Correction on a Flexible Laboratory Grid Structure C91-146 Precise Flight-Path Control Using a Predictive Algorithm G91-139 Design of a Total Energy Control Autopilot Using Constrained Parameter Optimization G91-138 Time-to-Go Prediction for Homing Missiles Based on Minimum-Time Intercepts

Based on Minimum-Time Intercepts
G91-130
Dynamic Decrease of Drag by Optimal
Periodic Control
Optimal Trajectory Synthesis for TerrainFollowing Flight
G91-120
Use of Negative Weights in Linear Quadratic
Regulator Synthesis
G91-118

Feedback Control of Tethered Satellites Using Lyapunov Stability Theory G91-110 Digital Redesign of an Optimal Momentum Management Controller for the Space Rocket Trajectory Optimization: 1950-1963 (HKT) G91-107 Computational Singular Perturbation Method for Dynamic Systems G91-092 Stability Analysis of Digital Kalman Filters with Floating-Point Computation G91-089 Singular-Value Based Stability and Sensitivity Analysis of Discrete Multiloop Systems Robust Eigenstructure Assignment with Structured State Space Uncertainty Singular Value Robustness Tests for Missile Autopilot Uncertainties C91_084 Hypervelocity Orbital Intercept Guidance Using Certainty Control G91-081 Design of Optimal Second-Order State Estimators Trajectory Optimization on a Parallel Processor G91-060 Robust Eigenspace Assignment Using Singular Value Sensitivities G91-058 Perfect Explicit Model-Following Control Solution to Imperfect Model-Following Control Problems G91-055 Optimal Thrust Control of a Missile with a Pulse Motor Application of Singular Perturbation Methods for Three-Dimensional Minimum-Time Interception Weak Hamiltonian Finite Element Method for Optimal Control Problems G91-019 Optimal Aeroassisted Intercept Trajectories at Hyperbolic Speeds G91-016 Continuous Global N-Tuple Coverage with (2N + 2) Satellites G91-002

Pointing Systems

Dynamics of an Antenna Pointing Control
System with Flexible Structures G91-171
Attitude Determination Using Antenna Polarization Angles G91-037
Star Pattern Identification Aboard an
Inertially Stabilized Spacecraft G91-036
Attitude and Spin Rate Control of a Spinning
Satellite Using Geomagnetic Field
G91-031

Approach to Control Moment Gyrosope Steering Using Feedback Linearization

Redundancy Management

Turbofan Engine Demonstration of Sensor Failure Detection G91-049
Adaptable Method of Managing Jets and Aerosurfaces for Aerospace Vehicle Control G91-006

Software Technology

Explicit Exponential Method for the Integration of Stiff Ordinary Differential Equations G91-184
Onboard Automatic Aid and Advisory for Pilots of Control-Impaired Aircraft
G91-122

Fault-Tolerant Parallel Processor G91-079

Spacecraft Dynamics

Dynamics of a Tethered Satellite Subjected to Aerodynamic Forces G91-172
Dynamics of an Antenna Pointing Control System with Flexible Structures G91-171

Experimental Investigation of Passive Enhancement of Damping for Space Struc-Dominance of Stiffening Effects for Rotating Flexible Beams G91-161 Results in Identification of a Flexible Structure Using Lattice Filters G91-127 Gravity Gradient Stability of Satellites with Guy-Wire Constrained Appendages G91-126 Ascent Performance of an Air-Breathing Horizontal-Takeoff Launch Vehicle Reorientation Maneuver for Spinning Spacecraft G91-109 Unified Formulation of Dynamics for Serial Rigid Multibody Systems G91-076 Feedback Tether Deployment and Retrieval G91-066 Modal Identities for Multibody Elastic Spacecraft G91-044 Selection of Component Modes for Flexible Multibody Simulation G91-042 Contribution of Zonal Harmonics to Gravitational Moment G91-029 Stability Tests of Spin-Stabilized Spacecraft in the Presence of Thrust G91-027 Passive Attitude Damping of Alternative Assembly Configurations of Space Station Freedom C01_005 Librational Instability of Rigid Space Station Due to Translation of Internal Mass G91-004

Spacecraft Guidance and Control Orbital Dynamics of the Hanging Tether Interferometer G91-193 Robust H_{∞} Control Design for the Space Station with Structured Parameter Uncertainty Experimental Investigation of Passive Enhancement of Damping for Space Struc-G91-168 Algebraic Approach to the Bearings-Only Estimation Equations G91-166 Guidance for Asteroid Rendezvous G91-164 Integrated Structure/Control Law Design by Multilevel Optimization C91-147 Mission Function Control for a Slew Maneuver Experiment G91-145 Optimal Finite-Thrust Spacecraft Trajectories Using Collocation and Nonlinear Programming G91-144 Approach for Targeting Landers and Penetrators Using Orbital Optical Navigation G91-143 Gravity Gradient Stability of Satellites with Guy-Wire Constrained Appendages G91-126 Optimal Plane Change During Constant Altitude Hypersonic Flight G91-119 Stability of an Asymmetric Dual-Spin Spacecraft with Flexible Platform G91-113 Identification of a Tendon Control System for Flexible Space Structures G91-112 Modeling of the Slewing Control of a Flexible Structure G91-111 Feedback Control of Tethered Satellites Using Lyapunov Stability Theory G91-110 Digital Redesign of an Optimal Momentum Management Controller for the Space G91-108 Dynamic Evaluation of the NASA-ORNL Traction-Drive Joint G91-101 Hypervelocity Orbital Intercept Guidance

Using Certainty Control

G91-081

Integration of Four-Dimensional Guidance with Total Energy Control System New Method for Scanning Spacecraft and Balloon-Borne/Space-Based Experiments G91-078 Attitude Acquisition System for Communication Spacecraft C91-077 New Star Identification Technique for At-G91-070 titude Control Adaptive Noise Models for Extended Kalman Filter G91-069 Mission Function Control of Tethered Subsatellite Deployment/Retrieval: In-Plane G91-067 and Out-of-Plane Motion Feedback Tether Deployment and Retrieval G91-066 Optimal Aeroassisted Guidance Using Loh's Term Approximations G91-052 Anisotropic Stiffness Effect on Stability of a Magnetically Suspended Momentum G91-048 Wheel Three-Dimensional Vibrations of Tethered Satellite Systems Accommodation of Kinematic Disturbances During Minimum-Time Maneuvers of Flexible Spacecraft G91-041 Attitude Determination Using Antenna Polarization Angles G91-037 Star Pattern Identification Aboard an Inertially Stabilized Spacecraft G91-036 Collision Detection for Spacecraft Proximity Operations G91-035 Attitude and Spin Rate Control of a Spinning Satellite Using Geomagnetic Field G91-031 Analytical Solutions to a Guidance Problem G91-015 Approach to Control Moment Gyroscope Steering Using Feedback Linearization G91-013 Magellan In-Flight Gyro/Star Scanner Misalignment Calibration G91-012 Passive Attitude Damping of Alternative Assembly Configurations of Space Station

Freedom

State Estimation

Constant Covariance in Local Vertical Coordinates for Near-Circular Orbits

C91-005

G91-197

Algebraic Approach to the Bearings-Only Estimation Equations G91-166 Estimating Retrosensor Position from Range Data G91-160 Existence and Uniqueness Proof for the Minimum Model Error Optimal Estimation Algorithm G91-157 Generalized Covariance Analysis for Partially Autonomous Deep Space Missions G91-142

Postflight Data-Reduction Techniques for Hovered Kinetic Energy Weapons

G91-131 Angle-Only Tracking Filter in Modified Spherical Coordinates C91-103 Stability Analysis of Digital Kalman Filters with Floating-Point Computation G91-089 Adaptive Two-Time-Scale Tracking Filter for Target Acceleration Estimation G91-082 Adaptive Noise Models for Extended Kalman Filter G91-069 Design of Optimal Second-Order State Estimators G91-065 Conditional Performance Error Covariance Analyses for Commercial Titan Launch Vehicles G91-056 Identification of Time Delays in Flight Measurements G91-017 Magellan In-Flight Gyro/Star Scanner Misalignment Calibration G91-012 Reduced-Dynamic Technique for Precise Orbit Determination of Low Earth Satel-C91-003

Structural Control

Krylov Model Reduction Algorithm for Undamped Structural Dynamics Systems C91-194 Symbolic Vector/Dyadic Multibody Formalism for Tree-Topology Systems G91-185 Control of Distributed Parameter Systems by Moving Force Actuators G91-180 Robust Non-Minimum-Phase Compensation for a Class of Uncertain Dynamical Sys-G91-179 tems Experimental Analysis of a Passively Tuned Actuator on a Low-Order Structure C91-169 Experimental Investigation of Passive Enhancement of Damping for Space Structures G91-168 Dominance of Stiffening Effects for Rotating Flexible Beams G91-161 Integrated Structure/Control Law Design by Multilevel Optimization G91-147 Active Vibration Control with Model Correction on a Flexible Laboratory Grid Structure G91-146 Measure of Controllability for Actuator Placement G91-134 Results in Identification of a Flexible Structure Using Lattice Filters G91-127

Identification of a Tendon Control System for Flexible Space Structures Modeling of the Slewing Control of a Flexible Structure G91-111 Low-Authority Eigenvalue Placement for Second-Order Structural Systems G91-105 Control of Uncertain Structures Using an H. Power Flow Approach G91-075 H[∞] Robust Control Synthesis for a Large Space Structure G91-074 Hierarchic Control Architecture for Intelligent Structures G91-073 Experimental Results Using Active Control of Traveling Wave Power Flow G91-050 Three-Dimensional Vibrations of Tethered Satellite Systems G91-046

Flexible Spacecraft G91-041 Model Reduction and Control of Flexible Structures Using Krylov Vectors G91-040 Optimal Projection Control of an Experimental Truss Structure G91-038

Accommodation of Kinematic Disturbances

During Minimum-Time Maneuvers of

Gibbs Phenomenon in Structural Control G91-007

System Identification

Existence and Uniqueness Proof for the Minimum Model Error Optimal Estimation Algorithm G91-157 Constrained Eigensystem Realization Algorithm for Lightly Damped Distributed Structures Identifiability of Helicopter Models Incorporating Higher-Order Dynamics G91-124 Order-Variable Adaptive Pole-Placement Controllers for a Flexible System G91-098 Sensor Placement for On-Orbit Modal Identification and Correlation of Large Space Structures

NOVDEC. 1991
Comparison of the Least-Squares Moving- Block Technique with Ibrahim's Method G91-028
Identification of Time Delays in Flight Measurements G91-017 Nonlinear Behavior of a Passive Zero- Spring-Rate Suspension System G91-011
Trajectory Optimization
Optimal In-Plane Orbital Evasive Maneuvers Using Continuous Low Thrust Propulsion G91-198
Optimal Control Problems with Maximum Functional G91-182
Rapid Near-Optimal Aerospace Plane Tra- jectory Generation and Guidance
G91-178
Guidance for Asteroid Rendezvous G91-164
Estimating Retrosensor Position from Range
Data G91-160
True Anomaly Approximation for Elliptical
Orbite C01-150

ra-78 ıge 60 cal 159 Optimal Finite-Thrust Spacecraft Trajectories Using Collocation and Nonlinear **Programming** Generalized Covariance Analysis for Partially Autonomous Deep Space Missions G91-142 Dynamic Interpolation and Application to Flight Control G91-121 Optimal Trajectory Synthesis for Terrain-Following Flight G91-120 Optimal Plane Change During Constant Altitude Hypersonic Flight G91-119 Rocket Trajectory Optimization: 1950-1963 (HKT) G91-107 Application of Total Energy Control for High-Performance Aircraft Vertical Transitions G91-062 Optimal Aircraft Performance During Microburst Encounter G91-061 Trajectory Optimization on a Parallel Processor C91_060 Weak Hamiltonian Finite Element Method for Optimal Control Problems G91-019 Optimal Aeroassisted Intercept Trajectories at Hyperbolic Speeds G91-016

Interdisciplinary Topics

Aerospace Technology Utilization

Autonomously Aided Strapdown Attitude Reference System G91-176

Analytical and Numerical Methods

Optimal Test Procedures for Evaluating Circular Probable Error G91-199 Statistical Linearization for Multi-Input/ Multi-Output Nonlinearities Krylov Model Reduction Algorithm for Undamped Structural Dynamics Systems Symbolic Vector/Dyadic Multibody Formalism for Tree-Topology Systems G91-185 Explicit Exponential Method for the Integration of Stiff Ordinary Differential **Equations** G91-184 Symbolic Computer Language for Multibody Systems G91-175 Dynamics of Hang Gliders Analysis of a Rotationally Accelerated Beam with Finite Tip Mass and Hub G91-163 Existence and Uniqueness Proof for the Minimum Model Error Optimal Estimation Algorithm G91-157 Derivation of the Relative Quaternion Differential Equation C91-156

Stability of Second-Order Multidimensional
Linear Time-Varying Systems G91-152
Optical Modeling for Dynamics and Control
Analysis G91-150
Modal Truncation, Ritz Vectors, and Derivatives of Closed-Loop Damping Ration

Application of Encke's Method to Long Arc
Orbit Determination Solutions G91-099
Computational Singular Perturbation Method for Dynamic Systems G91-092
Stability Analysis of Digital Kalman Filters
with Floating-Point Computation G91-089
Singular-Value Based Stability and Sensitivity Analysis of Discrete Multiloop Systems
G91-088

Robust Eigenstructure Assignment with Structured State Space Uncertainty

Robust Eigenvalue Assignment with Maximum Tolerance to System Uncertainties
G91-086
Unified Formulation of Dynamics for Serial
Rigid Multibody Systems
G91-076

Design of Optimal Second-Order State Estimators

Robust Eigenspace Assignment Using Singular Value Sensitivities

G91-058

Perfect Explicit Model-Following Control Solution to Imperfect Model-Following Control Problems G91-055

Reliability, Maintainability, and Logistics Support

Fault-Tolerant Parallel Processor G91-079

Research Facilities and Instrumentation

Nonlinear Behavior of a Passive Zero-Spring-Rate Suspension System G91-011

Safety

Onboard Automatic Aid and Advisory for Pilots of Control-Impaired Aircraft

Nonlinear Dynamical Model of Relative Motion for the Orbiting Debris Problem G91-064

Launch Vehicle and Missile (LV/M) Technology

Missile System

Design of a Viscous Ring Nutation Damper for a Freely Precessing Body G91-173 Partially Filled Nutation Damper for a Freely Precessing Gyroscope G91-153

Propulsion and Propellant Systems

Orbital Motion Under Continuous Radial Thrust G91-094

Simulation

Ascent Performance of an Air-Breathing Horizontal-Takeoff Launch Vehicle

G91-123

Covariance Analysis Algorithm for Interconnected Systems G91-059

Testing, Flight and Ground

Optimal Test Procedures for Evaluating
Circular Probable Error
Postflight Data-Reduction
Hovered Kinetic Energy Weapons

C91-131

Trajectories and Tracking Systems

Algebraic Approach to the Bearings-Only Estimation Equations G91-166

Propulsion

Airbreathing Propulsion

Turbofan Engine Demonstration of Sensor Failure Detection G91-049

Electric and Advanced Space Propulsion

Satellite Relocation by Tether Deployment
G91-030

Solid Rocket Motors and Missile Systems

Stability Tests of Spin-Stabilized Spacecraft in the Presence of Thrust G91-027

Space Technology

Aerobraking Flight Mechanics

Optimal Aeroassisted Guidance Using Loh's Term Approximations G91-052

Mission Design and Analysis

Constant Covariance in Local Vertical Coordinates for Near-Circular Orbits

Mission Function Control for a Slew Maneuver Experiment G91-145
Fast Orbit Propagator for Graphical Display

Conditional Performance Error Covariance
Analyses for Commercial Titan Launch
Vehicles G91-056

Mission Trajectories (Earth and Interplanetary)

Optimal In-Plane Orbital Evasive Maneuvers Using Continuous Low Thrust Propulsion G91-198 True Anomaly Approximation for Elliptical G91-159 Optimal Finite-Thrust Spacecraft Trajectories Using Collocation and Nonlinear **Programming** G91-144 Rocket Trajectory Optimization: 1950-1963 (HKT) G91-107 Orbital Motion Under Continuous Radial G91-094 Fast Orbit Propagator for Graphical Display G91-068

Space Systems

Results in Identification of a Flexible Structure Using Lattice Filters G91-127
Collision Detection for Spacecraft Proximity
Operations G91-035
Continuous Global N-Tuple Coverage with
(2N + 2) Satellites G91-002

Spacecraft Attitude Determination

Derivation of the Relative Quaternion Differential Equation G91-156 New Star Identification Technique for Attitude Control G91-070 Librational Instability of Rigid Space Station Due to Translation of Internal Mass G91-004

Spacecraft Power

Satellite Relocation by Tether Deployment

Spacecraft Sensor Systems

New Star Identification Technique for Attitude Control G91-070 Sensor Placement for On-Orbit Modal Identification and Correlation of Large Space G91-039

Spacecraft Structural Configuration, Design, and Analysis

Integrated Structure/Control Law Design by Multilevel Optimization G91-147 Measure of Controllability for Actuator Placement G91-134 Passive Attitude Damping of Alternative Assembly Configurations of Space Station

Structural Mechanics and Materials

Aeroelasticity and Control

Application of Aeroservoelastic Modeling Using Minimum-State Unsteady Aerodynamic Approximations Structure/Control Design Synthesis of Active Flutter Suppression System by Goal Programming Modeling Error Bounds for Flexible Structures with Application to Robust Control G91-093

Comparison of the Least-Squares Moving-Block Technique with Ibrahim's Method G91-028

Dynamic Model Analysis

Classical Control System Design and Experiment for the Mini-Mast Truss Structure G91-116 Transient Solution of Time-Variant Structural Systems Using Invariant Modal **Properties** G91-114 Model Reduction for Flexible Structures: Test Data Approach G91-102 Experimental Modal Analysis for Dynamic G91-100 Models of Spacecraft Trajectory Design for Robotic Manipulators in Space Applications G91-095 Special Class of Nonlinear Damping Models G91-010 in Flexible Space Structures Model Reduction for Flexible Space Struc-G91-009

Control of Distributed Parameter Systems by

G91-180

Flexible and Active Structures

Moving Force Actuators Experimental Analysis of a Passively Tuned Actuator on a Low-Order Structure G91-169 Experimental Modal Analysis for Dynamic Models of Spacecraft G91-100 Hierarchic Control Architecture for Intelligent Structures G91-073 Experimental Results Using Active Control of Traveling Wave Power Flow G91-050 Fractional Order State Equations for the Control of Viscoelastically Damped Struc-G91-045 Approximate Solutions for Vibrations of Deploying Appendages G91-043 Optimal Projection Control of an Experimental Truss Structure G91-038

Structural Design

Analysis of a Rotationally Accelerated Beam with Finite Tip Mass and Hub G91-163 Design Criteria for Predicting Damping in Underdamped Linear Lumped-Parameter Systems G91-151

Structural Dynamics and Characterization

Analysis of a Rotationally Accelerated Beam with Finite Tip Mass and Hub G91-163 Design Criteria for Predicting Damping in Underdamped Linear Lumped-Parameter Systems

Constrained Eigensystem Realization Algorithm for Lightly Damped Distributed C91-149 Structures Hybrid State Equations of Motion for Flexible Bodies in Terms of Quasi-Coordinates G91-148

Modal Truncation, Ritz Vectors, and Derivatives of Closed-Loop Damping Ratios G91-117

Classical Control System Design and Experiment for the Mini-Mast Truss Structure G91-116

Transient Solution of Time-Variant Structural Systems Using Invariant Modal **Properties** G91-114 Jacobi Method for Unsymmetric Eigenproblems G91-096 Modal Identities for Multibody Elastic Spacecraft G91-044 Approximate Solutions for Vibrations of Deploying Appendages G91-043 Model Reduction and Control of Flexible Structures Using Krylov Vectors G91-040 Sensor Placement for On-Orbit Modal Identification and Correlation of Large Space

Structural Modeling

Structures

Experimental Modal Analysis for Dynamic Models of Spacecraft G91-100 Control of Uncertain Structures Using an H. Power Flow Approach G91-075 Fractional Order State Equations for the Control of Viscoelastically Damped Struc-G91-045 tures

Structural Optimization

Structure/Control Design Synthesis of Active Flutter Suppression System by Goal Programming

Structural Stability

Computation of the Real Structured Singular Value via Polytopic Polynomials G91-018

Author Index

Abdelwahab, M., G91-049 Adams, W. M., Jr., G91-181 Akishita, S., G91-048 Alfano, S., G91-081 Amrani, A. O., G91-028 Anderson, M. R., G91-136 Ardema, M. D., G91-092 Ashour, S. S., G91-184 Azuma, A., G91-063 Bagley, R. L., G91-045 Banda, S. S., G90-158, G91-018 Banerjee, A. K., G91-195 Bang, H., G91-057 Barba, P. M., G91-109 Bartlett, A. C., G90-158 Baruh, H., G91-007, G91-161 Bava, R., G91-106 Bell, S. C., G91-056 Belvin, W. K., G91-008 Bergmann, E., G91-013 Bergmann, E. V., G91-035 Berry, D. T., G91-026 Betts, J. T., G91-060 Black, C. G., G91-124 Blackwell, J., G91-017 Bless, R. R., G91-019 Boltz, F. W., G91-094 Boone, J. N., G91-012, G91-142 Breakwell, J. V., G91-155

Breckenridge, W. G., G91-150 Bruch, J. C., Jr., G91-163 Bullard, R. E., G91-014 Byun, K., G91-170, G91-179 Calico, R. A., G91-045, G91-192 Calise, A. J., G91-178 Chahinian, L., G91-096 Chait, Y., G91-093 Chandrasekhar, M. G., G91-070 Chang, B. C., G91-018 Chang, C. O., G91-153, G91-173 Chen, B., G91-089 Cheng, V. H. L., G91-059, G91-120, G91-196 Chiang, R. Y., G91-074 Chou, C. S., G91-153, G91-173 Choura, S., G91-180 Chowdhry, R. S., G91-054 Christhilf, D. M., G91-181 Chuang, C.-H., G91-085 Cleghorn, W. L., G91-113 Cliff, E. M., G91-054 Cochran, J. E., Jr., G91-015 Conway, B. A., G91-144 Corban, J. E., G91-178 Craig, R. R., Jr., G91-040, G91-194 Crawley, E. F., G91-073, G91-168 Creamer, N. G., G91-105

Crouch, P. E., G91-121

Cruz, C. I., G91-123 Curley, R. D., G91-059 da Cruz, J. J., G91-031 Damaren, C. J., G91-133 Davis, T. J., G91-125 de Matteis, G., G91-172, G91-174 de Silva, C. W., G91-095, G91-101 de Socio, L. M., G91-172 DeCou, A. B., G91-193 DeLaat, J. C., G91-049 D'Eleuterio, G. M. T., G91-133 Doyle, J. C., G91-001 Draim, J. E., G91-002 Durham, W. C., G91-055 Duxbury, T. C., G91-143 Dzielski, J., G91-013 Edwards, K., G91-143 Ekdal, O., G91-018 Enright, P. J., G91-144 Erzberger, H., G91-125 Feik, R. A., G91-017 Fennell, R. E., G91-181 Ferreira, L. D. D., G91-031 Fields, R. K., G91-099 Flandro, G. A., G91-178 Flashner, H., G91-074 Fletcher, J. W., G91-141 Fosha, C. E., Jr., G91-081 Friedmann, P. P., G91-191

Fujii, H., G91-067, G91-145 Gao, C., G91-137 Garcia, E., G91-111 Garg, S., G91-014, G91-058 Gawronski, W., G91-009, G91-102 Geering, H. P., G91-082 Geller, D., G91-170 Gilbert, E. G., G91-016 Gilbert, M. G., G91-147 Graham, D., G91-167 Green, S. M., G91-125 Grossman, W., G91-166 Grunwald, A. J., G91-091 Gu. Y., G91-098 Guelman, M., G91-164 Hablani, H. B., G91-044 Haftka, R. T., G91-117, G91-146 Hagood, N. W., G91-168 Hall, S. R., G91-050, G91-073, G91-075 Hankins, W. W., III, G91-101 Hanna, O. T., G91-184 Harper, R. E., G91-079 Heise, S. A., G90-158, G91-198 Henkel, E. E., G91-114 Hepner, S. A. R., G91-082 Hess, R. A., G91-024, G91-025, G91-137, G91-139

Hewlett, R. A., G91-114