

- Computation of unsteady transonic flows by the indicial method. W. F. Ballhaus and P. M. Goorjian (AIAA J) 117
- Computation of viscous transonic flow about a lifting airfoil. L. Walitt, L. S. King, and C. Y. Liu (AIAA J, SYN) 775
- Convergence of the adaptive-wall wind tunnel. C. F. Lo and E. M. Kraft (AIAA J) 67
- Detailed measurements on a circular cylinder in cross flow. V. S. Murthy and W. C. Rose (AIAA J, SYN) 549
- Experimental and computational steady and unsteady transonic flows about a thick airfoil. Lionel L. Levy Jr. (AIAA J) 564
- Experimental investigation of transonic flow past a blunt cylinder. M. A. Ramaswamy and G. Rajendra (JSR) 120
- Experimental observations of wall interference at transonic speeds. R. F. Starr (JA) 822
- Experimental studies of unsteady trailing-edge conditions. Bodapati Satyanarayana and Sanford Davis (AIAA J) 125
- Implicit approximate-factorization schemes for steady transonic flow problems. W. F. Ballhaus, A. Jameson, and J. Albert (AIAA J) 573
- Implicit finite-difference simulation of flow about arbitrary two-dimensional geometries. Joseph L. Steger (AIAA J) 679
- Implicit shock-fitting scheme for unsteady transonic flow computations. N. J. Yu, A. R. Seebass, and W. F. Ballhaus (AIAA J) 673
- Integral equation formulation for transonic flow past lifting wings. Sunil Kumar Chakrabartty (AIAA J, TN) 1015
- Integral method improvement for computation of transonic shock-wave—turbulent boundary-layer interactions. Dominique Aymer da la Chevalerie and Roger M. F. Leblanc (AIAA J, TN) 761
- Integrated scramjet installation effect on the subsonic performance of a hypersonic aircraft. P. J. Johnston, J. L. Pittman, and J. K. Huffman (JA) 326; JA, ERR 640
- Inviscid-viscous interaction in transonic flows about finite three-dimensional wings. W. Kordulla (AIAA J) 369
- Large amplitude shock-wave motion in two-dimensional, transonic channel flows. T. C. Adamson, Jr., A. F. Messiter, and M. S. Liou (AIAA J) 1240
- Lifting-line theory of oblique wings. H. K. Cheng (AIAA J, TN) 1211
- Load distribution on a close-coupled wing canard at transonic speeds. Blair B. Gloss and Karen E. Washburn (JA) 234
- New method of nozzle design. Ryuji Ishii (AIAA J, TN) 756
- Nonlinear formulation for low-frequency transonic flow. Wilson C. Chin (AIAA J, TN) 616
- Notes on the transonic indicial method. David Nixon (AIAA J, TN) 613
- Numerical solutions of the compressible hodograph equation. S. K. Liu and W. L. Chow (AIAA J, TN) 188
- Perturbation of a discontinuous transonic flow. David Nixon (AIAA J) 47
- Perturbations in two- and three-dimensional transonic flows. David Nixon (AIAA J) 699
- Perturbation solutions of unsteady transonic flow over bodies of revolution. Tsuying Hsieh (AIAA J) 1271
- Similar solutions for unsteady transonic flow. Wilson C. Chin (AIAA J, TN) 621
- Small unsteady perturbations in transonic flows. K.-Y. Fung, N. J. Yu, and R. Seebass (AIAA J) 815
- Some singular aspects of three-dimensional transonic flow. Wilson C. Chin (AIAA J, TN) 275
- Steady and unsteady transonic flow. H. L. Seegmiller, J. G. Marvin, and L. L. Levy Jr. (AIAA J) 1262
- Transonic computational analysis of F-111 TACT. A. W. Chen, E. N. Tinoco, and H. Yoshihara (JA) 601
- Transonic integral equation formulation for lifting profiles and wings. Pradip Niyogi (AIAA J, TN) 92
- Transonic lifting line theory—numerical procedure for shock-free flows. R. D. Small (AIAA J, TN) 632
- Transonic multifoil augmentor wing. J. E. Farbridge and Ronald C. Smith (JA) 755
- Transonic shockwave/turbulent-boundary-layer interaction with suction or blowing. G. R. Inger and S. Zee (JA) 750
- Transonic viscid-inviscid flow interaction about a hemisphere-cylinder. Tsuying Hsieh (AIAA J) 651
- Tunnel interference assessment by boundary measurements. C. F. Lo (AIAA J, TN) 411
- Type-independent solution for mixed compressible flows. Wilson C. Chin (AIAA J, TN) 854
- Unsteady transonic flows with shock waves in an asymmetric channel. John S. -K. Chan and T. C. Adamson Jr. (AIAA J) 377
- Development of a vorticity meter. S. P. Govinda Raju, V. S. Holla, A. Nigam, and M. P. Verghese (JA, EN) 799
- Equations governing surface streamlines. Ronald L. Panton (AIAA J, TN) 407
- Hypersonic three-dimensional viscous shock-layer flows over blunt bodies. Alvin L. Murray and Clark H. Lewis (AIAA J) 1279
- Hypersonic viscous shock-layer flow over a highly cooled sphere. John D. Waskiewicz, A. L. Murray, and Clark H. Lewis (AIAA J, TN) 189
- Implicit factored scheme for the compressible Navier-Stokes equations. Richard M. Beam and R. F. Warming (AIAA J) 393
- Investigation of strut-wall intersection losses. T. J. Barber (JA) 676
- Management of swirling flows with application to wind tunnel design. R. A. Wigeland, M. Ahmed, and H. M. Nagib (AIAA J) 1125
- Method for the numerical solution of turbulent flow problems. J. C. Wu and A. Sugavanam (AIAA J) 948
- Note on turbulent swirling flows. V. Kuppu Rao and Jyotirmoy Dey (AIAA J, TN) 409
- Notes on the flow near a wall and dividing streamline intersection. B. S. Dandapat and A. S. Gupta (AIAA J, TN) 849
- Spin decay of liquid-filled projectiles. C. W. Kitchens Jr., N. Gerber, and R. Sedney (JSR) 348
- Subsonic axisymmetric near-wake studies. R. A. Merz, R. H. Page, and C. E. G. Przirembel (AIAA J) 656
- Viscous compressible flow in the boundary region of an axial corner. A. G. Mikhail and K. N. Ghia (AIAA J) 931
- Viscous shock-layer solutions for hypersonic sphere cones. B. N. Srivastava, M. J. Werle, and R. T. Davis (AIAA J) 137
- Vorticity measurements using calibrated vane-vorticity indicators and cross-wires. R. A. Wigeland, M. Ahmed, and H. M. Nagib (AIAA J) 1229

Wave Motion and Sloshing

- Ionospheric Doppler sounder for detection and prediction of severe storms. R. J. Hung, T. Phan, and R. E. Smith (AIAA J, TN) 763; AIAA J, ERR 1024
- Noise reduction using paired pulse combustors. Robert D. Giammar and Abbott A. Putnam (JE, TN) 319
- Weakly-nonlinear, long internal gravity waves in stratified fluids of finite depth. T. Kubota, D. R. S. Ko, and L. D. Dobbs (JH) 157

INTERDISCIPLINARY TOPICS

Aerospace Management

- Energy's challenge to aerospace. Robert C. Seamans Jr. and Frederick I. Ordway (JE) 65

Aerospace Technology Utilization

- Acceptance testing of the JTIDS Class II terminal by augmented minicomputer. Monte H. Wallenstein (JA) 387
- Application of CCD technology to produce imagery from radar data. W. E. Arens (JA) 21
- Fluid dynamics of diffuser-augmented wind turbines. Barry L. Gilbert, Richard A. Oman, and Kenneth M. Foreman (JE) 368
- Ocean mining requirements. B. J. Livesay, A. Steen, and Richard L. DeMott (JH) 89
- SPS microwave subsystem potential impacts and benefits Richard M. Dickenson (PS, V. 61) 25
- Skylab detection of an algal bloom in the Gulf of Mexico. William R. Johnson and Dean R. Norris (JSR, EN) 317
- Solar power satellite concept: a space program perspective. Christopher C. Kraft Jr. (JE) 193
- Solar power satellite concept evaluation program. Robert O. Piland (PS, V. 61) 3
- Tactical air warfare of the future. James D. Hughes (JA) 134
- Theory and performance for position and gravity survey with an inertial system. James R. Huddle (JGC) 183
- Use of lasers for the transmission of power. J. Frank Coneybear (PS, V. 61) 279

Analytical and Numerical Methods

- Aerodynamic analysis of several hypersonic research airplane concepts from $M=0.2$ to 6.0 . Jim A. Penland, James L. Dillon, and Jimmy L. Pillman. (JA) 716
- Algorithms for isolating worst case systematic data errors. David W. Curkendall (JGC) 56
- Analysis of structural shock transmission. Peter Crimi (JSR) 79
- Celestial mechanics during the two decades 1957-1977. Victor Szebeheley (JGC, SA) 387
- Comments on "An analytical and experimental study for surface heat flux determination." James V. Beck (JSR, TC) 381
- Reply by authors to James V. Beck. S. D. Williams and Donald M. Curry (JSR, TC) 382
- Comparative study of the convergence rates of two numerical techniques. Ajay Kumar and R. A. Graves, Jr. (AIAA J, TN) 1214

Viscous Nonboundary-layer Flows

- Analysis of unsteady viscous flow past an airfoil: part II—numerical formulation and results. Zygmunt M. Cielak and Robert B. Kinney (AIAA J) 105
- Basic study of the VTOL ground effect problem for planar flow. D. R. Kotansky and W. W. Bower (JA) 214
- Critique of a second-order upwind scheme for viscous flow problems. Murli M. Gupta and Ram P. Manohar (AIAA J, TN) 759

- Design and evaluation of sensor systems for state and parameter estimation. Narendra K. Gupta and W. Earl Hall Jr. (JGC) 397
- Digital control law synthesis in the w domain. R. F. Whitbeck and L. G. Hofmann (JGC) 319
- Dynamic analysis of an in-flight refueling system. J. Eichler (JA) 311
- Effect of mixing rate on pressure fields in chemical laser cavities. S. W. Zelazny and W. L. Rushmore (PS, V. 58) 141
- Epoch state navigation filter. Richard H. Battin, Steven R. Croopnick, and Joan E. Lenox (JGC) 359
- Extension of region of convergence in orbit determination using function-minimization techniques. V. Adimurthy and K. V. Joy (JGC, EN) 445
- Finite deformation of anisotropic plastic rotating disks. William W. Feng (AIAA J, TN) 1205
- Finite-element methodology for thermal analysis of convectively cooled structures. Earl A. Thornton and Allan R. Wieting (PS, V. 60) 171
- Functionality determination of hydroxyl-terminated prepolymers. A. E. Oberth (AIAA J) 919
- In-flight gyro drift rate calibration on the Viking orbiters. William G. Breckenridge and Alfred J. Treder (JGC) 433
- Linear stochastic control using the UDU^T matrix factorization. Catherine L. Thornton and Robert A. Jacobson (JGC) 232
- Minimum-time loop maneuvers of jet aircraft. Sachio Uehara, Homer J. Stewart, and Lincoln J. Wood (JA) 449
- Model reference adaptive identifier design and analysis. Bruce K. Colburn and J. S. Boland III (JGC, EN) 379
- New transformation invariant in the orbital boundary-value problem. Richard H. Battin, Thomas J. Fill, and Stanley W. Shepperd (JGC) 50
- Non-Gaussian gust model for aircraft response analysis. W. S. Pi and Chintsun Hwang (AIAA J, SYN) 641
- Nonlinear method for parameter identification applied to a trajectory estimation problem. David G. Hull and Walton E. Williamson (JGC, EN) 286
- Optimal digital simulation of aircraft via random search techniques. Guy O. Beale and Gerald Cook (JGC) 237
- Optimal frequency separation of cylindrical shells. Michael Pappas (AIAA J, TN) 999
- Parabolic approximation for sound propagation in the atmosphere. M. K. Myers and G. L. McAninch (AIAA J) 836
- Quaternion from rotation matrix. Stanley W. Shepperd (JGC, EN) 223
- Relation between the Lagrangian and Eulerian turbulent velocity autocorrelations. Chester A. Koper Jr., Willy Z. Sadeh, and Robert E. Turner (AIAA J) 969
- Singular optimal control computation. William F. Powers, Bang-Dar Cheng, and Ernest R. Edge (JGC) 83
- Specification of spacecraft flexible appendage rigidity. S. M. Seltzer and H. L. Shelton (JGC) 427
- Stirling engine modal analysis program. A. Schock (JE) 354
- Theory and performance for position and gravity survey with an inertial system. James R. Huddle (JGC) 183
- Time varying terminally restrained optimal control assessment. J. A. Gibson and W. Sew Hoy (AIAA J) 12
- Vibration statistics of thin plates with complex form. Aleksander Waberski (AIAA J) 788
- Wind design by numerical optimization. Raymond M. Hicks and Preston A. Henne (JA) 407

Atmospheric and Space Sciences

- Analytical prediction of moisture absorption in composites. D. R. Tenney and J. Unnam (JA) 148
- Attitude determination system for a nadir-pointing satellite. W. F. Havens and H. Ohtakay (JGC) 352
- Axisymmetric implicit blunt-body computations of solar wind flows past planets. Denny S. Chaussee, Stephen S. Stahara, and John R. Spreiter (AIAA J, SYN) 647
- Correlation model for turbulence along the glide path. Lloyd D. Reid (JA) 13
- Determination of stack plume properties from satellite imagery. W. Frank Staylor (JSR) 92
- Generation of new coherent radiation by harmonic conversion and nonlinear mixing for certain applications. C. Y. She (PS, V. 61) 602
- Integrated approach to the problem of aircraft icing. D. W. Newton (JA) 374
- Laser-enhanced dynamics in molecular rate processes. T. F. George, I. H. Zimmerman, P. L. DeVries, J. -M. Yuan, K. -S. Lam, J. C. Bellum, H. -W. Lee, and M. S. Slutsky (PS, V. 61) 583
- Mars and the remarkable Viking results. Gerald A. Soffen (JSR, Dryden Lectureship in Research) 193
- Nonuniform propagation on sonic discontinuities through thermally conducting gases. Rama Shankar and Mohan Prasad (AIAA J, TN) 852
- Ocean mining requirements. B. J. Livesay, A. Steen, and Richard L. DeMott (JH) 89

- Relation between the Lagrangian and Eulerian turbulent velocity autocorrelations. Chester A. Koper Jr., Willy Z. Sadeh, and Robert E. Turner (AIAA J) 969
- Satellite positive-ion-beam system. T. D. Masek and H. A. Cohen (JSR) 27

Computer Communications, Information Processing and Software

- Acceptance testing of the JTIDS Class II terminal by augmented minicomputer. Monte H. Wallenstein (JA) 387
- Advanced methods of model structure determination from test data. Narendra K. Gupta, W. Earl Hall Jr., and Thomas L. Trankle (JGC) 197
- Algorithms for isolating worst case systematic data errors. David W. Curkendall (JGC) 56
- Kalman filter divergence and aircraft motion estimators. Arthur E. Bryson Jr. (JGC) 71
- Laser-Raman optical multichannel analyzer for transient gas concentration profile and temperature determination. Philip C. Black and Richard K. Chang (AIAA J, SYN) 295
- Linear stochastic control using the UDU^T matrix factorization. Catherine L. Thornton and Robert A. Jacobson (JGC) 232
- Method for determining the weak statistical stationarity of a random process. Willy Z. Sadeh and Chester A. Koper, Jr. (AIAA J) 1196
- Performance analysis of particularly simple Kalman filter. Peter S. Maybeck (JGC) 391

Computer Technology

- Comment on "Singularity-free extraction of a quaternion from a direction-cosine matrix." Richard A. Spurrier (JSR, TC) 255
- Reply by author to R. A. Spurrier. Allan R. Klumpp (JSR, TC) 256
- Computer-aided inspection of near-net-shape turbine disks. J. E. Doherty, J. M. LaGrotta, and E. Wheeler (JA) 413
- Digital computer application in the F-15 engine air inlet control system. C. J. Scherz and L. E. Williams (JGC) 420
- Sneak circuit and software sneak analysis. S. G. Godoy and G. J. Engels (JA) 509

Human Factors

- Design criteria for aircraft warning, caution, and advisory alerting systems. J. E. Veitengruber (JA) 574
- Display augmentation in manual control of remotely piloted vehicles. S. J. Merhav and A. J. Grunwald (JA) 182
- KC-135 boom operator's head-up display. Richard L. Newman (JA, EN) 124
- Passenger ride quality in transport aircraft. Ira D. Jacobson, A. Robert Kuhlthau, Larry G. Richards, and D. William Conner (JA) 724
- Ride quality flight testing. Robert L. Swaim (JGC, EN) 159

Lasers

- Accelerating convergence of unstable resonator calculations with a gain medium. Kuei-Yuan Chien and Walter J. Glowacki (AIAA J, TN) 627
- Analytic modeling of turbulent shear flow with chemical reaction. William B. Bush and Francis E. Fendell (PS, V. 58) 3
- Aspects of turbulent combustion. A. K. Varma, E. S. Fishburne, and C. duP. Donaldson (PS, V. 58) 117
- CO₂ laser-driven stirling engine. George Lee, Richard L. Perry, and Bruce Carney (JE) 203
- CW laser propulsion. H. H. Legner and D. H. Douglas-Hamilton (JE) 85
- Direct nuclear-pumped lasers using the ³He(n,p)³H reaction. R. J. DeYoung, N. W. Jalufka, and F. Hohl (AIAA J) 991
- Direct nuclear pumping by a volume source of fission fragments. J. E. Deese and H. A. Hassan (AIAA J) 1030
- Effect of mixing rate on pressure fields in chemical laser cavities. S. W. Zelazny and W. L. Rushmore (PS, V. 58) 141
- Flow generated by an array of eccentric porous tubes. Kwok-On Tong, Charles J. Knight, and Joel M. Avidor (AIAA J, TN) 747
- Gas breakdown thresholds in flame induced by Ruby laser. Gary L. Switzer, Carl G. Meyers Jr., Won B. Roh, and Paul W. Schreiber (AIAA J, TN) 766
- Generation of new coherent radiation by harmonic conversion and nonlinear mixing for certain applications. C. Y. She (PS, V. 61) 602
- Impulse transfer from pulsed CO₂ laser irradiation at reduced ambient pressures. Ven H. Shui, Lee A. Young, and James P. Reilly (AIAA J, SYN) 649
- Investigation of jet curtains for chemical laser application. S. Boraas (AIAA J) 251
- Laser aircraft propulsion. Abraham Hertzberg and Kenneth Sun (PS, V. 61) 243
- Laser assisted propulsion research. D. H. Douglas-Hamilton, A. R. Kantrowitz, and D. A. Reilly (PS, V. 61) 271
- Laser based diagnostic techniques for combustion research. S. Lederman (PS, V. 58) 291

- Laser-enhanced dynamics in molecular rate processes. T. F. George, I. H. Zimmerman, P. L. Devries, J. -M. Yuan, K. -S. Lam, J. C. Bellum, H. -W. Lee, and M. S. Slutsky (PS, V. 61) 583
- Laser-induced impulse to a phenolic surface. Peter K. Wu and Peter E. Nebolsine (AIAA J, TN) 1101
- Laser manipulation of metallic vapors. William C. Stwalley (PS, V. 61) 593
- Laser system to measure rocket attitude in flight. K. M. Pell, J. E. Nydahl, R. G. Conrad, and D. B. Brown (JSR) 224
- Modeling DF/HF CW lasers: an examination of key assumptions. S. W. Zelazny, R. J. Driscoll, J. W. Raymond, J. A. Blauer, and W. C. Solomon (AIAA J) 297
- Momentum modulation of free electrons by laser light. W. D. Kimura, R. H. Pantell, M. A. Piestrup, and G. B. Rothbart (PS, V. 61) 368
- New candidate lasers for power beaming and discussion of their applications. John D. G. Rather (PS, V. 61) 313
- New concept for solar pumped lasers. Walter H. Christiansen (PS, V. 61) 346
- New mixing gasdynamic laser. P. Cassady, J. Newton, and P. Rose (AIAA J) 305
- Overview of novel photovoltaic conversion techniques at high intensity levels. Richard J. Stirn (PS, V. 61) 136
- Particle size and velocity measurement by laser anemometry. A. J. Yule, N. A. Chigier, S. Atakan, and A. Ungut (PS, V. 58) 247
- Particle size measurement by laser anemometry. A. Ungut, A. J. Yule, D. S. Taylor, and N. A. Chigier (JE) 330
- Photoinduced currents in metal-barrier-metal junctions. M. P. Guedes, T. K. Gustafson, M. Heiblum, D. P. Siu, C. W. Slayman, J. R. Whinnery, and Y. Yasuoka (PS, V. 61) 524
- Plasma energy transfer to metal surfaces irradiated by pulsed lasers. A. N. Pirri, R. G. Root, and P. K. S. Wu (AIAA J) 1296
- Quasi-isentropic laser engines. M. Garbuny (PS, V. 61) 479
- Rapid laser induced energy transfer in atomic systems. Stephen E. Harris and James F. Young (PS, V. 61) 569
- Resonance refractivity studies of sodium vapor for enhanced flow visualization. G. Blendstrup, D. Bershader, and P. W. Langhoff (AIAA J, TN) 1106
- Review of the thermoelectronic laser energy converter (TELEC) program at Lewis Research Center. D. L. Alger, E. J. Manista, and R. W. Thompson (PS, V. 61) 437
- Search for space energy alternatives. William P. Gilbreath and Kenneth W. Billman (PS, V. 61) 107
- Solar pumped continuous wave carbon dioxide laser. Oktay Yesil and Walter H. Christiansen (PS, V. 61) 357
- Some effects of unstable resonators on performance of CW chemical lasers. W. J. Glowacki, K. -Y. Chien, and W. P. Altman (AIAA J, TN) 1112
- Status and summary of laser energy conversion. George Lee (PS, V. 61) 549
- Superelastic laser energy conversion (SELEC). Raymond M. Measures, Norbert Drewell, and Paul Cardinal (PS, V. 61) 450
- TELEC—a plasma type of direct energy converter. Edward J. Britt (PS, V. 61) 421
- Turbulent fluctuations in the wakes of gasdynamic laser cusps. Anthony Demetriades (JE, TN) 124
- Law, History, Policy, and Sociology**
- Panel discussion: alternative fuels policy. Jerry Grey (Moderator), E. Eugene Ecklund, A. Lee Wallace, and Charles A. Weisel (PS, V. 62) 425
- Reliability, Maintainability, and Logistics Support**
- Bayesian estimation of crack initiation times from service data. R. A. Heller and G. H. Stevens. (JA) 794
- Computer-aided inspection of near-net-shape turbine disks. J. E. Doherty, J. M. LaGrotta, and E. Wheeler (JA) 413
- Developing normalized crack growth curves for tracking damage in aircraft. J. P. Gallagher and H. D. Stalnaker (JA) 114
- Diagnostic system requirements for helicopter propulsion systems. John A. Murphy (JA) 333
- Tracking potential crack growth damage in U. S. Air Force aircraft. J. P. Gallagher, A. F. Grandt, Jr., and R. L. Crane (JA) 435
- Research Facilities and Instrumentation**
- Comment on "Extensions of dual-plate holography interferometry". A. E. Fuhs (AIAA J, TC) 287
- Reply by authors to A. E. Fuhs. B. W. Hannah and W. L. King Jr. (AIAA J, TC) 287
- Diagnostics of rocket plume-airstream turbulent mixing using laser-Raman scattering. W. D. Williams, H. M. Powell, R. L. McGuire, L. L. Price, J. H. Jones, D. P. Weaver, and J. W. L. Lewis (PS, V. 58) 273
- Driver gas contamination in a high-enthalpy reflected shock tunnel. R. J. Stalker and K. C. A. Crane (AIAA J, TN) 277
- Effects of space radiation on thin polymers and nonmetallics. Lawrence B. Fogdall and Sheridan S. Cannaday (PS, V. 60) 290
- Gas breakdown thresholds in flame induced by Ruby laser. Gary L. Switzer, Carl G. Meyers Jr., Won B. Roh, and Paul W. Schreiber (AIAA J, TN) 766
- Laser system to measure rocket attitude in flight. K. M. Pell, J. E. Nydahl, R. G. Conrad, and D. B. Brown (JSR) 224
- Management of swirling flows with application to wind tunnel design. R. A. Wigeland, M. Ahmed, and H. M. Nagib (AIAA J) 1125
- Optimum operating technique of two-stage hypersonic gun tunnel. Takeyoshi Kimura, Chiaki Kuwata, and Yoshikazu Nadai (AIAA J) 1185
- Particle size and velocity measurement by laser anemometry. A. J. Yule, N. A. Chigier, S. Atakan, A. Ungut (PS, V. 58) 247
- Thermocouple signal processing and on-line digital compensation. A. J. Yule, D. S. Taylor, and N. A. Chigier (JE) 223
- Use of a water channel for model tests on planing hulls. Adrian Millward (JH) 129
- V/STOL aerodynamic testing techniques at British Aircraft Corporation. P. G. Knott (JA) 339
- Vorticity measurements using calibrated vane-vorticity indicators and cross-wires. R. A. Wigeland, M. Ahmed, and H. M. Nagib (AIAA J) 1229
- Safety**
- Antimisting fuel kinematics related to aircraft crash landings. Anthony San Miguel (JA) 137
- Detecting abnormal turbine engine deterioration using electrostatic methods. Robert P. Couch (JA) 692
- Developing normalized crack growth curves for tracking damage in aircraft. J. P. Gallagher and H. D. Stalnaker (JA) 114
- Ignition of a combustible mixture by a hot particle. C. K. Law (AIAA J, TN) 628
- Mathematical simulation for crashworthy aircraft seat design. David H. Laananen (JA) 567
- Parachute canopy stress measurements at steady state and during inflation. H. G. Heinrich and David P. Saari (JA) 534
- Scaling law for estimating liquid propellant explosive yields. Louis C. Sutherland (JSR, EN) 124
- Satellite Communication Systems (including Terrestrial Stations)**
- Orbital perturbations and stationkeeping of communication satellites. Shashi Kant Shrivastava (JSR, SP) 67
- Sensor Systems**
- Analysis of a magnetically suspended, high-performance instrument pointing system. Suresh M. Joshi (JGC) 150
- Application of CCD technology to produce imagery from radar data. W. E. Arens (JA) 21
- Attitude determination system for a nadir-pointing satellite. W. F. Havens and H. Ohtakay (JGC) 352
- Design and evaluation of sensor systems for state and parameter estimation. Narendra K. Gupta and W. Earl Hall Jr. (JGC) 397
- Detecting abnormal turbine engine deterioration using electrostatic methods. Robert P. Couch (JA) 692
- Ionospheric Doppler sounder for detection and prediction of severe storms. R. J. Hung, T. Phan, and R. E. Smith (AIAA J, TN) 763; AIAA J, ERR 1024
- Ocean surface measurement using elevations from GEOS-3 altimeter. C. D. Leita, N. E. Huang, and C. G. Parra (JSR) 362
- Optimal updating of INS using sighting devices. Itzhack Y. Bar-Itzhack (JGC) 305
- Performance analysis of a particularly simple Kalman filter. Peter S. Maybeck (JGC) 391
- Redundant integrated flight-control/navigation inertial sensor complex. R. E. Ebner and J. G. Mark (JGC) 143; (JGC, ERR) 384
- Theory and performance for position and gravity survey with an inertial system. James R. Huddle (JGC) 183
- Space Processing**
- Continuous flow electrophoretic separator for biologicals. L. R. McCreight, R. N. Griffin, R. J. Locker, and J. A. Giannovario (AIAA J) 471
- Convection analysis of the dendrite remelting rocket experiment. P. G. Grodzka, M. H. Johnston, and C. S. Griner (AIAA J, SYN) 417
- Crystal growth from solutions in low gravity. M. D. Lind (AIAA J) 458
- Deflected-laminar electrophoresis (DLE): high performance separation of biologicals in space. Allen Strickler (AIAA J) 463
- Interaction of bubbles with solidification interfaces. J. M. Papazian and W. R. Wilcox (AIAA J) 447
- Microgravity studies in the liquid-phase immiscible system: aluminum-indium. S. H. Gelles and A. J. Markworth (AIAA J) 431
- New candidate lasers for power beaming and discussion of their applications. John D. G. Rather (PS, V. 61) 313

- Preparation of SiC whisker-reinforced silver composite material on Skylab. Sennosuke Takahashi (AIAA J) 452
 SPS cost considerations. Gordon R. Woodcock (JE) 196
 Surface-tension induced convection at reduced gravity. Simon Ostrach and Avind Pradhan (AIAA J) 419
 Theoretical models for metal growth in space—comparison to ground experiments. R. I. Miller and M. H. Johnston (AIAA J) 439

LAUNCH VEHICLE AND MISSILE (LV/M) TECHNOLOGY

LV/M Aerodynamic Heating and Ablation

- Ablation measurement on the gasjet nose tip. John C. Donohoe, Thomas A. Blackstock, and J. Wayne Keyes (PS, V. 59) 368
 Aerothermodynamic base heating. Y. Inoue and R. H. Page (PS, V. 59) 49
 Asymmetric nose-tip shape change during atmospheric entry. R. B. Dirling, Jr. (PS, V. 59) 311
 Investigation of a side force due to ablation. W. C. Ragsdale and E. V. Horanoff (AIAA J, TN) 1010
 Three-dimensional shock-wave interference heating prediction. F. T. Hung (PS, V. 59) 91

LV/M Aerodynamics

- Aerodynamic coefficient prediction technique for finned missiles at high incidence. William B. Baker Jr. (JSR) 328
 Aerodynamics of ballistic re-entry vehicles with asymmetric nosetips. D. W. Hall and D. T. Nowlan (JSR) 55
 Comparison of predicted and flight test trajectories of stores jettisoned from aircraft. Sridhar M. Ramachandra (JA, SYN) 641
 Diffraction of a shock wave by a compression corner: Part II—Single Mach reflection. Vijaya Shankar, Paul Kutler, and Dale Anderson (AIAA J, SYN) 4
 Dynamics derivatives for missile configurations to Mach number three. Frank G. Moore and Roy C. Swanson Jr. (JSR, SYN) 65
 Dynamics design considerations for an impulsed-corrected, laser-guided rocket. Kenneth K. Cobb (JGC) 293
 Floating shock fitting for cones at large incidence. James Daywitt, Paul Kutler, and Dale Anderson (AIAA J) 385
 Free-flight rocket's initial trajectory as affected by massive blowby. Daniel W. Barnette, John J. Bertin, and James L. Batson (JSR) 334
 Influence of rear body eccentricity on supersonic base pressure. J. N. Mishra and Indushekar Das (AIAA J) 166
 Investigation of a side force due to ablation. W. C. Ragsdale and E. V. Horanoff (AIAA J, TN) 1010
 Maximum vortex-induced side force. J. Peter Reding and Lars E. Ericsson (JSR) 201
 Method for design of feedback control to limit missile dispersion. D. H. Platus and Julian Wolkovitch (JGC) 440
 Model for bomblet ejection from missiles. Raymond Sedney (JSR) 229
 Perturbation solutions of unsteady transonic flow over bodies of revolution. Tsuying Hsieh (AIAA J) 1271
 Resonant behavior of a symmetric missile having roll orientation-dependent aerodynamics. Thomas R. Pepitone and Ira D. Jacobson (JGC) 335
 Static stability comparison of a conical and biconic configuration. Kenneth F. Stetson and Arthur B. Lewis (JSR, SYN) 257

LV/M Command and Information Systems

- Electrostatic roll sensor for supersonic vehicles Part I: feasibility and flight tests. J. L. Frierson, F. G. Moore, and R. L. Van Meter (JA) 195

LV/M Configurational Design

- Aerodynamic coefficient prediction technique for finned missiles at high incidence. William B. Baker Jr. (JSR) 328
 Dynamics derivatives for missile configurations to Mach number three. Frank G. Moore and Roy C. Swanson Jr. (JSR, SYN) 65

LV/M Dynamics and Control

- Aerodynamic interference during sabot discard. E. M. Schmidt and D. D. Shear (JSR) 162
 Control law for an intercept system. K. C. Wei and A. E. Pearson (JGC) 298
 Digital control law synthesis in the w' domain. R. F. Whitbeck and L. G. Hofmann (JGC) 319
 Dynamics design considerations for an impulsed-corrected, laser-guided rocket. Kenneth K. Cobb (JGC) 293
 Influence of moving internal parts on angular motion of spinning projectiles. Charles H. Murphy (JGC) 117
 Method for design of feedback control to limit missile dispersion. D. H. Platus and Julian Wolkovitch (JGC) 440

- Projectile instability produced by internal friction. William G. Soper (AIAA J) 8
 Resonant behavior of a symmetric missile having roll orientation-dependent aerodynamics. Thomas R. Pepitone and Ira D. Jacobson (JGC) 335
 Simple numerical modal for calculation of entry vehicle trim response. Thomas D. Burton (JSR, EN) 319
 Trajectory perturbations of asymmetric fin-stabilized projectiles caused by muzzle blast. Kevin S. Fansler and Edward M. Schmidt (JSR, EN) 62

LV/M Guidance

- Dual-control guidance strategy for homing interceptors taking angle-only measurements. Richard James Casler Jr. (JGC) 63
 Electrostatic roll sensor for supersonic vehicles Part I: feasibility and flight tests. J. L. Frierson, F. G. Moore, and R. L. Van Meter (JA) 195
 Evaluation of parity equations for gyro failure detection and isolation. Arthur L. Satin and Robert L. Gates (JGC) 14
 Optimal updating of INS using sighting devices. Itzhack Y. Bar-Itzhack (JGC) 305

LV/M Mission Studies and Economics

- Cost vs performance in propulsion system design. A. R. Maykut (JSR) 100
 SPS cost considerations. Gordon R. Woodcock (JE) 196

LV/M Propulsion and Propellant Systems

- Capillary device passive thermal conditioning. M. H. Blatt and J. C. Aydelott (JSR) 236
 Cost vs performance in propulsion system design. A. R. Maykut (JSR) 100
 Crack propagation in double-based propellants. S. W. Beckwith and D. T. Wang (JSR) 355
 New Prepolymer: lactone-terminated polybutadiene (LTPB) for high-energy solid propellants. K. V. C. Rao, Jayadev Sreedhar, T. L. Varghese, and V. R. Gowariker (JSR) 293

LV/M Simulation

- Dynamics design considerations for an impulsed-corrected, laser-guided rocket. Kenneth K. Cobb (JGC) 293
 Wind-tunnel simulation of high-altitude rocket plumes. James Stark Draper and James P. Moran (JSR, SYN) 129

LV/M Structural Design (including Loads)

- Analysis of structural shock transmission. Peter Crimi (JSR) 79
 Effect of various misalignments on static aeroelastic characteristics of guided launch vehicles. N. G. Humbad (JSR, EN) 252
 Launch vehicle payload interface response. Jay C. Chen, Ben K. Wada, and John A. Garba (JSR) 7
 Static aeroelastic analysis of guided slender launch vehicles. N. G. Humbad (JSR) 12

LV/M Testing, Flight and Ground

- Free-flight rocket's initial trajectory as affected by massive blowby. Daniel W. Barnette, John J. Bertin, and James L. Batson (JSR) 334
 Spin decay of liquid-filled projectiles. C. W. Kitchens, Jr., N. Gerber, and R. Sedney (JSR) 348

LV/M Trajectories and Tracking Systems

- Aerodynamic interference during sabot discard. E. M. Schmidt and D. D. Shear (JSR) 162
 Tank breakup fragment distribution model. C. Johnson and J. M. Taylor (JSR) 168
 Trajectory perturbations of asymmetric fin-stabilized projectiles caused by muzzle blast. Kevin S. Fansler and Edward M. Schmidt (JSR, EN) 62

LV/M Vibration

- Dynamics of short eccentric plain seals with high axial Reynolds number. P. E. Allaire, C. C. Lee, and E. J. Gunter (JSR) 341

Launch Vehicle Systems

- Energy impact assessment of NASA's past, present, and future space launch vehicles. Eric Edward Rice (JE) 182
 Evaluation of parity equations for gyro failure detection and isolation. Arthur L. Satin and Robert L. Gates (JGC) 14
 Parallel-burn options for dual-fuel single-stage orbital transports. James A. Martin (JSR) 4