## **Chronological Index**

**J81-258 Finite Elements for Initial Value Problems in Dynamics.** T. E. Simkins, *U. S. Army Armament Research and Development Command* (19, 10, p. 1357) Article

Readers' Forum (22, 8, p. 1178)

Reply (22, 8, p. 1179)

J82-062 A New Solution Method for Lifting Surfaces in Subsonic Flow. T. Ueda and E. H. Dowell, *Princeton University* (20, 3, p. 348) Article

Technical Comment by W. P. Rodden, La Canada Flint-ridge (22, 1, p. 160)

Reply (22, 4, p. 575)

J82-130 Hamilton's Principle, Hamilton's Law---6n Correct Formulations. Menahem Baruch and Richard Riff, Technion---Israel Institue of Technology (20, 5, p. 687) Article Technical Comment by C. V. Smith Jr., Georgia Institute of Technology (22, 8, p. 1181)

Reply (22, 8, p. 1182)

J82-243 Generalized Coordinate Forms of Governing Fluid Equations and Associated Geometrically Induced Errors. Richard G. Hindman, *Iowa State University* (20, 10, p. 1359) Article based on AIAA Paper 81-1008 CP814

Technical Comment by Samuel Paolucci, Sandia National Laboratories (22, 5, p. 731)

Reply (22, 5, p. 732)

J83-052 Flutter of Orthotropic Panels in Supersonic Flow Using Affine Transformations. Gabriel A. Oyibo, Rensselaer Polytechnic Institute (21, 2, p. 283) Article

Technical Comment by Patricio A. A. Laura, *Institute of Applied Mechanics (Argentina)* (22, 4, p. 574)

Reply (22, 4, p. 575)

J83-134 Spectral Analysis Algorithms for the Laser Velocimeter: A Comparative Study. W. A. Bell, Lockheed-Georgia Company (21, 5, p. 714) Article based on AIAA Paper 81-1196 Technical Comment by M. Gaster, NMI Limited (United Kingdom); and J. B. Roberts, University of Sussex (22, 5, p. 730)

Reply (22, 5, p. 731)

J83-136 Application of a Three-Sensor Hot-Wire Probe for Incompressible Flow. T. L. Butler, Pratt & Whitney Aircraft Group; and J. W. Wagner, United Technologies Research Center (21, 5, p. 726) Article based on AIAA Paper 82-0195 Technical Comment by Jannis Andreopoulos, University of Karlsruhe (22, 6, p. 863)

Reply (22, 6, p. 863)

J83-139 An Alternating Method for Analysis of Surface-Flawed Aircraft Structural Components. T. Nishioka and S. N. Atluri, Georgia Institute of Technology (20, 5, p. 749) Article based on AIAA Paper 81-0497 CP811

Errata (22, 3, p. 447)

J83-190 Minimum-Weight Design of an Orthotropic Shear Panel with Fixed Flutter Speed. L. Beiner, Ben Gurion University; and L. Librescu, Tel Aviv University (21, 7, p. 1015) Synoptic

Technical Comment by Alexander H. Flax, *Institute for Defense Analyses* (22, 5, p. 733)

Reply (22, 5, p. 734)

J83-197 Derivation of the Fundamental Equation of Sound Generated by Moving Aerodynamic Surfaces. Hans R. Aggarwal, *University of Santa Clara* (21, 7, p. 1048) Technical Note

Technical Comment by F. Farassat, NASA Langley Research Center (22, 8, p. 1183)

Reply (22, 8, p. 1184)

**J83-262 Thrust Augmenting Ejectors, Part I.** Morton Alperin and Jiunn-Jenq Wu, *Flight Dynamics Research Corporation* (21, 10, p. 1428) Article

Technical Comment by George Emanuel, University of Oklahoma (22, 7, p. 1023)

Reply (22, 7, p. 1023)

J83-268 A Low Mach Number Euler Formulation and Application to Time-Iterative LBI Schemes. W. R. Briley, H. McDonald and S. J. Shamroth, Scientific Research Associates, Inc. (21, 10, p. 1467) Technical Note Errata (22, 12, p. 1830)

J84-001 A Vortex-Lattice Method for Calculating Longitudinal Dynamic Stability Derivatives of Oscillating Delta Wings. D. Levin, NASA Ames Research Center (22, 1, p. 6) Article based on AIAA Paper 81-1876 CP816

J84-002 Numerical Computations of Turbulence Amplification in Shock-Wave Interactions. Thomas A. Zang, College of William and Mary; M. Y. Hussaini, Institute for Computer Applications in Science and Engineering, NASA Langley Research Center; and Dennis M. Bushnell, NASA Langley Research Center (22, 1, p. 13) Article based on AIAA Paper 82-0293

J84-003 Unsteady Turbulent Boundary Layers in Adverse Pressure Gradients. Eugene E. Covert and Peter F. Lorber, Massachusetts Institute of Technology (22, 1, p. 22) Article based on AIAA Paper 82-0966

J84-004 Supersonic Compressive Ramp Without Laminar Boundary-Layer Separation. George Emanuel, *University of Oklahoma* (22, 1, p. 29) Article

J84-005 A Theoretical and Experimental Investigation of a Transonic Projectile Flowfield. Charles J. Nietubicz, U. S. Army Ballistic Research Laboratory/ARDC; George R. Inger, West Virginia University; and James E. Danberg, University of Delaware (22, 1, p. 35) Article based on AIAA Paper 82-0101 Errata (22, 5, p. 736)

J84-006 Maximum Likelihood Estimation of Turbulence Spectrum Parameters. William D. Mark, *Bolt Beranek and Newman Inc.* (22, 1, p. 42) Article

**J84-007** Aeroacoustic Computation of Cylinder Wake Flow. Jay C. Hardin, *NASA Langley Research Center*; and Stanley L. Lamkin, *Kentron International* (22, 1, p. 51) Article based on AIAA Paper 83-0736

J84-008 The Optical Quality of Shear Layers: Prediction and Improvement Thereof. D. W. Bogdanoff, *University of Washington* (22, 1, p. 58) Article

J84-009 Effect of Reactant-Surface Stretching on Chemical Laser Performance. Richard J. Driscoll, *Bell Aerospace Textron* (22, 1, p. 65) Article

- J84-010 Atmospheric Propagation of Two CO<sub>2</sub> Laser Pulses. M. Autric, J-P. Caressa, D. Dufresne and Ph. Bournot, *Institute of Fluid Mechanics (France)* (22, 1, p. 75) Article based on AIAA Paper 82-0896
- J84-011 Secondary Effects in Combustion Instabilities Leading to Flashback. L. Vaneveld, A. K. Oppenheim and K. Hom, *University of California* (22, 1, p. 81) Synoptic based on AIAA Paper 82-0037
- J84-012 Three-Dimensional Turbulent Boundary-Layer Development on a Fan Rotor Blade. B. Lakshminarayana, C. Hah and T. R. Govindan, *The Pennsylvania State University* (22, 1, p. 83) Article based on AIAA Paper 82-1007
- J84-013 A Simple, Refined Theory for Bending and Stretching of Homogeneous Plates. Lawrence W. Rehfield and Valisetty R. Rao, Georgia Institute of Technology (22, 1, p. 90) Article
- J84-014 Effects of 50,000 h of Thermal Aging on Graphite/Epoxy and Graphite/Polymide Composites. J. R. Kerr and J. F. Haskins, *General Dynamics Corporation* (22, 1, p. 96) Article based on AIAA Paper 82-0657 CP823
- J84-015 Probabilistic Static Failure of Composite Material. B. N. Cassenti, *United Technologies Research Center* (22, 1, p. 103) Article based on AIAA Paper 82-0658 CP823
- J84-016 Biaxial Stress Behavior of Graphite and Kevlar 49 Fiber/Epoxy Composites and Hybrids. R. F. Foral, *University of Nebraska*; and Humphrey W. D., *Brunswick Corporation* (22, 1, p. 111) Article based on AIAA Paper 82-0709 CP823
- J84-017 Generic Approach to Determine Optimum Aeroelastic Characteristics for Composite Forward-Swept-Wing Aircraft. Gabriel A. Oyibo, Fairchild Republic Company (22, 1, p. 117) Article
- J84-018 Experimental Stress Analysis of a Thin Walled Pressurized Torus Loaded by Contact with a Plane. Daniel E. Hill and Joseph R. Baumgarten, *Iowa State University* (22, 1, p. 124) Article based on AIAA Paper 82-0753 CP823
- J84-019 Environmental and High Strain Rate Effects on Composites for Engine Applications. C. C. Chamis and G. T. Smith, NASA Lewis Research Center (22, 1, p. 128) Article based on AIAA Paper 82-0758 CP823
- J84-020 Statistical Failure Prediction Models for Brittle Materials. Antonio C. Rufin, Boeing Aerospace Company; Dean R. Samos, Lockheed-California Company; and R. J. H. Bollard, University of Washington (22, 1, p. 135) Article based on AIAA Paper 82-0738 CP823
- J84-021 A New Method for Calculating Ducted Flows. Siegfried H. Hasinger, Air Force Wright Aeronautical Laboratories (22, 1, p. 141) Technical Note
- J84-022 Wall Mass Transfer and Pressure Gradient Effects on Turbulent Skin Friction. Ralph D. Watson and R. Balasubramanian, NASA Langley Research Center (22, 1, p. 143) Technical Note
- J84-023 Nonunique Solutions to the Transonic Potential Flow Equation. M. D. Salas and C. R. Gumbert, NASA Langley Research Center; and E. Turkel, Institute for Computer Applications in Science and Engineering, NASA Langley Research Center (22, 1, p. 145) Technical Note
- **J84-024 Eddy Viscosity Models for Wakes and Separated Flows.** K. Srinivas and C. A. J. Fletcher, *University of Sydney* (22, 1, p. 147) Technical Note

- J84-025 Nonequilibrium Arc Modeling. J. P. Sudano, *Instituto Tecnologico de Aeronautica* (22, 1, p. 148) Technical Note
- J84-026 Behavior of the Flow Through a Numerically Captured Shock Wave. David Nixon, Nielsen Engineering & Research, Inc. (22, 1, p. 150) Technical Note
- J84-027 The Use of Nitrogen as a Diluent in cw DF Lasers. J. H. Massig, DFVLR (22, 1, p. 152) Technical Note
- J84-028 Flow Visualization in Combustion Gases Using Nitric Oxide Fluorescence. G. Kychakoff, K. Knapp, R. D. Howe and R. K. Hanson, Stanford University (22, 1, p. 153) Technical Note
- J84-029 A Uniformly Valid Asymptotic Solution for Unsteady Subresonant Flow Through Supersonic Cascades. O. O. Bendiksen, *Princeton University* (22, 1, p. 154) Technical Note
- J84-030 Rule of Forbidden Signals in a Two-Dimensional Supersonic Compressor Cascade. David C. Prince Jr.General Electric Company (22, 1, p. 157) Technical Note
- J84-032 Laser Diagnostics for Flowfields, Combustion, and MHD Applications. S. Lederman and S. Sacks, *Polytechnic Institute of New York* (22, 2, p. 161) Survey Paper
- J84-033 An Embedded-Mesh Potential Flow Analysis, Jeffrey J. Brown, *Boeing Commercial Airplane Company* (22, 2, p. 174) Article based on AIAA Paper 82-0107
- J84-034 Doublet-Point Method for Supersonic Unsteady Lifting Surfaces. T. Ueda and E. H. Dowell, *Princeton University* (22, 2, p. 179) Article
- **J84-035 Jet Noise at Low Reynolds Number.** D. F. Long and R. E. A. Arndt, *St. Anthony Falls Hydraulic Laboratory* (22, 2, p. 187) Article
- J84-036 Cylindrical and Conical Flow Regimes of Three-Dimensional Shock/Bounday-Layer Interactions. Gary S. Settles and Hsueh-Ying Teng, *Princeton University* (22, 2, p. 194) Article based on AIAA Paper 82-0987
- J84-037 Calculations of Viscous Transonic Flow over Airfoils. Z. B. Chen and P. Bradshaw, *Imperial College, England* (22, 2, p. 201) Article based on AIAA Paper 82-0997
- J84-038 Instability of Compressible Bounday Layers Along Curved Walls with Suction or Cooling. Nabil M. El-Hady and Alok K. Verma, *Old Dominion University* (22, 2, p. 206) Article based on AIAA Paper 82-1010
- J84-039 Trajectory of Particles Rebounding Off Plane Targets. J. D. Armstrong, N. Collings and P. J. Shayler, *University of Nottingham* (22, 2, p. 214) Article
- **J84-040 Injection-Induced Turbulence in Stagnation-Point Bounday Layers.** Chul Park, *NASA Ames Research Center* (22, 2, p. 219) Article
- J84-041 Finite Area Method for Nonlinear Supersonic Conical Flows. S. S. Sritharan, ICASE, NASA Langley Research Center; and A. Richard Seebass, University of Colorado (22, 2, p. 226) Article based on AIAA Paper 82-0995
- J84-042 Holographic Vibration Measurement of a Rotating Fluttering Fan. Philip A. Storey, *Rolls-Royce Limited* (22, 2, p. 234) Article based on AIAA Paper 82-1271

- **J84-043 Asymmetric Flowfield Development on a Slender Body at High Incidence.** A. B. Wardlaw Jr. and W. J. Yanta, *Naval Surface Weapons Center* (22, 2, p. 242) Article based on AIAA Paper 82-0343
- J84-044 Overall Aerodynamic Performance of an Annular Flat-Plate Airfoil Cascade. Daniel E. Bergsten, R. Charles Stauter and Sanford Fleeter, *Purdue University* (22, 2, p. 250) Synoptic based on AIAA Paper 83-0179
- J84-045 Optimization of Propeller Blade Twist by an Analytical Method. Li Ko Chang and John P. Sullivan, *Purdue University* (22, 2, p. 252) Article based on AIAA Paper 82-1125
- **J84-046 Edge Delamination in Angle-Ply Composite Laminates.** S. S. Wang, *University of Illinois* (22, 2, p. 256) Article based on AIAA Paper 81-0578 CP811
- J84-047 Substructure Synthesis and Its Iterative Improvement for Large Nonconservative Vibratory Systems. A. L. Hale, University of Illinois at Urbana-Champaign (22, 2, p. 265) Article based on AIAA Paper 82-0772 CP823
- **J84-048** The Beam-Like Behavior of Space Trusses. J. D. Renton, Oxford University (22, 2, p. 273) Article
- J84-049 Postbuckling Behavior of Anisotropic Laminated Plates Under Pure Shear and Shear Combined with Compressive Loading. Y. Zhang and F. L. Matthews, *Imperial College of Science and Technology (United Kingdom)* (22, 2, p. 281) Article
- J84-050 Hybrid Perturbation/Bubnov-Galerkin Technique for Nonlinear Thermal Analysis. Ahmed K. Noor and Chad D. Balch, George Washington University Center, NASA Langley Research Center (22, 2, p. 287) Article
- **J84-051 The Inverse Problem for Supersonic Airfoils.** Timothy S. Lewis and Lawrence Sirovich, *Brown University* (22, 2, p. 295) Technical Note
- J84-052 Sidewall Effects on Airfoil Tests. Uwe Ganzer, Technische Universitat Berlin; Egon Stanewsky, DFVLR Gottingen; Jonny Ziemann, Technische Universitat Berlin (22, 2, p. 297) Technical Note
- J84-053 Frozen Plasma Boundary-Layer Flows over Isothermal Flat Plates Parametric Study. G. Ben-Dor, Z. Rakib and O. Igra, Ben-Gurion University of the Negev (22, 2, p. 299) Technical Note
- J84-054 Calculation of Three-Dimensional Instability of a Blasius Boundary Layer. Mao-Zhang Chen and P. Bradshaw, Imperial College (England) (22, 2, p. 301) Technical Note
- J84-055 Contribution to the Reynolds Stress Model as Applied to Near-Wall Region. Shin-ichi Nakao, *National Research Laboratory of Metrology*, *Japan* (22, 2, p. 303) Technical Note
- J84-056 Pressure Distribution Behind a Nonstationary Reflected-Diffracted Oblique Shock Wave. R. S. Srivastava and R. L. Deschambault, *University of Toronto* (22, 2, p. 305) Technical Note
- **J84-057 Balance of Turbulent Energy in the Linear Wall Region of Channel Flow.** Peter S. Bernard and Bruce S. Berger, *University of Maryland* **(22,** 2, p. 306) Technical Note
- **J84-058 Sloshing of Liquids in Cylindrical Tanks.** James R. Kuttler and Vincent G. Sigillito, *Applied Physics Laboratory*, *The Johns Hopkins University* (22, 2, p. 309) Technical Note

- J84-059 Comparison of Temperature and Velocity Spectra in a Slightly Heated Turbulent Plane Jet. R. A. Antonia and S. Rajagopalan, *University of Newcastle (Australia)*; and L. Fulachier, *Universite d'Aix-Marseille* (22, 2, p. 311) Technical Note
- J84-060 Chemistry of Combustion of Double-Base Propellants Through Sliver Analysis. K. Kishore and V. R. Pai Verneker, Indian Institute of Science; and C. B. V. Subhas, Defence Research and Development Laboratory (India) (22, 2, p. 313) Technical Note
- J84-061 Stability of Annular Sector Plates with Variable Thickness. R. S. Srinivasan and V. Thiruvenkatachari, *Indian Institute of Technology* (22, 2, p. 315) Technical Note
- **J84-062 Radiative Heat Transfer in Segregated Media.** R. K. Ahluwalia and K. H. Im, *Argonne National Laboratory* (22, 2, p. 317) Technical Note
- **J84-063 Turbulent Flow over Vehicles at Angle of Attack.** W. S. Helliwell, I. E. Alber, R. P. Dickinson and S. C. Lubard, *Arete Associates* (22, 3, p. 321) Synoptic based on AIAA Paper 82-0027
- J84-064 Lateral Aerodynamics of Delta Wings with Leading-Edge Separation. Joseph Katz, *Technion--Israel Institute of Technology* (22, 3, p. 323) Article based on AIAA Paper 82-1386
- J84-065 A Nonlinear Hybrid Vortex Method for Wings at Large Angle of Attack. Osama A. Kandil, Li-Chuan Chu and Thomas Tureaud, Old Dominion University (22, 3, p. 329) Article based on AIAA Paper 82-0351
- J84-066 Two Types of Instream Stagnation. V. O'Brien, Applied Physics Laboratory, The Johns Hopkins University (22, 3, p. 337) Article
- J84-067 Jet Noise Modification by the "Whistler Nozzle." M. A. Z. Hasan, O. Islam and A. K. M. F. Hussain, *University of Houston* (22, 3, p. 340) Article
- J84-068 Ionization Relaxation in a Closed-Cycle MHD Generator. C. A. Borghi and A. Veefkind, *Eindhoven University of Technology, the Netherlands* (22, 3, p. 348) Article
- J84-069 Investigation of the Conical Flowfield Around External Axial Corners. W. J. Bannink, *University of Technology, The Netherlands* (22, 3, p. 354) Article
- J84-070 Three-Dimensional Grid Generation Using Elliptic Equations with Direct Grid Distribution Control. C. F. Shieh, General Motors Corporation (22, 3, p. 361) Article based on AIAA Paper 83-0448
- **J84-071 Effect of Boundary Layers on Solid Walls in Three-Dimensional Subsonic Wind Tunnels.** Jerry B. Adcock and Richard W. Barnwell, *NASA Langley Research Center* (22, 3, p. 365) Article based on AIAA Paper 83-0144
- J84-072 The Effect of Nonlinear Heat Conduction on the Pressure-Coupled Response of Solid Propellants. John M. Deur and Robert L. Glick, *Purdue University* (22, 3, p. 372) Synoptic based on AIAA Paper 82-1102
- J84-073 Investigation of Mixing in a Turbofan Exhaust Duct, Part I: Analysis and Computational Procedure. J. P. Kreskovsky, W. R. Briley and H. McDonald, Scientific Research Associates, Inc. (22, 3, p. 374) Article

- **J84-074 Distributed Combustion Effects on Particle Damping.** M. W. Beckstead, R. S. Richards and B. S. Brewster, *Brigham Young University* (22, 3, p. 383) Article based on AIAA Paper 82-0357
- J84-075 A Coalescence/Dispersion Model for Turbulent Flame Stability. Krishnan Radhakrishnan, *The University of Michigan*; and David T. Pratt, *University of Washington* (22, 3, p. 388) Article based on AIAA Paper 82-1158
- J84-076 Buckling of Composite Plates with a Free Edge in Edgewise Bending and Compression. James Ting-Shun Wang, Georgia Institute of Technology; Sherrill B. Biggers and John N. Dickson, Lockheed-Georgia Company (22, 3, p. 394) Article
- J84-077 A Nonlinear Structural Concept for Drag-Reducing Compliant Walls. Edward L. Reiss, Northwestern University (22, 3, p. 399) Article
- J84-078 Optimization of Shallow Trusses Against Limit Point Instability. M. P. Kamat, Virginia Polytechnic Institute and State University; N. S. Khot and V. B. Venkayya, Flight Dynamics Laboratory (22, 3, p. 403) Article
- **J84-079** Path-Independent Integral and Moving Isoparametric Elements for Dynamic Crack Propagation. T. Nishioka and S. N. Atluri, *Georgia Institute of Technology* (22, 3, p. 409) Article based on AIAA Paper 83-0838 CP831
- J84-080 Frequency Determination Techniques for Cantilevered Plates with Bending-Torsion Coupling. D. W. Jensen and E. F. Crawley, Massachusetts Institute of Technology (22, 3, p. 415) Article based on AIAA Paper 83-0953 CP831
- J84-081 Free Liquid Surface Response Induced by Fluctuations of Thermal Marangoni Convection. Helmut F. Bauer, *University of the German Armed Forces* (22, 3, p. 421) Article
- **J84-082 A Formulation of Radiation View Factors from Conical Surfaces.** B. T. F. Chung, M. M. Kermani and M. H. N. Naraghi, *University of Akron* (22, 3, p. 429) Article based on AIAA Paper 83-0156
- J84-083 Mesolayer Theory for Turbulent Flows. Noor Afzal, Aligarh Muslim University (22, 3, p. 437) Technical Note
- J84-084 An Enhanced Flow Visualization Technique for Planar Free Shear Layers. Y. Hsia, D. Baganoff, A. Krothapalli and K. Karamcheti, Stanford University (22, 3, p. 439) Technical Note
- J84-085 Ignition in Gun Exhaust Plumes. E. M. Schmidt, Ballistic Research Laboratory, USAARRADCOM (22, 3, p. 441) Technical Note based on AIAA Paper 81-1109
- J84-086 Adhesive Bonded Orthotropic Structures with a Part-Through Crack. C. S. Hong and H. S. Ro, Korea Advanced Institute of Science and Technology (22, 3, p. 443) Technical Note
- J84-087 The Affine Equivalence of Local Stress and Displacement Distributions in Damaged Composites and Batdorf's Electric Analog. E. J. Brunelle, Rensselaer Polytechnic Institute (22, 3, p. 445) Technical Note
- J84-089 Hypersonic Interactions with Surface Mass Transfer-Part I: Steady Flow. R. N. Gupta, NASA Langley Research Center; C. M. Rodkiewicz, University of Alberta, Canada; N. K. Varghese and A. C. Jain, Indian Institute of Technology (22, 4, p. 449) Synoptic based on AIAA Paper 82-0979

- J84-090 Hypersonic Interactions with Surface Mass Transfer Part II: Unsteady Flow. R. N. Gupta, NASA Langley Research Center; C. M. Rodkiewicz, University of Alberta (Canada); N. K. Varghese and A. C. Jain, Indian Institute of Technology (22, 4, p. 451) Synoptic based on AIAA Paper 82-0979
- J84-091 Aerodynamics of Wings in Supersonic Shear Flow. A. Barsony-Hagy and M. Hanin, *Technion Israel Institute of Technology* (22, 4, p. 453) Article based on AIAA Paper 82-0939
- J84-092 Effects of Viscosity and Surface Tension on a Jet Plume in Supersonic Crossflow. A. S. Nejad and J. A. Schetz, Virginia Polytechnic Institute and State University (22, 4, p. 458) Synoptic
- J84-093 Relationship Between Static, Flight, and Simulated Flight Jet Noise Measurements. R. S. McGowan and R. S. Larson, *Pratt & Whitney Aircraft Group* (22, 4, p. 460) Article
- J84-094 Forced Oscillation Experiments in Supercritical Diffuser Flows. M. Sajben, T. J. Bogar and J. C. Kroutil, McDonnell Douglas Corporation (22, 4, p. 465) Article
- J84-095 Similar Solutions of Gas Pressure Within Semi-infinite Capillary Tubes. Junzo Sato, *University of Tokyo* (22, 4, p. 475) Article
- J84-096 Numerical Calculation of Unsteady Transonic Potential Flow over Three-Dimensional Wings with Oscillating Control Surfaces. Koji Isogai, *National Aerospace Laboratory (Japan)*; and Kohei Suetsugu, *FACOM-HITAC Inc. (Japan)* (22, 4, p. 478) Article
- J84-097 Prediction of the Intermittency Factor for Turbulent Shear Flows. W. Kollmann, *University of California* (22, 4, p. 486) Article based on AIAA Paper 83-0382
- **J84-098 Limit Amplitude of Galloping Bluff Cylinders.** L. E. Ericsson, *Lockheed Missiles & Space Company, Inc.* (22, 4, p. 493) Article
- J84-099 The Voyager Encounters with Saturn (Dryden Lecture). E. C. Stone, *California Institute of Technology* (22, 4, p. 498) Article based on AIAA Paper 83-0605
- J84-100 Laser Holographic Interferometry for an Unsteady Airfoil Undergoing Dynamic Stall. George Lee, Donald A. Buell and Joseph P. Licursi, NASA Ames Research Center; and James E. Craig, Spectron Development Laboratory (22, 4, p. 504) Article
- **J84-101 Vortex Motion in Axisymmetric Piston-Cylinder Configurations.** Tom I-P. Shih, Gene E. Smith and George S. Springer, *The University of Michigan* (22, 4, p. 512) Synoptic
- J84-102 Further Time-Mean Measurements in Confined Swirling Flows. H. K. Yoon and D. G. Lilley, Oklahoma State University (22, 4, p. 514) Synoptic based on AIAA Paper 83-0315
- J84-103 Interaction of Gun Exhaust Flowfields. E. M. Schmidt, R. E. Gordnier and K. S. Fansler, *Ballistic Research Laboratory* (22, 4, p. 516) Synoptic
- J84-104 Investigation of Mixing in a Turbofan Exhaust Duct, Part II: Computer Code Application and Verification. L. A. Povinelli and B. H. Anderson, NASA Lewis Research Center (22, 4, p. 518) Article

- J84-105 A Comprehensive Model for AP-Based Composite Propellant Ignition. M. Kumar, J. E. Wills, A. K. Kulkarni and K. K. Kuo, *The Pennsylvania State University* (22, 4, p. 526) Article based on AIAA Paper 81-1109
- J84-106 A Computational Study of Transformation Methods for Optimal Design. Ashok D. Belegundu and Jasbir S. Arora, The University of Iowa (22, 4, p. 535) Article
- J84-107 Vibration of a Three-Layered Ring on Periodic Radial Supports. E. S. Reddy and A. K. Mallik, *Indian Institute of Technology* (22, 4, p. 543) Article
- J84-108 Experimental Studies of the Separated Flow over a NASA GA(W)-1 Airfoil. Jayesh M. Mehta, *Illinois Institute of Technology*; and Suresh Goradia, *Jafarabad* (22, 4, p. 552) Technical Note
- J84-109 Separation Criteria for Three-Dimensional Boundary-Layer Calculations. H. C. Raven, Netherlands Ship Model Basin (22, 4, p. 554) Technical Note
- J84-110 A Laser Interferometer for Measuring Skin Friction in Three-Dimensional Fows. D. J. Monson, NASA Ames Research Center (22, 4, p. 557) Technical Note
- J84-111 Design Sensitivity Analysis Strain Energy via Distribution. Choon T. Chon, Ford Motor Company (22, 4, p. 559) Technical Note
- J84-112 Methods of Reference Basis for Identification of Linear Dynamic Structures. Menahem Baruch, *Technion Israel Institute of Technology* (22, 4, p. 561) Technical Note based on AIAA Paper 82-0769 CP823
- J84-113 Post-Buckling Behavior of a Thick Circular Plate. Lien-Wen Chen and Ji-Liang Doong, *National Cheng Kung University* (22, 4, p. 564) Technical Note
- J84-114 Linear System Identification via Poisson Moment Functionals. L. A. Bergman and A. L. Hale, *University of Illinois* (22, 4, p. 566) Technical Note
- **J84-115 Non-Fourier Thermal Stresses in a Circular Disk.** M. H. Sadd, *University of Rhode Island*; and C. Y. Cha, *Pennsylvania State University* (22, 4, p. 568) Technical Note
- J84-116 Anisotropic Two-Dimensional Scattering Part II: Finite Depth and Refractive Index Effects. D. C. Look Jr. and P. D. Sundvold, *University of Missouri-Rolla* (22, 4, p. 571) Technical Note
- J84-120 Unsteady Newton-Busemann Flow Theory Part IV: Three Dimensional. W. H. Hui and H. J. Van Roessel, University of Waterloo (22, 5, p. 577) Synoptic based on AIAA Paper 82-1305
- J84-121 Hot-Wire Investigation of an Unseparated Shock-Wave/Turbulent Bounday-Layer Interaction. K. Hayakawa, A. J. Smits and S. M. Bogdonoff, *Princeton University* (22, 5, p. 579) Article based on AIAA Paper 82-0985
- J84-122 Analysis of Two-Dimensional Viscous Flow over Cylinders in Unsteady Motion. Mohammad E. Taslin and Robert B. Kinney, *The University of Arizona*; and Michael A. Paolino, *U. S. Military Academy* (22, 5, p. 586) Article
- J84-123 Load Change Characteristics of the Discharge Structure in Noble Gas MHD Channels. Takehisa Hara and Juro Umoto, Kyoto University (22, 5, p. 595) Article

- J84-124 A Contribution to the Numerical Prediction of Unsteady Flows. Maurizio Pandolfi, *Politecnico di Torino* (22, 5, p. 602) Article based on AIAA Paper 83-0121
- J84-125 Supersonic Separated Flow past a Cylindrical Obstacle on a Flat Plate. Oktay Ozcan and Maurice Holt, *University of California* (22, 5, p. 611) Article
- J84-126 Conical, Noncircular, Second-Order, Potential Theory of Supersonic Flow. L. Devan, Naval Surface Weapons Center (22, 5, p. 618) Article based on AIAA Paper 83-0459
- J84-127 Two-Component LDA Measurement in a Two-Phase Turbulent Jet. D. Modarress, H. Tan and S. Elghobashi, Spectron Development Laboratories, Inc. (22, 5, p. 624) Article based on AIAA Paper 83-0052
- J84-128 Recovery of Burner Acoustic Source Structure from Far-Field Sound Spectra. J. R. Mahan and J. D. Jones, Virginia Polytechnic Institute and State University (22, 5, p. 631) Article based on AIAA Paper 83-0763
- J84-129 Low Burning Rate Aluminized Propellants in Acceleration Fields. Winston N. Brundige, *Morton Thiokol*; and Leonard H. Caveny, *Air Force Office of Scientific Research* (22, 5, p. 638) Article based on AIAA Paper 81-1583
- J84-130 Density Fluctuations in a Flame in a Karman Vortex Sheet. Izak Namer, *Drexel University*; Robert G. Bill Jr., *Columbia University*; Lawrence Talbot, *University of California*; and Frank Robben, *Lawrence Berkeley Laboratory* (22, 5, p. 647) Article
- J84-131 Time-Resolved Density Measurements in Premixed Turbulent Flames. F. C. Gouldin, Cornell University; and K. V. Dandekar, University of Illinois (22, 5, p. 655) Article based on AIAA Paper 82-0036
- J84-132 Turbulent Properties of a Flat-Plate Boundary Layer with a Diffusion Flame. T. Ueda, M. Mizomoto, Y. Matsubayashi and S. Ikai, *Keio University* (22, 5, p. 664) Article based on AIAA Paper 83-0471
- J84-133 Optimality Criterion Techniques Applied to Frames Having General Cross-Sectional Relationships. Mohsin R. Khan, Clarkson College of Technology (22, 5, p. 669) Article based on AIAA Paper 81-0552 CP811
- J84-134 Effect of Solar Radiation Disturbance on a Flexible Beam in Orbit. R. Krishna and P. M. Bainum, *Howard University* (22, 5, p. 677) Article based on AIAA Paper 83-0431
- J84-135 Balancing Flexible Rotating Shafts with an Initial Bend. A. G. Parkinson, The Open University (England); M. S. Darlow, Rensselaer Polytechnic Institute; and A. J. Smalley, Southwest Research Institute (22, 5, p. 683) Article based on AIAA Paper 82-0691 CP823
- J84-136 Buffeting of a Slender Circular Beam in Axial Turbulent Flows. Wen H. Lin, Argonne National Laboratory (22, 5, p. 690) Article based on AIAA Paper 83-0928 CP831
- **J84-137 Purging Flow Protection of Infrared Telescopes.** E. P. Muntz and M. Hanson, *University of Southern California* (22, 5, p. 696) Article based on AIAA Paper 82-0294
- J84-138 Heat Transfer Between Counterflowing Fluids Separated by a Heat-Conducting Plate. J. A. Demko, *Texas A&M University*; and L. C. Chow, *Washington State University* (22, 5, p. 705) Article based on AIAA Paper 82-0833

- **J84-139 Dusty Hypersonic Flow past Thick Wedges.** Ronald M. Barron and J. Thomas Wiley, *University of Windsor* (22, 5, p. 713) Technical Note
- J84-140 A "Similarity" Solution for Laminar Swirling Core Flows. D. G. Ross, Chisholm Institute of Technology (Australia) (22, 5, p. 714) Technical Note
- J84-141 A Local Similarity Solution for the Viscous Boundary-Layer Flow Longitudinal to a Cylinder. Richard E. Sayles, University of Maine (22, 5, p. 717) Technical Note
- J84-142 Closed-Form Model for Three-Dimensional Vacuum Plumes from a Scarfed Nozzle. G. L. Romine and J. A. Noble, Martin Marietta Corporation (22, 5, p. 719) Technical Note
- J84-143 Singular Propagation Behavior of Cracks in Stiffened Cylindrical Shells. Chang Shangchow, Northwestern Polytechnical University (China) (22, 5, p. 721) Technical Note
- J84-144 Derivation and Significance of Second-Order Modal Design Sensitivities. J. A. Brandon, University of Manchester Institute of Science and Technology (England) (22, 5, p. 723) Technical Note
- **J84-145 Dynamic Condensation.** Mario Paz, *University of Louisville* (22, 5, p. 724) Technical Note
- J84-146 Thermally Developing Laminar Flow in a Duct with External Radiation and Convection. L. T. Yeh, Texas Instruments Inc.; and B. T. F. Chung, The University of Akron (22, 5, p. 727) Technical Note based on AIAA Paper 83-0529
- J84-153 The Nondimensional Coefficient of Thermal Conductivity. C. M. Hung, NASA Ames Research Center (22, 5, p. 734) Readers' Forum
- J84-155 Boundary-Layer Calculations in the Inverse Mode for Incompressible Flows over Infinite Swept Wings. S. F. Radwan and S. G. Lekoudis, *Georgia Institute of Technology* (22, 6, p. 737) Article based on AIAA Paper 83-0454
- J84-156 Performance Prediction of High-Inlet-Blockage Diffusers. Mahesh S. Greywall, Wichita State University (22, 6, p. 744) Synoptic based on AIAA Paper 83-0466
- J84-157 A Fast Viscous Correction Method for Unsteady Transonic Flow About Airfoils. Shen C. Lee, *University of Missouri* (22, 6, p. 746) Synoptic based on AIAA Paper 83-0265
- J84-158 Similar Solutions and Integral Quantities of the Rotating Compressible Laminar Boundary Layer. Roger M. F. Leblanc, C.E.A.T., Poitiers University (22, 6, p. 748) Synoptic
- J84-159 Current Distribution in a Quasisteady MPD Arcjet with Various Anode Geometries. Y. Kunii, Y. Shimizu and K. Kuriki, *Institute of Space and Astronautical Science (Japan)* (22, 6, p. 750) Synoptic based on AIAA Paper 82-1917
- J84-160 Progress Toward a Model to Describe Jet/Aerodynamic-Surface Interference Effects. R. L. Fearn, *University of Florida* (22, 6, p. 752) Synoptic
- J84-161 Three-Dimensional Nonequilibrium Viscous Shock-Layer Flows over Complex Geometries. S. Swaminathan, M. D. Kim and C. H. Lewis, Virginia Polytechnic Institute and State University (22, 6, p. 754) Synoptic
- J84-162 Acoustic Measurements in High-Speed Subsonic Jets. K. W. Whitaker and G. L. Morrison, *Texas A&M University* (22, 6, p. 756) Synoptic based on AIAA Paper 83-0725

- J84-163 A New and Improved Computational Technique for Two-Dimensional, Unsteady, Compressible Flows. Gino Moretti, *GMAF*, *Inc.*; and Luca Zannetti, *Politecnico di Torino* (22, 6, p. 758) Article based on AIAA Paper 82-0168
- J84-164 Mean Streamwise Spacing of Organized Structures in Transitional and Developed Bounded Turbulent Flows. Shirley T. Fleischmann and James M. Wallace, *The University of Maryland* (22, 6, p. 766) Article
- J84-165 Nonisentropic Potential Formulation for Transonic Flows. Goetz H. Klopfer and David Nixon, *Nielsen Engineering & Research, Inc.* (22, 6, p. 770) Article based on AIAA Paper 83-0375
- J84-166 Flow and Heat Transfer Measurements Along a Cooled Supersonic Diffuser. Lloyd H. Back, Robert F. Cuffel and Paul F. Massier, *Jet Propulsion Laboratory, California Institute of Technology* (22, 6, p. 777) Article
- J84-167 Experiments on Sound Radiation from a Duct with a Circumferentially Varying Liner. C. R. Fuller and R. J. Silcox, NASA Langley Research Center (22, 6, p. 781) Article
- J84-168 Acoustic Nonlinearities and Power Losses at Orifices. A. Cummings, *University of Missouri-Rolla* (22, 6, p. 786) Article based on AIAA Paper 83-0739
- J84-169 Numerical Simulation of Convective Combustion of Ball Powders in Strong Confinement. K. Kim, *Naval Surface Weapons Center* (22, 6, p. 793) Article based on AIAA Paper 82-0356
- J84-170 Turbulent Mixing and Combustion in a Reacting Shear Layer. M. G. Mungal, P. E. Dimotakis and J. E. Broadwell, California Institute of Technology (22, 6, p. 797) Article based on AIAA Paper 83-0473
- J84-171 Flutter Analysis of Advanced Turbopropellers. V. Elchuri and G. C. C. Smith, *Bell Aerospace Textron* (22, 6, p. 801) Synoptic based on AIAA Paper 83-0846 CP831
- J84-172 Vibration and Damping Analysis of a Multilayered Cylindrical Shell, Part I: Theoretical Analysis. Naiyar Alam, Aligarh Muslim University; and N. T. Asnani, Indian Institute of Technology (22, 6, p. 803) Article
- **J84-173 Toward a Consistent Beam Theory.** A. V. Krishna Murty, *Indian Institute of Science* (22, 6, p. 811) Article
- J84-174 Time-Domain Quasilinear Identification of Nonlinear Dynamic Systems. Samir R. Ibrahim, *Old Dominion University* (22, 6, p. 817) Article
- J84-175 Generalized Modal Shock Spectra with Indeterminate Interface. M. Salama, M. Trubert, C. Chian and L. Peretti, Jet Propulsion Laboratory, California Institute of Technology (22, 6, p. 824) Article based on AIAA Paper 83-0996 CP831
- J84-176 Two-Dimensional Material Response of a Transpiration-Cooled System in a Radiative/Convective Environment. I. Ishii and H. Kubota, *University of Tokyo* (22, 6, p. 831) Article
- J84-177 Turbulent Spot Growth in Favorable Pressure Gradients. R. Narasimha, C. Subramanian and M. A. Badri Narayanan, *Indian Institute of Science* (22, 6, p. 831) Technical Note
- J84-178 Injection into a Turbulent Boundary Layer Through Different Porous Surfaces. Fayette S. Collier Jr. and Joseph A. Schetz, Virginia Polytechnic Institute and State University (22, 6, p. 839) Technical Note based on AIAA Paper 83-0295

- J84-179 Momentum/Heat-Transfer Analogy for Turbulent Boundary Layers in Mild Pressure Gradients. Akira Naka-yama, Hitoshi Koyama and Sei-ichi Ohsawa, Shizuoka University (22, 6, p. 841) Technical Note
- J84-180 Explicit Representations of the Complete Velocity Profile in a Turbulent Boundary Layer. A. Liakopoulos, University of Florida (22, 6, p. 844) Technical Note
- J84-181 Turbulent Nonreacting Swirling Flows. J. I. Ramos, Carnegie-Mellon University (22, 6, p. 846) Technical Note
- J84-182 Effect of Thermal Gradient on Frequencies of a Wedge-Shaped Rotating Beam. J. S. Tomar and Rita Jain, University of Roorkee (22, 6, p. 848) Technical Note
- **J84-183 Thermal Postbuckling of Columns.** G. Venkateswara Rao and K. Kanaka Raju, *Vikram Sarabhai Space Center* (22, 6, p. 850) Technical Note
- J84-184 Vibration of Orthotropic Thick Circular Plates. M. Sathyamoorthy, Clarkson University (22, 6, p. 851) Technical Note
- J84-185 Structural Optimization by Mathematical Programming Methods. Jasbir S. Arora, *University of Iowa*; and Ashok D. Belegundu, *GMI Engineering and Management Institute* (22, 6, p. 854) Technical Note
- J84-186 Supersonic Flutter of Short Panels on an Elastic Foundation. G. Venkateswara Rao, Vikram Sarabhai Space Center, India; and K. Singa Rao, Vaikram Sarabhai Space Center, India (22, 6, p. 856) Technical Note
- J84-187 Thermal Resistance of Circular Cylinder Cross Sections with Convective and Flux Prescribed Boundaries. G. E. Schneider, *University of Waterloo* (22, 6, p. 857) Technical Note based on AIAA Paper 81-0215
- J84-188 An Efficient Numerical Method for Solving Inverse Conduction Problem in a Hollow Cylinder. R. C. Mehta, Vikram Sarabhai Space Centre (22, 6, p. 860) Technical Note
- J84-191 Aerodynamic Properties of a Two-Dimensional Inextensible Flexible Airfoil. S. Greenhalgh, Naval Air Development Center; H. C. Curtiss Jr. and B. Smith, Princeton University (22, 7, p. 865) Article based on AIAA Paper 83-1796
- J84-192 Turbulent Boundary-Layer Relaxation with Application to Skin-Friction Drag Reduction. Jerry N. Hefner and Dennis M. Bushnell, NASA Langley Research Center (22, 7, p. 871) Synoptic based on AIAA Paper 83-0293
- J84-193 Three-Dimensional Flow Simulations for Supersonic Mixed-Compression Inlets at Incidence. Joseph Vadyak and Joe D. Hoffman, *Purdue University*; and Allan R. Bishop, *NASA Lewis Research Center* (22, 7, p. 873) Article
- J84-194 Transonic Full Potential Solutions by an Integral Equation Method. K. S. Ravichandran, N. L. Arora and R. Singh, *Indian Institute of Technology* (22, 7, p. 882) Article
- J84-195 Turbulence Measurements in a Compressible Reattaching Shear Layer. K. Hayakawa, A. J. Smits and S. M. Bogdonoff, *Princeton University* (22, 7, p. 889) Article based on AIAA Paper 83-0299
- **J84-196 Calculations of a Plane Turbulent Jet.** S. B. Pope, *Cornell University* (22, 7, p. 896) Article based on AIAA Paper 83-0286

- J84-197 Interactive Phenomena in Supersonic Jet Mixing Problems, Part I: Phenomenology and Numerical Modeling Techniques. Sanford M. Dash and David E. Wolf, *Science Applications Inc.* (22, 7, p. 905) Article based on AIAA Paper 83-0288
- J84-198 Scaling and Modeling of Three-Dimensional, Pressure-Driven Turbulent Boundary Layers. U. Goldberg and E. Reshotko, Case Western Reserve University (22, 7, p. 914) Article based on AIAA Paper 83-1695
- J84-199 The Baldwin-Lomax Turbulence Model for Two-Dimensional Shock-Wave/Boundary-Layer Interactions. M. Visbal and D. Knight, *Rutgers University* (22, 7, p. 921) Article based on AIAA Paper 83-1697
- J84-200 Pseudospectral Solutions of One- and Two-Dimensional Inviscid Flows with Shock Waves. Leonidas Sakell, Naval Research Laboratory (22, 7, p. 929) Article
- J84-201 Calculation of Viscous Hypersonic Flow over a Severely Indented Nosetip. T. Hsieh, *Naval Surface Weapons Center* (22, 7, p. 935) Article based on AIAA Paper 83-0226
- J84-202 Using Satellite-Observed uv Intensities to Deduce Electron Density Profiles. D. J. Strickland and R. E. Daniell, Beers Associates, Inc.; and J. R. Jasperse, Air Force Geophysics Laboratory (22, 7, p. 942) Article
- J84-203 Formation and Destruction of Vortices in a Motored Four-Stroke Piston-Cylinder Configuration. H. J. Schock and D. J. Sosoka, NASA Lewis Research Center; and J. I. Ramos, Carnegie-Mellon University (22, 7, p. 948) Synoptic based on AIAA Paper 83-0497
- J84-204 Improved Design of Subcritical and Supercritical Cascades Using Complex Characteristics and Boundary-Layer Correction. Jose M. Sanz, *Universities Space Research Association* (22, 7, p. 950) Article
- J84-205 Novel Concepts for Constraint Treatments and Approximations in Efficient Structural Synthesis. B. Prasad, Ford Motor Company (22, 7, p. 957) Article
- **J84-206 Limit Cycle Oscillations of a Nonlinear Rotorcraft Model.** Benson H. Tongue, *Georgia Institute of Technology* (22, 7, p. 967) Article
- J84-207 Vibration and Damping Analysis of a Multilayered Cylindrical Shell, Part II: Numerical Results. Naiyar Alam, Aligarh Muslim University; and N. T. Asnani, Indian Institute of Technology (22, 7, p. 975) Article
- **J84-208 Viscoelastic Analysis of Laminated Plate Buckling.**Dale W. Wilson and Jack R. Vinson, *University of Delaware* (22, 7, p. 982) Article
- **J84-209 Porous Airfoils in Transonic Flow.** G. Savu and O. Trifu, *National Institute for Scientific and Technical Creation INCREST (Romania)* (22, 7, p. 989) Technical Note
- J84-210 Higher Order Strip Integral Method for Three-Dimensional Boundary Layers. K. Kurian Mani, Lockheed California Company (22, 7, p. 991) Technical Note
- J84-211 A Flutter Eigenvalue Program Based on the Newton-Raphson Method. Valter J. E. Stark, Saab Scania AB (22, 7, p. 993) Technical Note
- J84-212 The Calculation of Transonic Rotor Noise. Hans R. Aggarwal, *University of Santa Clara* (22, 7, p. 996) Technical Note

J84-213 Axisymmetric Nonconical Supersonic Potential Flow with Embedded Subsonic Regions. M. J. Siclari, *Grumman Aerospace Corporation* (22, 7, p. 998) Technical Note

1852

- **J84-214 Nikuradse's Experiment.** C. W. B. Grigson, *Marine Consulting (Norway)* (22, 7, p. 999) Technical Note
- J84-215 Prediction of Transonic Separated Flows. C. C. Horstman and D. A. Johnson, *NASA Ames Research Center* (22, 7, p. 1001) Technical Note
- J84-216 Nozzle Flow Using the Galerkin Finite Element Method. T. Doan and R. D. Archer, *The University of New South Wales* (22, 7, p. 1003) Technical Note
- J84-217 Frozen-Plasma Boundary-Layer Flows over Adiabatic Flat Plates. G. Ben-Dor, Z. Rakib and O. Igra, Ben-Gurion University of the Negev (22, 7, p. 1005) Technical Note
- J84-218 Shock Shape over a Sphere Cone in Hypersonic High Enthalpy Flow. S. L. Gai, *The Australian National University*, Australia; R. J. Sandeman, P. Lyons and D. Kilpin, *The* Australian National University (22, 7, p. 1007) Technical Note
- J84-219 Application of Riemann Problem Solvers to Wave Machine Design. Shmuel Eidelman, Naval Postgraduate School; Atul Mathur, Exotech, Inc.; Raymond Shreeve and Jack Erwin, Naval Postgraduate School (22, 7, p. 1010) Technical Note
- J84-220 Classical Normal Modes in Asymmetric Nonconservative Dynamic Systems. Mehdi Ahmadian and Daniel J. Inman, State University of New York at Buffalo (22, 7, p. 1012) Technical Note
- J84-221 Thermal Effect on Axisymmetric Vibrations of an Orthotropic Circular Plate of Variable Thickness. J. S. Tomar and A. K. Gupta, *University of Roorkee* (22, 7, p. 1015) Technical Note
- J84-222 Response of a Cylindrical Shell to the Sudden Breakdown of a Ring Stiffener. C. Shangchow, Northwestern Polytechnical University (China) (22, 7, p. 1018) Technical Note
- J84-223 Thermoacoustic Convection Heat-Transfer Phenomenon. Masood Parang and Adel Salah-Eddine, *University of Tennessee* (22, 7, p. 1020) Technical Note based on AIAA Paper 83-1422
- J84-226 Comparison of Measured and Predicted Transonic Flow Around an Airfoil. P. J. Bryanston-Cross, *Churchill College*; and J. D. Denton, *University of Cambridge* (22, 8, p. 1025) Synoptic
- J84-227 A New Consistent Spatial Differencing Scheme for the Transonic Full-Potential Equation. Jolen Flores, Terry L. Holst, Dochan Kwak and Duane M. Batiste, NASA Ames Research Center (22, 8, p. 1027) Article based on AIAA Paper 83-0371
- J84-228 Numerical Simulation of Two-Dimensional Unsteady Transonic Flows Using the Full-Potential Equation. J. B. Malone, Lockheed-Georgia Company; and N. L. Sankar, Georgia Institute of Technology (22, 8, p. 1035) Article based on AIAA Paper 83-0233
- J84-229 Turbulent Boundary Layer Behind Constant Velocity Shock Including Wall Blowing Effects. H. Mirels, *The Aerospace Coporation* (22, 8, p. 1042) Article based on AIAA Paper 83-0567

- J84-230 Supersonic Conical Separation Due to Shock Vorticity. Frank Marconi, *Grumman Aerospace Corporation* (22, 8, p. 1048) Article based on AIAA Paper 83-1665
- J84-231 A Hybrid Explicit-Implicit Numerical Algorithm for the Three-Dimensional Compressible Navier-Stokes Equations. Doyle D. Knight, *Rutgers University* (22, 8, p. 1056) Article based on AIAA Paper 83-0223
- J84-232 Separation Model for Two-Dimensional Airfoils in Transonic Flow. F. A. Dvorak and D. H. Choi, *Analytical Methods, Inc.* (22, 8, p. 1064) Article based on AIAA Paper 83-0298
- J84-233 Vane Stagger Angle and Camber Effects in Fan Noise Generation. Johan B. H. M. Schulten, *National Aerospace Laboratory NLR (Netherlands)* (22, 8, p. 1071) Article based on AIAA Paper 83-0766
- J84-234 Laminar Stagnation-Point Heat Transfer for a Two-Temperature Argon Plasma. T. K. Bose and R. V. Seeniraj, *Indian Institute of Technology* (22, 8, p. 1080) Article
- J84-235 Geometry and Static Flow Effects on Acoustic Radiation from Ducts. Richard J. Silcox, NASA Langley Research Center (22, 8, p. 1087) Article based on AIAA Paper 83-0713
- J84-236 New Implicit Boundary Procedure--Theory and Applications. Man Mohan Rai, Informatics General Corporation; and Denny S. Chaussee, NASA Ames Research Center (22, 8, p. 1094) Article based on AIAA Paper 83-0123
- **J84-237 Prediction of the Flowfield in Laser Propulsion Devices.** Charles L. Merkle, *The Pennsylvania State University* (22, 8, p. 1101) Article based on AIAA Paper 83-1445
- J84-238 DF-Laser Pulse Breakdown Induced by Maritime Aerosols. S. T. Amimoto, J. S. Whittier, F. G. Ronkowski, P. R. Valenzuela, G. N. Harper and R. Hofland Jr., *The Aerospace Corporation*; G. L. Trusty, T. H. Cosden and D. H. Leslie, *Naval Research Laboratory* (22, 8, p. 1108) Article based on AIAA Paper 82-0894
- J84-239 Reduction of Flow-Measurement Uncertainties in Laser Velocimeters with Nonorthogonal Channels. Philip K. Snyder, Kenneth L. Orloff and Michael S. Reinath, *Ames Research Center* (22, 8, p. 1115) Article based on AIAA Paper 83-0051
- **J84-240 Digital Image Filtering in Visualized Boundary Layers.** T. C. Corke, *Illinois Institute of Technology* (22, 8, p. 1124) Article based on AIAA Paper 83-0379
- **J84-241 Aluminum Agglomeration in Solid-Propellant Combustion.** Jayaraman K. Sambamurthi, Edward W. Price and Robert K. Sigman, *Georgia Institute of Technology* (22, 8, p. 1132) Article based on AIAA Paper 83-0479
- J84-242 Numerical Simulations of Unsteady Transonic Flow in Diffusers. Meng-Sing Liou, National Cheng Kung University (China); and Thomas J. Coakley, NASA Ames Research Center (22, 8, p. 1139) Article based on AIAA Paper 82-1000
- J84-243 General Equations of Motion for an Elastic Wing and Method of Solution. Valter J. E. Stark, Saab Scania AB (22, 8, p. 1146) Article based on AIAA Paper 83-0921 CP831
- J84-244 Comparison of Three Radiative Formulations for Interactions in Three-Dimensional Boundary Layers. G. N. Kumar, Tuskegee Institute; and R. I. Vachon, Vachon, Nix, & Associates (22, 8, p. 1154) Article based on AIAA Paper 82-0911

- J84-245 Radiative Heat Transfer in Absorbing, Emitting, and Anisotropically Scattering Boundary-Layer Flows. Adnan Yucel, University of Mississippi; and Yildiz Bayazitòglu, Rice University (22, 8, p. 1162) Article
- J84-246 A Source-Equality Kutta Condition for Panel Methods. L. Fornasier, Messerschmitt-Bolkow-Blohm GmbH (22, 8, p. 1167) Technical Note
- **J84-247** Further Solutions in Streamwise Corner Flow with Wall Suction. W. H. Barclay, *University College London*; and H. A. El-Gamal, *University of Alexandria (Egypt)* (22, 8, p. 1169) Technical Note
- J84-248 Stability of Time Finite Elements. Richard Riff and Menahem Baruch, *Technion Israel Institute of Technology* (22, 8, p. 1171) Technical Note
- J84-249 A Quasivariational Principle for Fluid-Solid Interaction. Nesrin Sariğul, *University of Arizona*; and M. Cengiz Dokmeci, *Istanbul Technical University* (22, 8, p. 1173) Technical Note
- J84-250 Cubic Spline Numerical Solution of an Ablation Problem with Convective Backface Cooling. Sui Lin, Concordia University; Pu Wang, Lanzhou University; and R. Kahawita, Ecole Polytechnique de Montreal (22, 8, p. 1176) Technical Note
- **J84-257 Subsonic Airfoils with a Given Pressure Distribution.** A. Hassan, *Arizona State University*; H. Sobieczky, *DFVLR*; and A. R. Seebass, *University of Colorado* (22, 9, p. 1185) Article based on AIAA Paper 81-1235
- J84-258 Vortex Stability and Breakdown: Survey and Extension. Sidney Leibovich, *Cornell University* (22, 9, p. 1192) Survey Paper
- J84-259 Acoustic Near-Field Properties Associated with Broadband Shock Noise. John M. Seiner and James C. Yu, NASA Langley Research Center (22, 9, p. 1207) Article based on AIAA Paper 81-1975
- J84-260 Two-Dimensional Hydrodynamic Characteristics of a Bluff Symmetrical Fairing Section. D. E. Calkins, *University of Washington* (22, 9, p. 1216) Article based on AIAA Paper 82-0961
- J84-261 Second-Order Accurate Boundary Conditions for Compressible Flows. Panagiotis D. Sparis, *Democritus University of Thrace* (22, 9, p. 1222) Article
- J84-262 An Acoustic Evaluation of Circumferentially Segmented Duct Liners. Willie R. Watson, NASA Langley Research Center (22, 9, p. 1229) Article based on AIAA Paper 83-0732
- J84-263 Uniform Asymptotic Approximations for Duct Acoustic Modes in a Thin Boundary-Layer Flow. M. K. Myers and S. L. Chuang, *The George Washington University* (22, 9, p. 1234) Article based on AIAA Paper 83-0668
- J84-264 Two-Dimensional Acoustic Field in a Nonuniform Duct Carrying Compressible Flow. K. Uenishi and M. K. Myers, The George Washington University (22, 9, p. 1242) Article based on AIAA Paper 83-0669
- J84-265 An Experimental Investigation of Wake Edge Tones. C. O. Johnson, *Northrop Aircraft Company*; and R. I. Loehrke, *Colorado State University* (22, 9, p. 1249) Article based on AIAA Paper 83-0741

- J84-266 The Structure of Turbulence in a Supersonic Shock-Wave/Boundary-Layer Interaction. Pascal L. Ardonceau, Centre d'Etudes Aerodynamiques et Thermiques (22, 9, p. 1254) Article
- J84-267 LDV Measurements of Drop Velocity in Diesel-Type Sprays. K.-J. Wu, D. A. Santavicca and F. V. Bracco, Princeton University; and A. Coghe, Centro Ricerche Propulsione e Energetica CNR (22, 9, p. 1263) Article
- J84-268 Blackbody-Pumped CO<sub>2</sub> Laser Experiment. Robin J. Insuik and Walter H. Christiansen, *University of Washington* (22, 9, p. 1271) Article based on AIAA Paper 83-1701
- J84-269 Momentum Transfer to a Surface When Irradiated by a High-Power Laser. Girard A. Simons, *Physical Sciences Inc.* (22, 9, p. 1275) Article
- J84-270 Viscous-Inviscid Interactive Procedure for Rotational Flow in Cascades of Airfoils. W. Johnston, Georgia Institute of Technology; and P. Sockol, NASA Lewis Research Center (22, 9, p. 1281) Synoptic based on AIAA Paper 83-0256
- J84-271 Effects of Orthotropy and Width on the Compression Strength of Graphite-Epoxy Panels with Holes. Marvin D. Rhodes, Martin M. Mikulas Jr. and Paul E. McGowan, NASA Langley Research Center (22, 9, p. 1283) Article based on AIAA Paper 82-0749 CP823
- J84-272 Optimum Placement of Controls for Static Deformations of Space Structures. Raphael T. Haftka, Virginia Polytechnic Institute and State University (22, 9, p. 1293) Article
- J84-273 Structural Design Sensitivity Analysis with Generalized Global Stiffness and Mass Matrices. Edward J. Haug and Kyung K. Choi, *The University of Iowa* (22, 9, p. 1299) Article
- J84-274 Inverse Perturbation Method for Structural Redesign with Frequency and Mode Shape Constraints. Curtis J. Hoff, Michael M. Bernitsas, Robert E. Sandstřom and William J. Anderson, *The University of Michigan* (22, 9, p. 1304) Article
- J84-275 Time Finite Element Discretization of Hamilton's Law of Varying Action. Richard Riff and Menahem Baruch, Technion Israel Institute of Technology (22, 9, p. 1310) Article
- J84-276 Structural Dynamics of Rotating Bladed-Disk Assemblies Coupled with Flexible Shaft Motions. R. G. Loewy and N. Khader, *Rensselaer Polytechnic Institute* (22, 9, p. 1319) Article based on AIAA Paper 83-0919 CP831
- J84-277 Simplified Laplace Transform Inversion for Unsteady Surface Element Method for Transient Conduction. James V. Beck and Irwin P. Schisler, *Michigan State University*; and Ned R. Keltner, *Sandia National Laboratories* (22, 9, p. 1328) Article
- J84-278 Separation Jump and Sudden Stall over an Ellipsoidal Wing at Incidence. K. C. Wang, San Diego State University (22, 9, p. 1334) Technical Note
- J84-279 Wall Shear Fluctuations in a Turbulent Boundary Layer. M. A. Badri Narayanan, S. Raghu and Kamal Poddar, Indian Institute of Science (22, 9, p. 1336) Technical Note
- J84-280 A New Aerodynamic Integral Equation Based on an Acoustic Formula in the Time Domain. F. Farassat, NASA Langley Research Center (22, 9, p. 1337) Technical Note

- J84-281 Steady-State Response of Vibrating Systems to Periodic Pulse Excitation. R. B. Bhat, Concordia University (22, 9, p. 1340) Technical Note
- J84-282 Static Analysis of Stiffened Plates. R. S. Srinivasan and V. Thiruvenkatachari, *Indian Institute of Technology* (22, 9, p. 1342) Technical Note
- J84-283 Numerical Simulation of Wing-Fuselage Aerodynamic Interaction. J. S. Shang, Air Force Wright Aeronautical Laboratories (22, 10, p. 1345) Article based on AIAA Paper 83-0225
- J84-284 Gortler Instability of Compressible Boundary Layers. Nabil M. El-Hady and Alok K. Verma, *Old Dominion University* (22, 10, p. 1354) Synoptic based on AIAA Paper 81-1278
- J84-285 Quasisteady Modeling of Periodic Turbulent Pipe Flows. S. W. Tu, Bechtel Civil and Mineral Inc.; and B. R. Ramaprian, The University of Iowa (22, 10, p. 1356) Synoptic
- **J84-286 Supersonic** Axisymmetric Flow over Boattails Containing a Centered Propulsive Jet. George S. Deiwert, *NASA Ames Research Center* (22, 10, p. 1358) Article based on AIAA Paper 83-0462
- J84-287 Multiple Pure Tone Generation in Aeroengine Fans at Subsonic and Supersonic Relative Tip Speeds. P. G. Vaidya, Washington State University (22, 10, p. 1366) Article based on AIAA Paper 80-1051
- J84-288 Numerical Simulation of Near-Critical and Unsteady, Subcritical Inlet Flow. R. W. Newsome, *Air Force Wright Aeronautical Laboratories* (22, 10, p. 1375) Article based on AIAA Paper 83-0175
- J84-289 An Automatic Adaptive Numerical Method for Lifting Surface Theories. Shigenori Ando and Dong-Hwan Lee, Nagoya University (22, 10, p. 1380) Article
- J84-290 A Wall Law for Turbulent Boundary Layers in Adverse Pressure Gradients. Akira Nakayama and Hitoshi Koyama, Shizuoka University (22, 10, p. 1386) Article
- J84-291 Symbolic Manipulation and Computational Fluid Dynamics. Patrick J. Roache, *Ecodynamics Research Associates, Inc.*; and Stanley Steinberg, *University of New Mexico* (22, 10, p. 1390) Article based on AIAA Paper 83-1952 CP834
- J84-292 Interactive Phenomena in Supersonic Jet Mixing Problems, Part II: Numerical Studies. Sanford M. Dash and David E. Wolf, Science Applications, Inc. (22, 10, p. 1395) Article based on AIAA Paper 83-0288
- J84-293 A Model for Mercury Orificed Hollow Cathodes: Theory and Experiment. Daniel E. Siegfried and Paul J. Wilbur, Colorado State University (22, 10, p. 1405) Article based on AIAA Paper 82-1889
- J84-294 Pulse-Triggered Instability in Solid Rocket Motors. Joseph D. Baum and Jay N. Levine, Air Force Rocket Propulsion Laboratory/DYC; and Richard L. Lovine, Aerojet Tactical Systems (22, 10, p. 1413) Article based on AIAA Paper 82-1219
- J84-295 Turbulence Modeling for Three-Dimensional Shear Flows over Curved Rotating Bodies. J. M. Galmes and B. Lakshminarayana, *The Pennsylvania State University* (22, 10, p. 1420) Article based on AIAA Paper 83-0559

- J84-296 Numerical Solution for the Problem of Flame Propagation by the Random Element Method. A. F. Ghoniem, Massachusetts Institute of Technology; and A. K. Oppenheim, University of California (22, 10, p. 1429) Article
- J84-297 Experiments in Dilution Jet Mixing. J. D. Holdeman, NASA Lewis Research Center; R. Srinivasan and A. Berenfeld, The Garrett Turbine Engine Company (22, 10, p. 1436) Article based on AIAA Paper 83-1201
- J84-298 Influence of Laminar Flame Speed on the Blowoff Velocity of Bluff-Body-Stabilized Flames. N. K. Rizk and A. H. Lefebvre, *Purdue University* (22, 10, p. 1444) Article based on AIAA Paper 83-1327
- J84-299 A Comparison of Vaporization Models in Spray Calculations. S. K. Aggarwal, A. Y. Tong and W. A. Sirignano, Carnegie-Mellon University (22, 10, p. 1448) Article
- J84-300 ADS-1: A New General-Purpose Optimization Program. Garret N. Vanderplaats, University of California; Hiroyuki Sugimoto, Muroran Institute of Technology; and Chester M. Sprague, Coast Guard R&D Center (22, 10, p. 1458) Synoptic based on AIAA Paper 83-0831 CP831
- **J84-301 A Two-Dimensional Shear Spring Element.** A. S. Kuo, *Fairchild Republic Company* (22, 10, p. 1460) Article
- J84-302 Dynamics of a Near-Resonant Fluid-Filled Gyroscope. Roger F. Gans, U. S. Army Ballistic Research Laboratory (22, 10, p. 1465) Article
- J84-303 Thermal Stresses in Annular Glass-to-Metal Seals Under Thermal Shock. Klod Kokini and Richard W. Perkins, University of Pittsburgh (22, 10, p. 1472) Article
- J84-304 Pin-Loaded Holes in Large Orthotropic Plates. P. D. Mangalgiri, *Indian Institute of Science* (22, 10, p. 1478) Article
- J84-305 Statistical Treatment of Transverse Crack Propagation in Aligned Composites. F. Hikami, Sumitomo Metal Industries, Ltd.; and T. W. Chou, University of Delaware (22, 10, p. 1485) Article based on AIAA Paper 83-0800 CP831
- J84-306 Ablation of Carbonaceous Materials in a Hydrogen-Helium Arcjet Flow. Chul Park, J. H. Lundell, M. J. Green, W. Winovich and M. A. Covington, NASA Ames Research Center (22, 10, p. 1491) Article based on AIAA Paper 83-1561
- **J84-307 Thermal Postbuckling Behavior of Tapered Columns.** K. Kanaka Raju and G. Venkateswara Rao, *Vikram Sarabhai Space Centre* (22, 10, p. 1499) Technical Note
- J84-308 Thermal Constriction Resistance with Arbitrary Heating in a Convectively Cooled Plate. K. N. Shukla and Leelamma Mani, Vikram Sarabhai Space Centre (22, 10, p. 1501) Technical Note
- J84-309 Grid Generation Techniques in Computational Fluid Dynamics. Joe F. Thompson, *Mississippi State University* (22, 11, p. 1505) Survey Paper based on AIAA Paper 83-0447
- J84-310 Heat Transfer and Transition Mechanism on a Shock-Tube Wall. R. E. Dillon Jr., U. S. Military Academy; and H. T. Nagamatsu, Rensselaer Polytechnic Institute (22, 11, p. 1524) Article based on AIAA Paper 82-0032
- J84-311 Wavelength Selection and Growth of Gortler Vortices. Jerzy M. Floryan, *The University of Western Ontario*; and William S. Saric, *Virginia Polytechnic Institute and State University* (22, 11, p. 1529) Article based on AIAA Paper 80-1376

- J84-312 Effect of a Buried-Wire Gage on the Separation Bubble--Numerical Study. David Degani, NASA Ames Research Center (22, 11, p. 1539) Article
- J84-313 Ion Flow Experiments in a Multipole Discharge Chamber. Harold R. Kaufman, Raymond S. Robinson and Larry E. Frisa, *Colorado State University* (22, 11, p. 1544) Article based on AIAA Paper 82-1930
- J84-314 Interferometric Measurement of Heterogeneous Shear-Layer Spreading Rates. D. W. Bogdanoff, *University of Washington* (22, 11, p. 1550) Article
- J84-315 A Class of Bidiagonal Schemes for Solving the Euler Equations. F. Casier, H. Deconinck and Ch. Hirsch, *Vrije Universiteit Brussel* (22, 11, p. 1556) Article based on AIAA Paper 83-0126
- **J84-316 A Time-Split Finite-Volume Algorithm for Three- Dimensional Flowfield Simulation.** C. M. Hung and W. Kordulla, *NASA Ames Research Center* (22, 11, p. 1564)
  Article based on AIAA Paper 83-1957 CP834
- J84-317 Prediction of Compressible, Laminar Viscous Flows Using a Time-Marching Control Volume and Multiple-Grid Technique. Roger L. Davis and Ron Ho Ni, *United Technologies Corporation*; and Wallace W. Bowley, *University of Connecticut* (22, 11, p. 1573) Article based on AIAA Paper 83-1896 CP834
- J84-318 Blowing Model for Turbulent Boundary-Layer Dust Ingestion. Harold Mirels, *The Aerospace Corporation* (22, 11, p. 1582) Article
- J84-319 Forced Oscillations of Transonic Channel and Inlet Flows with Shock Waves. A. F. Messiter and T. C. Adamson Jr., The University of Michigan (22, 11, p. 1590) Article
- J84-320 Specific Heat of HMX. L. G. Koshigoe, R. L. Shoemaker and R. E. Taylor, *Purdue University* (22, 11, p. 1600) Synoptic
- J84-321 Prediction of an Axisymmetric Combusting Flow. S. M. Correa, General Electric Company (22, 11, p. 1602) Article based on AIAA Paper 83-1264
- J84-322 Application of the Godunov Method and Its Second-Order Extension to Cascade Flow Modeling. Shmuel Eidelman, Naval Postgraduate School; Phillip Colella, Lawrence Berkeley Laboratory; and Raymond P. Shreeve, Naval Postgraduate School (22, 11, p. 1609) Article based on AIAA Paper 83-1941 CP834
- J84-323 Generalized Dynamic Reduction in Finite Element Dynamic Optimization. Ki-Ook Kim and William J. Anderson, *The University of Michigan* (22, 11, p. 1616) Synoptic
- J84-324 Flutter of Turbofan Rotors with Mistuned Blades. Krishna Rao Kaza and Robert E. Kielb, NASA Lewis Research Center (22, 11, p. 1618) Article based on AIAA Paper 82-0726 CP823
- J84-325 A Characteristics Approach to Swept Shock-Wave/Boundary-Layer Interactions. R. J. Stalker, Institute for Experimental Fluid Mechanics, DFVLR (22, 11, p. 1626) Article based on AIAA Paper 82-0988
- J84-326 An Efficient Feasible Directions Algorithm for Design Synthesis. Garret N. Vanderplaats, *The University of California* (22, 11, p. 1633) Article based on AIAA Paper 83-0938 CP832

- J84-327 Buckling of Anisotropic Laminated Cylindrical Plates. James M. Whitney, Air Force Wright Aeronautical Laboratories (22, 11, p. 1641) Article based on AIAA Paper 83-0979 CP832
- J84-328 A Finite Element for Vibration Analysis of Twisted Blades Based on Beam Theory. F. Sisto and A. T. Chang, Stevens Institute of Technology (22, 11, p. 1646) Article based on AIAA Paper 83-0917 CP832
- J84-329 Flutter and Forced Response of Mistuned Rotors Using Standing Wave Analysis. John Dugundji and David J. Bundas, Massachusetts Institute of Technology (22, 11, p. 1652) Article based on AIAA Paper 83-0845 CP832
- J84-330 Control of the Properties of Carbon Fiber-Reinforced Plastics. R. G. White and T. A. Palmer, *University of Southampton* (22, 11, p. 1662) Article based on AIAA Paper 83-0859 CP832
- J84-331 Multiobjective Optimization in Structural Design with Uncertain Parameters and Stochastic Processes. S. S. Rao, San Diego State University (22, 11, p. 1670) Article
- J84-332 Reduction of Root-Mean-Square Error in Faceted Space Antennas. W. B. Fichter, NASA Langley Research Center (22, 11, p. 1679) Article based on AIAA Paper 83-1021 CP831
- J84-333 An Implicit Solution Procedure for Finite Difference Modeling of the Stefan Problem. G. E. Schneider and M. J. Raw, *University of Waterloo* (22, 11, p. 1685) Article based on AIAA Paper 83-1527
- J84-334 Mass Flux Boundary Conditions in Linear Theory. R. E. Melnik and W. H. Mason, *Grumman Aerospace Corporation* (22, 11, p. 1691) Technical Note
- J84-335 Application of Photon Correlation to Turbulent Fluid Mechanics. G. D. Catalano, Louisiana State University (22, 11, p. 1692) Technical Note
- J84-336 Calculation of Turbulent Diffusion Flame Using the Coherent Flame Sheet Model. Wai K. Cheng, Massachusetts Institute of Technology (22, 11, p. 1694) Technical Note
- J84-337 Analysis of Airfoil Leading-Edge Separation Bubbles. V. N. Vatsa and J. E. Carter, *United Technologies Research Center* (22, 12, p. 1697) Article based on AIAA Paper 83-0300
- J84-338 Grid Adaption for Problems in Fluid Dynamics. H. A. Dwyer, *University of California* (22, 12, p. 1705) Article based on AIAA Paper 83-0449
- J84-339 The Circular Cylinder in Subsonic and Transonic Flow. O. Rodriguez, *Institut de Mecanique des Fluides de Lille* (22, 12, p. 1713) Article
- J84-340 Wave Envelope and Infinite Element Schemes for Fan Noise Radiation from Turbofan Inlets. R. J. Astley and W. Eversman, *University of Missouri-Rolla* (22, 12, p. 1719) Article based on AIAA Paper 83-0709
- J84-341 Effect of Initial Conditions on Turbulent Reattachment Downstream of a Backward-Facing Step. R. V. Westphal and J. P. Johnston, *Stanford University* (22, 12, p. 1727) Article
- J84-342 Lift Hysteresis of an Oscillating Slender Ellipse. Mohammad A. Takallu, Old Dominion University; and James C. Williams III, Auburn University (22, 12, p. 1733) Article

- J84-343 Computation of Strongly Swirling Axisymmetric Free Jets. M. A. Leschziner, *University of Manchester Institute of Technology*; and W. Rodi, *University of Karlsruhe* (22, 12, p. 1742) Article
- J84-344 A General Perturbation Approach for Computational Fluid Dynamics. Leslie J. Chow and Thomas H. Pulliam, NASA Ames Research Center; and Joseph L. Steger, Stanford University (22, 12, p. 1748) Article based on AIAA Paper 83-1903 CP834
- J84-345 Application of the Implicit MacCormack Scheme to the Parabolized Navier-Stokes Equations. Scott L. Lawrence and J. C. Tannehill, *Iowa State University*; and Denny S. Chaussee, *NASA Ames Research Center* (22, 12, p. 1755) Article based on AIAA Paper 83-1956 CP834
- J84-346 Surface Phenomena in a Three-Dimensional Skewed Shock Wave/Laminar Boundary-Layer Interaction. G. Degrez, Universite Libre de Bruxelles; and J. J. Ginoux, von Karman Institute for Fluid Dynamics (22, 12, p. 1764) Article based on AIAA Paper 83-1755
- J84-347 Role of Constraints in Inverse Design for Transonic Airfoils. G. Volpe and R. E. Melnik, Grumman Aerospace Corporation (22, 12, p. 1770) Article based on AIAA Paper 81-1233
- J84-348 Laser-Driven Shock Waves in an Aerosol-Induced Breakdown in Air. P. Vigliano, M. Autric, J. P. Caressa, V. Chhim and D. Dufresne, *Institute of Fluid Mechanics (France)* (22, 12, p. 1779) Article
- J84-349 Effect of Residual Stresses on Crack Growth from a Hole. A. F. Liu, *Northrop Corporation* (22, 12, p. 1784) Synoptic based on AIAA Paper 83-0840 CP831
- J84-350 Planar Towing and Hydroelastic Stability of Faired Underwater Cables. C. Y. Hung and S. Nair, *Illinois Institute of Technology* (22, 12, p. 1786) Article
- J84-351 Nonlinear Behavior of Thin Columns Under a Parametrically Excited Load. M. Sunakawa and K. Higuchi, *The University of Tokyo* (22, 12, p. 1791) Article based on AIAA Paper 83-0862 CP831

- J84-352 Natural Convection-Radiation Interaction in Boundary-Layer Flow over Horizontal Surfaces. M. M. Ali, T. S. Chen and B. F. Armaly, *University of Missouri-Rolla* (22, 12, p. 1797) Article based on AIAA Paper 82-0917
- J84-353 Unsteady Radiative Heat Transfer in a Scattering-Dominant Medium. Syozo Kubo, Kyoto University (22, 12, p. 1804) Article
- J84-354 Thermal Conductance of Pressed Copper Contacts at Liquid Helium Temperatures. L. J. Salerno and P. Kittel, NASA Ames Research Center; and A. L. Spivak, Trans-Bay Electronics (22, 12, p. 1810) Article based on AIAA Paper 83-1436
- J84-355 Measurements of Turbulent Flow Behind a Flat Plate Mounted Normal to the Wall. A. Nakayama and H. R. Rahai, California State University (22, 12, p. 1817) Technical Note
- J84-356 Linearization of Turbulent Boundary-Layer Equations. Tuncer Cebeci, California State University; K. C. Chang and D. P. Mack, Douglas Aircraft Company (22, 12, p. 1819) Technical Note
- **J84-357 Effect of Angle of Attack on Rotor Trailing-Edge Noise.** S.-T. Chou and A. R. George, *Cornell University* (22, 12, p. 1821) Technical Note
- J84-358 Thermal Performance of a Logarithmic-Spiral Resonance Tube. Rafik A. Neemeh, P. Perry Ostrowski and James H. T. Wu, *Concordia University* (22, 12, p. 1823) Technical Note
- J84-359 Proper Definition of Curvature in Nonlinear Beam Kinematics. Dewey H. Hodges, U. S. Army Research and Technology Laboratories (AVSCOM) (22, 12, p. 1825) Technical Note
- J84-360 Application of the Generalized Inverse in Structural System Identification. Shyi-Yaung Chen and Jon-Shen Fuh, Kaman Aerospace Corporation (22, 12, p. 1827) Technical Note
- J84-361 The Fuel Property/Flame Radiation Relationship for Gas Turbine Combustors. Jim A. Clark, *The Ohio State University* (22, 12, p. 1828) Technical Note