

## Chronological Index

**J77-001 A Finite-Element Approach for Nonlinear Panel Flutter.** C. Mei, *Old Dominion University* (AIAAJ 16, 8, p. 1107) Article

Technical Comment by G. Prathap and G. R. Bhashyam, *National Aeronautical Laboratory* (AIAAJ 18, 6, p. 733)

Reply (AIAAJ 18, 6, p. 734)

**J78-001 Bond Thickness Effects upon Stresses In Single-Lap Adhesive Joints.** I. U. Ojalvo and H. L. Eidinoff, *Grumman Aerospace Corporation* (AIAAJ 16, 3, p. 204) Article

Technical Comment by William C. Carpenter, *University of South Florida* (AIAAJ 18, 3, p. 350)

Reply (AIAAJ 18, 3, p. 352)

**J79-001 Exact Similar Solution for an Axisymmetric Laminar Boundary Layer on a Circular Cone.** B.R. Clayton and B.S. Massey, *University College* (AIAAJ 17, 7, p. 785) Technical Note

Errata (AIAAJ 18, 2, p. 224)

**J79-002 Direct Solutions for Strum-Liouville Systems with Discontinuous Coefficients.** D. H. Hodges, *U.S. Army Research and Technology Laboratories (AVRADCOM), NASA Ames Research Center* (AIAAJ 17, 8, p. 924) Technical Note

Technical Comment by Earl H. Dowell, *Princeton University* (AIAAJ 18, 6, p. 735)

Reply (AIAAJ 18, 6, p. 735)

**J79-003 Rapid Calculation of the Resonance Frequency for Rotationally Restrained Rectangular Plates.** E. M. Nassar, *Arab Organization for Industrialization* (AIAAJ 17, 1, p. 6) Article

Technical Comment by Patricio A. A. Laura, *Institute of Applied Mechanics* (AIAAJ 18, 10, p. 1279)

Reply (AIAAJ 18, 10, p. 1279)

**J79-004 Hysteresis Zone or Locus-Aerodynamics of Bulbous Based Bodies at Low Speeds.** E. E. Covert, *Massachusetts Institute of Technology* (AIAAJ 17, 6, p. 659) Technical Note

Technical Comment by Lars E. Ericsson and J. Peter Reding, *Lockheed Missiles & Space Company, Inc.* (AIAAJ 18, 10, p. 1280)

Reply (AIAAJ 18, 10, p. 1280)

**J79-005 Methods of Design Sensitivity Analysis in Structural Optimization.** J. S. Arora and E. J. Haug, *The University of Iowa* (AIAAJ 17, 9, p. 970) Article

Technical Comment by Garret N. Vanderplaats, *Naval Postgraduate School* (AIAAJ 18, 11, p. 1406)

Reply (AIAAJ 18, 11, p. 1407)

**J79-006 Criterion for Vortex Periodicity in Cylinder Wakes.** L. E. Ericsson and J. P. Reding, *Lockheed Missiles & Space Company, Inc.* (AIAAJ 17, 9, p. 1012) Technical Note

Technical Comment by N. R. Keshavan, *Hindustan Aeronautics Limited* (AIAAJ 18, 11, p. 1408)

Reply (AIAAJ 18, 11, p. 1408)

**J80-001 New Technique for Reducing Test Section Noise in Supersonic Wind Tunnels.** J. B. Anders, P. C. Stainback and I. E. Beckwith, *NASA Langley Research Center* (AIAAJ 18, 1, p. 5) Synoptic based on AIAA Paper 78-817 CP783

**J80-002 Resonance Frequencies of Ventilated Wind Tunnels.** Dennis G. Mabey, *Royal Aircraft Establishment* (AIAAJ 18, 1, p. 7) Synoptic

**J80-003 Correlation Technique for Predicting Attached Turbulent Boundary-Layer/Flap Interaction Pressures.** R. Rosen, D. L. Pavish and W. A. Anderson, *McDonnell Douglas Astronautics Company* (AIAAJ 18, 1, p. 9) Synoptic based on AIAA Paper 79-0141

**J80-004 Influence of Freestream Turbulence on Boundary-Layer Development.** H. U. Meier and H.-P. Kreplin, *Deutsche Forschungs-und Versuchsanstalt fur Luft-und Raumfahrt e.V.* (AIAAJ 18, 1, p. 11) Article based on AIAA Paper 78-800 CP783

**J80-005 Transonic Flow Past a Symmetrical Airfoil—Inviscid and Turbulent Flow Properties.** D. A. Johnson and W. D. Bachalo, *NASA Ames Research Center* (AIAAJ 18, 1, p. 16) Article based on AIAA Paper 78-1117

**J80-006 Calculation of Laminar Separation Bubbles and Their Effect on Airfoil Performance.** W. B. Roberts, *Nielsen Engineering & Research, Inc.* (AIAAJ 18, 1, p. 25) Article based on AIAA Paper 79-0285

**J80-007 Analysis of Neutrally Stable Atmospheric Flow over a Two-Dimensional Forward-Facing Step.** Walter Frost, Juergen Bitte and Chih Fang Shieh, *The University of Tennessee Space Institute* (AIAAJ 18, 1, p. 32) Article based on AIAA Paper 76-387

**J80-008 MHD Boundary Layer of the Seeded Combustion Gas near Cold Electrodes.** Ken Okazaki, Kunio Hijikata, Yasuo Mori and Kazutomo Ohtake, *Tokyo Institute of Technology* (AIAAJ 18, 1, p. 39) Article

**J80-009 Experimental Studies of the Production of Converging Cylindrical Shock Waves.** James H. T. Wu, *McGill University*; Rafik A. Neemeh, *Concordia University*; and P. P. Ostrowski, *University of Maryland* (AIAAJ 18, 1, p. 47) Synoptic

**J80-010 Optimal Nodal Point Distribution for Improved Accuracy in Computational Fluid Dynamics.** Bion Pierson, *Iowa State University*; and Paul Kutler, *NASA Ames Research Center* (AIAAJ 18, 1, p. 49) Article based on AIAA Paper 79-0272

**J80-011 Boundary-Layer-Induced Secondary Flows on Wing-Body Configurations.** S. G. Rubin, *Polytechnic Institute of New York*; and J. M. Lyons, *Pratt & Whitney Aircraft Company* (AIAAJ 18, 1, p. 55) Article based on AIAA Paper 79-0140

Technical Comment by Henry E. Fettis, *Consultant/Mountain View, California* (AIAAJ 18, 8, p. 1023)

**J80-012 Transonic Wind Tunnel Interference Assessment—Axisymmetric Flows.** Stephen S. Stahara, *Nielsen Engineering & Research, Inc.*; and John R. Spreiter, *Stanford University* (AIAAJ 18, 1, p. 63) Article based on AIAA Paper 79-0203

**J80-013 Numerical Study of Strong Slot Injection into a Supersonic Laminar Boundary Layer.** Michele Napolitano, *University Cincinnati* (AIAAJ 18, 1, p. 72) Article based on AIAA Paper 79-0142

**J80-014 Supersonic, Inviscid, Conical Corner Flowfields.** Frank Marconi, *Grumman Aerospace Corporation* (AIAAJ 18, 1, p. 78) Article based on AIAA Paper 79-0014

**J80-015 Investigation of Crossflow Shocks on Delta Wings in Supersonic Flow.** Michael J. Siclari, *Grumman Aerospace Corporation* (AIAAJ 18, 1, p. 85) Article based on AIAA Paper 79-0345

**J80-016 Pulsed Laser-Generated Impulse on a Surface in Supersonic Flow.** J. A. Woodroffe, J. O. A. Stankevics, A. Ballantyne and J. P. Reilly, *Avco-Everett Research Laboratory, Inc.* (AIAAJ 18, 1, p. 94) Synoptic

**J80-017 Pulsed Laser-Induced Shattering of Water Drops.** P. I. Singh and C. J. Knight, *Avco Everett Research Laboratory* (AIAAJ 18, 1, p. 96) Article based on AIAA Paper 78-1218

**J80-018 Flowfield Computations in Rotating Propulsive Nozzles.** Joseph Vadyak, and Joe D. Hoffman, *Purdue University*; and R. H. Whitesides Jr., *Thiokol Corporation* (AIAAJ 18, 1, p. 101) Synoptic based on AIAA Paper 78-1046

**J80-019 Calculation of Two-Dimensional Potential Cascade Flow.** Joseph R. Caspar, David E. Hobbs and Roger L. Davis, *United Technologies Corporation* (AIAAJ 18, 1, p. 103) Article based on AIAA Paper 79-0077

**J80-020 Effect of Prebuckling Deformations on Buckling of Laminated Composite Circular Cylindrical Shells.** Robert M. Jones and Jose C. F. Hennemann, *Southern Methodist University* (AIAAJ 18, 1, p. 110) Article based on AIAA Paper 78-516 CP781

**J80-021 Jupiter Entry Simulation Using a High-Performance Arc Heater.** J. H. Painter and J. C. Kroutil, *McDonnell Douglas Corporation* (AIAAJ 18, 1, p. 116) Synoptic based on AIAA Paper 78-1602 CP788

**J80-022 Pulsed Raman Measurements in a Stratified Charge Engine.** J. Ray Smith, *Sandia Laboratories* (AIAAJ 18, 1, p. 118) Technical Note

**J80-023 Simple Analytical Modeling of Supersonic Flow around Blunt Axisymmetrical Bodies.** D. R. Philpott, *The Hatfield Polytechnic* (AIAAJ 18, 1, p. 120) Technical Note based on AIAA Paper 78-1356 CP786

**J80-024 Resonant Wave Interactions on a Swept Wing.** Spyridon G. Lekoudis, *Lockheed-Georgia Company* (AIAAJ 18, 1, p. 122) Technical Note

**J80-025 Effect of Shear Deformation and Rotatory Inertia on the Stability of Beck's and Leipholz's Columns.** V. Sundaramaiah and G. Venkateswara Rao, *Vikram Sarabhai Space Centre* (AIAAJ 18, 1, p. 124) Technical Note

**J80-026 Stress Analysis of a Plate Containing Two Circular Holes Having Tangential Stresses.** Vijay G. Ukadgaonker, *Indian Institute of Technology* (AIAAJ 18, 1, p. 125) Technical Note

**J80-027 Rational New Approach to the Response of an Aircraft Encountering Atmospheric Turbulence.** J. C. T. Wang and S. F. Shen, *Cornell University* (AIAAJ 18, 2, p. 129) Article based on AIAA Paper 77-115

**J80-028 The Supersonic Triplet-A New Aerodynamic Panel Singularity with Directional Properties.** Frank A. Woodward, *Analytical Methods, Inc.*; and Emma Jean Landrum, *NASA Langley Research Center* (AIAAJ 18, 2, p. 138) Article based on AIAA Paper 79-0273

**J80-029 Efficient Transonic Shock-Free Wing Redesign Procedure Using a Fictitious Gas Method.** N. J. Yu, *The Boeing Company* (AIAAJ 18, 2, p. 143) Article based on AIAA Paper 79-0075

**J80-030 Effect of Dissipation and Dispersion on Slowly Varying Wavetrains.** Wilson C. Chin, *Massachusetts Institute of Technology* (AIAAJ 18, 2, p. 149) Article

**J80-031 Implicit Finite-Difference Simulations of Three-Dimensional Compressible Flow.** Thomas H. Pulliam and Joseph L. Steger, *NASA Ames Research Center* (AIAAJ 18, 2, p. 159) Article based on AIAA Paper 78-10

**J80-032 Computations of Jet Impingement on a Flat Surface.** A. Rubel, *Grumman Aerospace Corporation* (AIAAJ 18, 2, p. 168) Article based on AIAA Paper 78-207

**J80-033 Solar Pulsations.** Jack B. Zirker, *Sacramento Peak Observatory* (AIAAJ 18, 2, p. 176) Article based on AIAA Paper 79-0318

**J80-034 Local Turbulence Properties in Flames from Time-Averaged Raman Spectroscopy Measurements.** Robert E. Setchell, *Sandia Laboratories* (AIAAJ 18, 2, p. 181) Article based on AIAA Paper 79-0087

**J80-035 Influence of Chemical Kinetics and Unmixedness on Burning in Supersonic Hydrogen Flames.** John S. Evans and Charles J. Schexnayder Jr., *NASA Langley Research Center* (AIAAJ 18, 2, p. 188) Article based on AIAA Paper 79-0355

**J80-036 Coupled Bending-Torsion Flutter in Cascades.** Oddvar Bendiksen and Peretz Friedmann, *University of California* (AIAAJ 18, 2, p. 194) Article based on AIAA Paper 79-0793 CP793

**J80-037 Temperature and Heat Load Distribution in Rotating Heat Pipes.** T. C. Daniels and N. S. Al-Baharnah, *Univeristy of Swansea* (AIAAJ 18, 2, p. 202) Article based on AIAA Paper 78-416

**J80-038 Experimental Investigation of Heat and Mass Diffusion in a Porous Tube-Generated Flowfield.** J. M. Avidor and M. Delichatsios, *Avco Everett Research Laboratory* (AIAAJ 18, 2, p. 208) Article based on AIAA Paper 78-178

**J80-039 Radiation from Particles Injected into Hypersonic Flowfields.** Nelson H. Kemp and George E. Caledonia, *Physical Sciences, Inc.* (AIAAJ 18, 2, p. 215) Article

**J80-040 Experimental Study of Turbulent Flow near a Suction Tube.** Shinichi Yuu, *Kyushu Institute of Technology* (AIAAJ 18, 2, p. 222) Technical Note

**J80-042 Study of Coherent Structures in Axisymmetric Jets Using an Optical Technique.** Gautam T. Kalghatgi, *University of Southampton* (AIAAJ 18, 3, p. 225) Synoptic

**J80-043 Flow Patterns Near a Conical Sonic Line.** Manuel D. Salas, *NASA Langley Research Center* (AIAAJ 18, 3, p. 227) Article based on AIAA Paper 79-0341

**J80-044 Calculation of Separated Turbulent Flows on Axisymmetric Afterbodies Including Exhaust Plume Effects.** Gary D. Kuhn, *Nielsen Engineering & Research, Inc.* (AIAAJ 18, 3, p. 235) Article based on AIAA Paper 79-0303

**J80-045 Nonlinear Stability of Parallel Flows By High-Order Amplitude Expansions.** Thorwald Herbert, *Universität Stuttgart* (AIAAJ 18, 3, p. 243) Article based on AIAA Paper 78-1125

**J80-046 Calculation of Transonic Aileron Buzz.** J. L. Steger and H. E. Bailey, *NASA Ames Research Center* (AIAAJ 18, 3, p. 249) Article based on AIAA Paper 79-0134

**J80-047 Separation of Core Noise and Jet Noise.** S. P. Parthasarathy, R. F. Cuffel and P. F. Massier, *Jet Propulsion Laboratory, California Institute of Technology* (AIAAJ 18, 3, p. 256) Article based on AIAA Paper 79-0589

**J80-048 Radiation of an Acoustic Source Near the Trailing Edge of a Wing in Forward Motion.** Lu Ting, *New York University* (AIAAJ 18, 3, p. 262) Article based on AIAA Paper 79-0605

**J80-049 Correlation of Combustor Rig Sound Power Data and Theoretical Basis of Results.** Warren C. Strahle and M. Muthukrishnan, *Georgia Institute of Technology* (AIAAJ 18, 3, p. 269) Article based on AIAA Paper 79-0587

**J80-050 Turbulent Flows Produced by Perforated Plate Generators in Wind Tunnels.** Barry Gilbert, *Grumman Aerospace Corporation* (AIAAJ 18, 3, p. 275) Synoptic

**J80-051 Review of Composite Propellant Burn Rate Modeling.** Norman S. Cohen, *Norman Cohen Professional Services* (AIAAJ 18, 3, p. 277) Survey Paper based on AIAA Paper 79-0160

**J80-052 Model of Transverse Fuel Injection in Supersonic Combustors.** R. C. Rogers, *NASA Langley Research Center* (AIAAJ 18, 3, p. 294) Article based on AIAA Paper 79-0359

**J80-053 Numerical Analysis of Flowfields Generated by Accelerating Flames.** J. Kurylo, *Lawrence Berkeley Laboratory*; H. A. Dwyer and A. K. Oppenheim, *University of California* (AIAAJ 18, 3, p. 302) Article based on AIAA Paper 79-0290

**J80-054 Explicit High-Order Finite-Difference Analysis of Rotationally Symmetric Shells.** Troy Alvin Smith, *U.S. Army Missile Command* (AIAAJ 18, 3, p. 309) Article

**J80-055 Fatigue Life Estimates of Mistuned Blades Via a Stochastic Approach.** Gene Sogliero, *Trinity College*; and A. V. Srinivasan, *United Technologies Research Center* (AIAAJ 18, 3, p. 318) Article

**J80-056 The Cracked Shear Panel.** John Eftis and Natarajan Subramonian, *The George Washington University* (AIAAJ 18, 3, p. 324) Article

**J80-057 Laser Radiation-Gasdynamic Coupling in the SF<sub>6</sub>-Air Laminar Boundary Layer.** J. L. Wagner, *John Hopkins University*; and Anderson J. D. Jr., *University of Maryland* (AIAAJ 18, 3, p. 333) Synoptic based on AIAA Paper 78-1192

**J80-058 Mathematical Criterion for Unsteady Boundary-Layer Separation.** James C. Williams III, *North Carolina State University* (AIAAJ 18, 3, p. 335) Technical Note

**J80-059 Strouhal Number Influence on Flight Effects on Jet Noise Radiated from Convecting Quadrupoles.** R. Dash, *NASA Ames Research Center* (AIAAJ 18, 3, p. 337) Technical Note

**J80-060 Effect of Temperature on Surface Noise.** W. Olsen and C. Wasserbauer, *NASA Lewis Research Center* (AIAAJ 18, 3, p. 339) Technical Note

**J80-061 Observations on the Strained Coordinate Method for Transonic Flows.** D. Nixon, *Nielsen Engineering and Research, Incorporated* (AIAAJ 18, 3, p. 341) Technical Note

**J80-062 Effects of Adverse Pressure Gradient on the Incompressible Reattaching Flow over a Rearward-Facing Step.** Donald M. Kuehn, *NASA Ames Research Center* (AIAAJ 18, 3, p. 343) Technical Note

**J80-063 Use of Metallic Analog Materials in Low-Gravity Solidification Experiments.** John M. Papazian, *Grumman Aerospace Corporation* (AIAAJ 18, 3, p. 344) Technical Note

**J80-064 On The Fundamental Solution for a Cascade.** T. F. Balsa, *General Electric Corporate Research and Development* (AIAAJ 18, 3, p. 346) Technical Note

**J80-065 Hamilton's Law and the Stability of Nonconservative Continuous Systems.** Cecil D. Bailey, *The Ohio State University* (AIAAJ 18, 3, p. 347) Technical Note

**J80-068 Master Plan for Prediction of Vehicle Interior Noise.** Earl H. Dowell, *Princeton University* (AIAAJ 18, 4, p. 353) Survey Paper based on AIAA Paper 79-0582

**J80-069 Three-Dimensional Flow Over Wings with Leading-Edge Vortex Separation.** F. T. Johnson and E. N. Tinoco, *Boeing Aerospace Company*; P. Lu and M. A. Epton, *Boeing Computer Services* (AIAAJ 18, 4, p. 367) Article based on AIAA Paper 79-0282

**J80-070 Slender Wing Theory for Nonuniform Stream.** M. Hanin and A. Barsony-Nagy, *Technion-Israel Institute of Technology* (AIAAJ 18, 4, p. 381) Article

**J80-071 Unsteady Potential Aerodynamics of Rotors with Applications to Horizontal-Axis Windmills.** Robert D. Preuss, Emil O. Suci and Luigi Morino, *Boston University* (AIAAJ 18, 4, p. 385) Article

**J80-072 Oscillations of the Supersonic Flow Downstream of an Abrupt Increase in Duct Cross Section.** G. E. A. Meier, G. Grabitz, W. M. Jungowski, K. J. Witzak and J. S. Anderson, *Max-Planck-Institut fur Stromungsforschung* (AIAAJ 1, 4, p. 394) Synoptic

**J80-073 Do Locally Reacting Acoustic Liners Always Behave as They Should?** T. Zandbergen, *National Aerospace Laboratory (NLR)* (AIAAJ 18, 4, p. 396) Synoptic based on AIAA Paper 79-0597

**J80-074 On Stability and Transition in Three-Dimensional Flows.** Tuncer Cebeci, *California State University at Long Beach*; and Keith Stewartson, *University College* (AIAAJ 18, 4, p. 398) Article based on AIAA Paper 79-0263

**J80-075 Stability of Three-Dimensional Boundary Layers.** Ali H. Nayfeh, *Virginia Polytechnic Institute and State University* (AIAAJ 18, 4, p. 406) Article based on AIAA Paper 79-0262

**J80-076 Aerodynamic Interference Effects on Oscillating Airfoils with Controls in Ventilated Wind Tunnels.** J. A. Fromme and M. A. Golberg, *University of Nevada* (AIAAJ 18, 4, p. 417) Article based on AIAA Paper 79-0346

**J80-077 Experimental Study of Sound Radiation from a Subsonic Jet in Simulated Motion.** J. C. Yu, *NASA Langley Research Center*; and N. R. Dixon, *George Washington University* (AIAAJ 18, 4, p. 427) Article based on AIAA Paper 79-0185

**J80-078 Discrete Noise Spectrum Generated by an Acoustically Excited Jet.** Valdis Kibens, *McDonnell Douglas Corporation* (AIAAJ 18, 4, p. 434) Article based on AIAA Paper 79-0592

**J80-079 Surface Disintegration and Bubble Formation in Vertically Vibrated Liquid Column.** Hiroyuki Hashimoto and Seiichi Sudo, *Tohoku University* (AIAAJ 18, 4, p. 442) Article

**J80-080 Scaling and Performance of Dump Combustors with Transverse Gas Jets.** P. Roy Choudhury, *University of Southern California* (AIAAJ 18, 4, p. 450) Article based on AIAA Paper 79-0382

**J80-081 Reduced Basis Technique for Nonlinear Analysis of Structures.** Ahmed K. Noor and Jeanne M. Peters, *George Washington University Center* (AIAAJ 18, 4, p. 455) Article based on AIAA Paper 79-0747 CP794

**J80-082 Transport Property Correlations for H<sub>2</sub>-He Gas Mixtures at Temperatures of 1000-25,000 K.** E. V. Zoby, R. A. Graves Jr., J. N. Moss, A. Kumar and A. Simmonds, *NASA Langley Research Center* (AIAAJ 18, 4, p. 463) Article based on AIAA Paper 79-0034

**J80-083 Free Jet Expansion in a Rapidly Rotating Gas.** Hisashi Mikami, *Tokyo Institute of Technology* (AIAAJ 18, 4, p. 471) Technical Note

**J80-084 Static Stability Analysis of Elastically Restrained Structures under Follower Forces.** A. N. Kounadis, *National Technical University of Athens* (AIAAJ 18, 4, p. 473) Technical Note

**J80-085 Thermal Coupling of 2.8- $\mu$ m Laser Radiation to Metal Targets.** D. B. Nichols and R. B. Hall, *The Boeing Aerospace Company* (AIAAJ 18, 4, p. 476) Technical Note

**J80-086 Shock Tunnel Measurement of Ionization Rates in Hydrogen.** R. J. Stalker, *University of Queensland* (AIAAJ 18, 4, p. 478) Technical Note

**J80-087 The Delta Wing in Oscillatory Gusts.** M. H. Patel, *University College London* (AIAAJ 18, 5, p. 481) Article

**J80-088 Efficient Generation of Body-Fitted Coordinates for Cascades Using Multigrid.** R. Camarero and M. Younis, *Ecole Polytechnique* (AIAAJ 18, 5, p. 487) Synoptic based on AIAA Paper 79-7049

**J80-089 Turbulence Modeling for Unsteady Transonic Flows.** J. G. Marvin, L. L. Levy Jr. and H. L. Seegmiller, *NASA Ames Research Center* (AIAAJ 18, 5, p. 489) Article based on AIAA Paper 79-0071

**J80-090 Trailing Edge Conditions for Unsteady Flows at High Reduced Frequency.** Sanford Fleeter, *Purdue University* (AIAAJ 18, 5, p. 497) Article based on AIAA Paper 79-0152

**J80-091 Comparison of Measured and Predicted Impedance at Grazing Incidence.** Harold C. Lester and Tony L. Parrott, *NASA Langley Research Center* (AIAAJ 18, 5, p. 504) Article based on AIAA Paper 79-0664

**J80-092 Applications of Velocity Potential Function to Acoustic Duct Propagation Using Finite Elements.** K. J. Baumeister, *NASA Lewis Research Center*; and R. K. Majjigi, *General Electric Company* (AIAAJ 18, 5, p. 509) Article based on AIAA Paper 79-0680

**J80-093 Transmission of Sound Through Nonuniform Circular Ducts with Compressible Mean Flows.** A. H. Nayfeh, B. S. Shaker and J. E. Kaiser, *Virginia Polytechnic Institute and State University* (AIAAJ 18, 5, p. 515) Article based on AIAA Paper 79-0622

**J80-094 Analysis of Two-Dimensional Incompressible Flows by a Subsurface Panel Method.** Jack Moran, Kevin Cole and David Wahl, *University of Minnesota* (AIAAJ 18, 5, p. 526) Article

**J80-095 Stability Aspects of Diverging Subsonic Flow.** Michael C. Cline, *University of California* (AIAAJ 18, 5, p. 534) Article

**J80-096 Subsonic Flow Past an Oscillating Cascade with Finite Mean Flow Deflection.** Joseph M. Verdon and Joseph R. Caspar, *United Technologies Research Center* (AIAAJ 18, 5, p. 540) Article based on AIAA Paper 79-1516

**J80-097 Noise Radiation from the Side Edges of Flaps.** Jay C. Hardin, *NASA Langley Research Center* (AIAAJ 18, 5, p. 549) Article

**J80-098 Processing of Glass in Space.** Robert H. Doremus, *University of California* (AIAAJ 18, 5, p. 553) Synoptic based on AIAA Paper 79-0031

**J80-099 Acoustic Suppression in a Pulsed Laser System.** B. N. Srivastava, C. J. Knight and O. Zappa, *Avco Everett Research Laboratory* (AIAAJ 18, 5, p. 555) Article based on AIAA Paper 79-0209

**J80-100 Optimal Design of Large Structures for Damage Tolerance.** Jasbir S. Arora, *University of Iowa*; Donald F. Haskell, *Ballistic Research Laboratory*; and Ashok K. Govil, *Regional Engineering College* (AIAAJ 18, 5, p. 563) Article

**J80-101 Buckling of Orthogonally Stiffened Finite Oval Cylindrical Shells under Axial Compression.** V. Volpe, *Grumman Aerospace Corp.*; Y. N. Chen, *American Bureau of Shipping*; and J. Kempner, *Polytechnic Institute of New York* (AIAAJ 18, 5, p. 571) Article

**J80-102 Strength of Initially Wavy Lattice Columns.** R. F. Crawford, *General Research Corporation*; and M. D. Benton, *AEC-ABLE Engineering Company, Inc.* (AIAAJ 18, 5, p. 581) Article based on AIAA Paper 79-0753 CP794

**J80-103 Strength Predictions of Composite Laminates with Unloaded Fastener Holes.** S. P. Garbo and J. M. Ogonowski, *McDonnell Aircraft Company* (AIAAJ 18, 5, p. 585) Article based on AIAA Paper 79-0800 CP794

**J80-104 Nonlinear Stress-Strain Law for Metallic Meshes.** S. Tang, R. Boyle, J. Whiteside and R. Anderson, *Grumman Aerospace Corporation* (AIAAJ 18, 5, p. 590) Article based on AIAA Paper 79-0936 CP797

**J80-105 Proposed Computational Method for Transport Properties of Ablation Products.** Louis Biolsi, *University of Colorado/NOAA* (AIAAJ 18, 5, p. 596) Synoptic

**J80-106 Design of Flat Plate Leading Edges to Avoid Flow Separation.** M. R. Davis, *University of New South Wales* (AIAAJ 18, 5, p. 598) Technical Note

**J80-107 Effects of Swirl on the Subcritical Performance of Convergent Nozzles.** P. W. Carpenter, *University of Exeter* (AIAAJ 18, 5, p. 600) Technical Note

**J80-108 Free-Molecule Normal-Momentum Transfer at Satellite Surfaces.** Eldon L. Knuth, *University of California* (AIAAJ 18, 5, p. 602) Technical Note

**J80-109 Recent Experiments on Heterogeneous Detonation Waves.** J. A. Nicholls, R. Bar-Or, Z. Gabrijel and E. Petkus, *The University of Michigan* (AIAAJ 18, 5, p. 605) Technical Note based on AIAA Paper 79-0288

**J80-110 Axisymmetric Transonic Flow Past Slender Bodies by an Integral Equation Method.** N. L. Arora and J. P. Agarwal, *Indian Institute of Technology* (AIAAJ 18, 5, p. 606) Technical Note

**J80-111 Mach Number and Temperature Effects on Jets.** J. C. Lau, *Lockheed-Georgia Company* (AIAAJ 18, 6, p. 609) Synoptic based on AIAA Paper 78-1152

**J80-112 Complete Supersonic Flowfields over Blunt Bodies in a Generalized Orthogonal Coordinate System.** Peter A. Gnoffo, *NASA Langley Research Center* (AIAAJ 18, 6, p. 611) Synoptic

**J80-113 Sound Power Spectrum of Shock-Free Jets.** C. L. Morfey and G. P. Howell, *Southampton University* (AIAAJ 18, 6, p. 613) Synoptic based on AIAA Paper 79-0595

**J80-114 Unsteady Thin Airfoil Theory for Transonic Flows with Embedded Shocks.** M. H. Williams, *Princeton University* (AIAAJ 18, 6, p. 615) Article based on AIAA Paper 79-0204

**J80-115 Effect of Injection Angle on Liquid Injection in Supersonic Flow.** S. I. Baranovsky and J. A. Schetz, *Virginia Polytechnic Institute and State University* (AIAAJ 18, 6, p. 625) Article based on AIAA Paper 79-0383

**J80-116 Effect of Density on Noise Radiation from Subsonic Inverted Velocity Profile Jets.** Virendra Sarohia and P. F. Massier, *Jet Propulsion Laboratory* (AIAAJ 18, 6, p. 630) Article based on AIAA Paper 79-0634

**J80-117 Unified Aerodynamic-Acoustic Theory for a Thin Rectangular Wing Encountering a Gust.** Rudolph Martinez and Sheila E. Widnall, *Massachusetts Institute of Technology* (AIAAJ 18, 6, p. 636) Article

**J80-118 Careful Numerical Study of Flowfields about Symmetric External Conical Corners.** Manuel D. Salas, *NASA Langley Research Center* (AIAAJ 18, 6, p. 646) Article based on AIAA Paper 79-1511

**J80-119 Direct Control of the Grid Point Distribution in Meshes Generated by Elliptic Equations.** Thomas P. D. and J. F. Middlecoff, *Lockheed Palo Alto Research Laboratory* (AIAAJ 18, 6, p. 652) Article based on AIAA Paper 79-1462 CP799

**J80-120 Pressure Wave Suppression for a Pulsed Chemical Laser.** William J. Thayer III, Victor R. Buonadonna and William D. Sherman, *Boeing Aerospace Company* (AIAAJ 18, 6, p. 657) Article based on AIAA Paper 78-1216

**J80-121 Determining Size Distribution of Liquid Nitrogen Particles Flowing in an Airstream by Scattered Light Detection.** M. E. Essawy, *Ecole Nationale Supérieure de l'Aéronautique et de l'Espace*; and A. G. Delfour, *CERT* (AIAAJ 18, 6, p. 665) Article

**J80-122 Measurements and Model Validation for Composite Propellants Burning under Cross Flow of Gases.** Mohan K. Razdan and Kenneth K. Kuo, *The Pennsylvania State University* (AIAAJ 18, 6, p. 669) Article based on AIAA Paper 79-1172

**J80-123 Nonlinear Vibration Phenomena in Films of Solar Arrays.** Michail A. Zak, *Jet Propulsion Laboratory* (AIAAJ 18, 6, p. 678) Article based on AIAA Paper 79-0834 CP794

**J80-124 Analytical Model Improvement Using Modal Test Results.** Jay C. Chen and John A. Garba, *Jet Propulsion Laboratory* (AIAAJ 18, 6, p. 684) Article based on AIAA Paper 79-0831 CP794

**J80-125 Stability of Circular Cylindrical Shells under Transient Axial Impulsive Loading.** D. G. Zimcik, *Canadian FRAM Ltd.*; and R. C. Tennyson, *University of Toronto* (AIAAJ 18, 6, p. 691) Article based on AIAA Paper 79-0786 CP794

**J80-126 Integral Analysis for the Interaction of Radiation with Conduction in a Half Space.** L. T. Yeh, *Babcock & Wilcox Company*; and B. T. F. Chung, *The University of Akron* (AIAAJ 18, 6, p. 700) Article

**J80-127 Diffusion and Evaporation of a Liquid Droplet.** K. N. Shukla, *Vikram Sarabhai Space Centre* (AIAAJ 18, 6, p. 706) Article

**J80-128 Analysis of Radar Returns from a Rocket Plume.** James Stark Draper, *Aerodyne Research, Inc.*; and Robert F. Sperlein, *Air Force Office of Scientific Research, Aerospace Sciences Directorate* (AIAAJ 18, 6, p. 712) Technical Note

**J80-129 Three-Component Velocity Measurements in an Upper Surface Blowing Configuration.** G. D. Catalano, *Air Force Flight Dynamics Laboratory*; J. B. Morton and R. R. Humphris, *University of Virginia* (AIAAJ 18, 6, p. 714) Technical Note based on AIAA Paper 79-1858

**J80-130 Vortex Shedding from Square Plates Perpendicular to a Ground Plane.** James H. Strickland, Rosemary R. Matty and Gregory H. Barton, *Texas Tech University* (AIAAJ 18, 6, p. 715) Technical Note

**J80-131 Transonic Small Disturbance Theory with Strong Shock Waves.** David Nixon, *Nielsen Engineering & Research, Inc.* (AIAAJ 18, 6, p. 717) Technical Note

**J80-132 Flowfield Calculations Past an Entry Probe with Ablated Nose Shape.** Ajay Kumar, *Old Dominion University*; R. A. Graves Jr. and K. J. Weilmuenster, *NASA Langley Research Center* (AIAAJ 18, 6, p. 719) Technical Note

**J80-133 Shear Modulus of New Sandwich Cores Made of Superplastic Sheet.** C. E. S. Ueng, and E. E. Underwood, *Georgia Institute of Technology*; and T. L. Liu, *Evans Products Co.* (AIAAJ 18, 6, p. 721) Technical Note based on AIAA Paper 79-0754 CP794

**J80-134 Radiative Transfer of Energy in a Cylindrical Enclosure with Heat Generation.** James Higenyi and Yildiz Bayazitoglu, *Rice University* (AIAAJ 18, 6, p. 723) Technical Note

**J80-135 On the Determination of the Polytropic Specific Heat.** Leo Rute, *Merrimack College* (AIAAJ 18, 6, p. 726) Technical Note

**J80-136 Solar Flux Incident on an Orbiting Surface after Reflection from a Planet.** Michael F. Modest, *Rensselaer Polytechnic Institute* (AIAAJ 18, 6, p. 727) Technical Note

**J80-137 Emittance of a Finite Scattering Medium with Refractive Index Greater Than Unity.** A. L. Crosbie, *University of Missouri-Rolla* (AIAAJ 18, 6, p. 730) Technical Note

**J80-142 Turbulent Vortices in Stratified Fluids.** A. M. Hecht, A. J. Bilanin, J. E. Hirsh and R. S. Snedeker, *Aeronautical Research Associates of Princeton, Inc.* (AIAAJ 18, 7, p. 738) Article based on AIAA Paper 79-0151

**J80-143 Laminar Separation, Transition, and Turbulent Reattachment near the Leading Edge of Airfoils.** A. V. Arena and T. J. Mueller, *University of Notre Dame* (AIAAJ 18, 7, p. 747) Article based on AIAA Paper 79-0004

**J80-144 Time-Dependent Method to Solve the Inverse Problem for Internal Flows.** L. Zannetti, *Politecnico di Torino* (AIAAJ 18, 7, p. 754) Article based on AIAA Paper 79-0013

**J80-145 Direct Correlation of Noise and Flow of a Jet Using Laser Doppler.** W. G. Richarz, *University of Toronto* (AIAAJ 18, 7, p. 759) Article based on AIAA Paper 79-0571

**J80-146 Bandwidth Attenuation with a Folded Cavity Liner in a Circular Flow Duct.** D. T. Sawdy and R. J. Beckemeyer, *Boeing Military Airplane Company* (AIAAJ 18, 7, p. 766) Article based on AIAA Paper 79-0598

**J80-147 Wave Phenomena in Liquid Jet Breakup in a Supersonic Crossflow.** J. A. Schetz, E. A. Kush Jr. and P. B. Joshi, *Virginia Polytechnic Institute and State University* (AIAAJ 18, 7, p. 774) Article

**J80-148 Investigation of Three-Dimensional Shock/Boundary-Layer Interactions at Swept Compression Corners.** Gary S. Settles, Jeffrey J. Perkins and Seymour M. Bogdonoff, *Princeton University* (AIAAJ 18, 7, p. 779) Article based on AIAA Paper 79-1498

**J80-149 Vector Processor Algorithms for Transonic Flow Calculations.** Jerry C. South Jr. and James D. Keller, *NASA Langley Research Center*; and Mohamed M. Hafez, *Flow Research Co.* (AIAAJ 18, 7, p. 786) Article based on AIAA Paper 79-1457 CP799

**J80-150 Instability Process in Low Reynolds Number Supersonic Jets.** Gerald L. Morrison and Dennis K. McLaughlin, *Oklahoma State University* (AIAAJ 18, 7, p. 793) Article

**J80-151 Wind Tunnel Study of Acoustical Disturbance Effect on Controlled Laminar Flow.** R. A. Mangiarotti and A. J. Bohn, *Boeing Commercial Airplane Company* (AIAAJ 18, 7, p. 801) Article based on AIAA Paper 79-0629

**J80-152 Electron Collection by Blunt Probes in the Lower Ionosphere.** T. M. York, C.-I. Wu and T. W.-k. Lai, *The Pennsylvania State University* (AIAAJ 18, 7, p. 808) Article based on AIAA Paper 79-1541

**J80-153 Experimental Study of the Flowfield of a Two-Dimensional Premixed Turbulent Flame.** A. R. Ganji and R. F. Sawyer, *University of California* (AIAAJ 18, 7, p. 817) Article based on AIAA Paper 79-0017

**J80-154 Ignition of Solid Propellant Crack Tip under Rapid Pressurization.** Mridul Kumar and Kenneth K. Kuo, *The Pennsylvania State University* (AIAAJ 18, 7, p. 825) Article based on AIAA Paper 79-1175

**J80-155 Dynamics of Submerged Cylindrical Shells with Eccentric Stiffening.** Kerry Kier-Ten Chu, Michael Pappas and Harry Herman, *New Jersey Institute of Technology* (AIAAJ 18, 7, p. 834) Article

**J80-156 Comparison of Methods for the Calculation of Rocket Nozzle Wall Temperatures.** H. F. R. Schöyer, *Delft University of Technology* (AIAAJ 18, 7, p. 841) Synoptic based on AIAA Paper 78-1044

**J80-157 Measurement of Shock Waves around a Delta-Wing Semicone.** Takeyoshi Kimura and Masatomi Nishio, *Kobe University* (AIAAJ 18, 7, p. 843) Technical Note

**J80-158 Analysis of the Strong Interaction Problem with Slip and Temperature-Jump Effects.** R. N. Gupta and S. Menon, *Indian Institute of Technology*; and C. M. Rodkiewicz, *University of Alberta* (AIAAJ 18, 7, p. 844) Technical Note

**J80-159 Boundary Layer of Density-Stratified Fluids with a Suspension of Particles.** L. M. Srivastava, V. P. Srivastava and R. P. Agarwal, *Motilal Nehru Regional Engineering College* (AIAAJ 18, 7, p. 846) Technical Note

**J80-160 Aerodynamic Coefficients in Generalized Unsteady Thin Airfoil Theory.** M. H. Williams, *Princeton University* (AIAAJ 18, 7, p. 850) Technical Note

**J80-161 Separation Pressure of a Turbulent Boundary Layer in Transonic Interactions.** A. G. Panaras, *Von Kármán Institute for Fluid Dynamics* (AIAAJ 18, 7, p. 852) Technical Note

**J80-162 Propagation of Weak MHD Waves in Steady Hypersonic Flows with Radiation.** Rishi Ram and Bishun Deo Pandey, *Banaras Hindu University* (AIAAJ 18, 7, p. 855) Technical Note

**J80-163 Single Pulse Laser Irradiation of Fiberglass.** Peter K. Wu and Robert G. Root, *Physical Sciences Inc.* (AIAAJ 18, 7, p. 857) Technical Note

**J80-164 Proportional Optimal Orthogonalization of Measured Modes.** Menahem Baruch, *Technion-Israel Institute of Technology* (AIAAJ 18, 7, p. 859) Technical Note

**J80-165 Creep Linearization of Nonaxisymmetrically Heated Cylinders.** M. R. Eslami, *Tehran Polytechnic* (AIAAJ 18, 7, p. 862) Technical Note

**J80-166 Computational Simulation of Turbulent Vortex Merger and Decay.** Pradeep Raj, *Lockheed-California Company*; and J. D. Iverson, *Iowa State University* (AIAAJ 18, 8, p. 865) Synoptic based on AIAA Paper 79-0278

**J80-167 Approximate Analysis of Axisymmetric Supersonic Base Flows with Injection.** J. A. Schetz, F. S. Billig and S. Favin, *Applied Physics Laboratory, John Hopkins University* (AIAAJ 18, 8, p. 867) Synoptic

**J80-168 Computation of a Supersonic Flow Past an Axisymmetric Nozzle Boattail with Jet Exhaust.** Ameer G. Mikhail, *University of Dayton*; Wilber L. Hankey and Joseph S. Shang, *Air Force Flight Dynamics Laboratory* (AIAAJ 18, 8, p. 869) Article based on AIAA Paper 78-993

**J80-169 Supersonic Base Flow Problem in Presence of an Exhaust Jet.** Bernhard Wagner and Robert A. White, *Dornier GmbH Friedrichshafen* (AIAAJ 18, 8, p. 876) Article based on AIAA Paper 79-0133

**J80-170 Pseudo-Direct Solution to the Boundary-Layer Equations for Separated Flow.** Rimon Arieli and John D. Murphy, *NASA Ames Research Center* (AIAAJ 18, 8, p. 883) Article based on AIAA Paper 79-0139

**J80-171 Analyses of Pressure Oscillations in an Open Cavity.** W. L. Hankey and J. S. Shang, *Air Force Flight Dynamics Laboratory* (AIAAJ 18, 8, p. 892) Article based on AIAA Paper 79-0136

**J80-172 Effects of Inflow Distortion Profiles on Fan Tone Noise.** Hiroshi Kobayashi and John F. Groeneweg, *NASA Lewis Research Center* (AIAAJ 18, 8, p. 899) Article based on AIAA Paper 79-0577

**J80-173 Experimental Investigations on Effectiveness, Heat Transfer Coefficient, and Turbulence of Film Cooling.** Shao-Yen Ko and Deng-Ying Liu, *Chinese Academy of Sciences* (AIAAJ 18, 8, p. 907) Article based on AIAA Paper 79-7047

**J80-174 Measurements and Axisymmetric Model of Spatial Correlations in Turbulent Pipe Flow.** Y. A. Hassan, B. G. Jones and R. J. Adrian, *University of Illinois at Urbana-Champaign* (AIAAJ 18, 8, p. 914) Article based on AIAA Paper 79-1562

**J80-175 Numerical Solution of Supersonic Laminar Flow over an Inclined Body of Revolution.** C. M. Hung, *NASA Ames Research Center* (AIAAJ 18, 8, p. 921) Article based on AIAA Paper 79-1547

**J80-176 Navier-Stokes Solutions for Spin-Up in a Filled Cylinder.** Clarence W. Kitchens Jr., *U.S. Army Armament Research and Development Command* (AIAAJ 18, 8, p. 929) Article based on AIAA Paper 79-1454 CP799

**J80-177 Karman Vortex Shedding and the Effect of Body Motion.** L. E. Ericsson, *Lockheed Missiles & Space Company, Inc.* (AIAAJ 18, 8, p. 935) Article based on AIAA Paper 79-1531

**J80-178 Development and Structure of a Rectangular Jet in a Multiple Jet Configuration.** A. Krothapalli, *University of Oklahoma*; D. Baganoff and K. Karamcheti, *Stanford University* (AIAAJ 18, 8, p. 945) Article based on AIAA Paper 79-1548

**J80-179 Reformulation of Possio's Kernel with Application to Unsteady Wind Tunnel Interference.** Joseph A. Fromme and Michael A. Golberg, *University of Nevada* (AIAAJ 18, 8, p. 951) Article

**J80-180 Chain Reaction cw HF Laser with Stationary Shock Initiation.** James P. Moran, Alan C. Stanton and R. Bruce Doak, *Aerodyne Research Inc.* (AIAAJ 18, 8, p. 958) Article

**J80-181 Thermal Decomposition and Combustion Studies on Potassium Perchlorate/Polystyrene Propellant Systems.** K. Kishore, V.R. Pai Verneker and M. R. Sunitha, *Indian Institute of Science* (AIAAJ 18, 8, p. 966) Synoptic

**J80-182 Analytical Model of High-Pressure Burning Rates in a Transient Environment.** Norman S. Cohen and Leon D. Strand, *Jet Propulsion Laboratory* (AIAAJ 18, 8, p. 968) Article based on AIAA Paper 78-982

**J80-183 Transonic Axial Compressor using Laser Anemometry and Unsteady Pressure Measurements.** R.J. Dunker and H. G. Hungenberg, *Propulsion Institute, DFVLR, Cologne* (AIAAJ 18, 8, p. 973) Article based on AIAA Paper 79-7034

**J80-184 Model for Double-Base Propellant Combustion.** M. W. Beckstead, *Brigham Young University* (AIAAJ 18, 8, p. 980) Article

**J80-185 Elastic Constants for Superplastically Formed/Diffusion-Bonded Sandwich Structures.** William L. Ko, *NASA Dryden Flight Research Center* (AIAAJ 18, 8, p. 986) Synoptic based on AIAA Paper 79-0756 CP794

**J80-186 Generalized Modal Shock Spectra Method for Spacecraft Loads Analysis.** M. Trubert and M. Salama, *California Institute of Technology* (AIAAJ 18, 8, p. 988) Article based on AIAA Paper 79-0745 CP794

**J80-187 Modeling Nonlinear Deformation of Carbon-Carbon Composite Materials.** Robert M. Jones, *Southern Methodist University* (AIAAJ 18, 8, p. 995) Article based on AIAA Paper 79-0774 CP794

**J80-188 Plasma Quench Investigations: Tungsten-Oxide Quenchants.** J. M. Madson, *McDonnell Douglas Corporation* (AIAAJ 18, 8, p. 1002) Synoptic based on AIAA Paper 79-0253

**J80-189 Large Incidence Hypersonic Similitude and Oscillating Nonplanar Wedges.** Kunal Ghosh and Binoy Krishna Mistry, *Indian Institute of Technology* (AIAAJ 18, 8, p. 1004) Technical Note

**J80-190 Flowfield Model for a Rectangular Planform Wing beyond Stall.** Allen E. Winkelmann and Jewel B. Barlow, *University of Maryland* (AIAAJ 18, 8, p. 1006) Technical Note

**J80-191 Improved Version of LTRAN2 for Unsteady Transonic Flow Computations.** R. Houwink and J. van der Vooren, *National Aerospace Laboratory NLR* (AIAAJ 18, 8, p. 1008) Technical Note based on AIAA Paper 79-1553

**J80-192 Review of the Influence of Cooled Walls on Boundary-Layer Transition.** J. Leith Potter, *Sverdrup/ARO, Inc.* (AIAAJ 18, 8, p. 1010) Technical Note

**J80-193 Indicial Approach to Harmonic Perturbations in Transonic Flow.** D. E. Davies and Deborah J. Salmond, *Royal Aircraft Establishment* (AIAAJ 18, 8, p. 1012) Technical Note

**J80-194 Asymptotic Features of Shock-Wave Boundary-Layer Interaction.** M. Y. Hussaini, B. S. Baldwin and R. W. McCormack, *NASA Ames Research Center* (AIAAJ 18, 8, p. 1014) Technical Note

**J80-195 Mach and Reynolds Number Effects on a Shock-Wave/Boundary-Layer Interaction.** G. G. Mateer and J. R. Viegas, *NASA Ames Research Center* (AIAAJ 18, 8, p. 1016) Technical Note based on AIAA Paper 79-1502

**J80-196 Downwash Impingement.** B. N. Pamadi, *Indian Institute of Technology* (AIAAJ 18, 8, p. 1018) Technical Note

**J80-197 Optimal Design of Ring Stiffened Cylindrical Shells Using Multiple Stiffener Sizes.** Michael Pappas and Jacob Moradi, *New Jersey Institute of Technology* (AIAAJ 18, 8, p. 1020) Technical Note

**J80-199 Effect of Specific Heat Ratio on Two-Dimensional Transonic Aerodynamics.** Kemal Tuzla, David A. Russell and John C. Wai, *University of Washington* (AIAAJ 18, 9, p. 1025) Synoptic based on AIAA Paper 76-1796

**J80-200 Determination of Forces on Arbitrary Concave Bodies in High-Speed Rarefied Gases.** C. R. Wimberly, *Montana State University* (AIAAJ 18, 9, p. 1027) Synoptic

**J80-201 Stability of the Boundary Layer on a Swept Wing with Wall Cooling.** Spyridon G. Lekoudis, *Lockheed-Georgia Company* (AIAAJ 18, 9, p. 1029) Article based on AIAA Paper 79-1495

**J80-202 Analytical Solution of Double-Mach Reflection.** G. Ben-Dor, *Ben-Gurion University of the Negev* (AIAAJ 18, 9, p. 1036) Article

**J80-203 Turbulent Wake of a Thin, Flat Plate.** Irwin E. Alber, *Arete Associates* (AIAAJ 18, 9, p. 1044) Article based on AIAA Paper 79-1545

**J80-204 Characteristics of a Mixing Layer of a Two-Dimensional Turbulent Jet.** S. Rajagopalan and R. A. Antonia, *The University of Newcastle* (AIAAJ 18, 9, p. 1052) Article

**J80-205 Trailing-Edge Flows at High Reynolds Number.** P. R. Viswanath, J. W. Cleary, H. L. Seegmiller and C. C. Horstman, *NASA Ames Research Center* (AIAAJ 18, 9, p. 1059) Article based on AIAA Paper 79-1503

**J80-206 Study of Viscous Crossflow Effects on Circular Cylinders at High Reynolds Numbers.** W. D. James, *Iowa State University*; S. W. Paris, *Boeing Aerospace Company*; and G. N. Malcolm, *NASA Ames Research Center* (AIAAJ 18, 9, p. 1066) Article based on AIAA Paper 79-1477

**J80-207 Performance of a Vectorized Three-Dimensional Navier-Stokes Code on the CRAY-1 Computer.** J. S. Shang, W. L. Hankey, and M. C. Wirth, *Air Force Wright Aeronautical Laboratories*; and P. G. Buning, *University of Michigan*

(AIAAJ 18, 9, p. 1073) Article based on AIAA Paper 79-1448 CP799

**J80-208 Technique for Developing Design Tools from the Analysis Methods of Computational Aerodynamics.** Warren H. Davis Jr., *Grumman Aerospace Corporation* (AIAAJ 18, 9, p. 1080) Article based on AIAA Paper 79-1529

**J80-209 Numerical Simulation of Multistream Nozzle Flows.** K. M. Peery and C. K. Forester, *Boeing Aerospace Company* (AIAAJ 18, 9, p. 1088) Article based on AIAA Paper 79-1549

**J80-210 Study of the Insulating Wall Boundary Layer in a Faraday MHD Generator.** Roy R. Rankin, Sidney A. Self and Robert H. Eustis, *Stanford University* (AIAAJ 18, 9, p. 1094) Article

**J80-211 Ignition of Liquid Fuel Jets in a Supersonic Air Stream.** J. A. Schetz, S. C. Cannon and S. Baranovsky, *Virginia Polytechnic Institute and State University* (AIAAJ 18, 9, p. 1101) Synoptic based on AIAA Paper 79-1238

**J80-212 Evolution of a Detonation Wave in a Cloud of Fuel Droplets: Part I. Influence of Igniting Explosion.** Shmuel Eidelman and Alexander Burcat, *Technion—Israel Institute of Technology* (AIAAJ 18, 9, p. 1103) Article

**J80-213 Elastic-Plastic Analysis of Fatigue Crack Closure in Modes I and II.** M. Nakagaki and S. N. Atluri, *Georgia Institute of Technology* (AIAAJ 18, 9, p. 1110) Article based on AIAA Paper 79-0758 CP794

**J80-214 Coupled Rotor/Tower Aeroelastic Analysis of Large Horizontal Axis Wind Turbines.** William Warmbrodt, *NASA Ames Research Center*; and Peretz Friedmann, *University of California* (AIAAJ 18, 9, p. 1118) Article based on AIAA Paper 79-0732 CP794

**J80-215 Assumed Stress Finite Element Analysis of Through-Cracks in Angle-Ply Laminates.** T. Nishioka and S. N. Atluri, *Georgia Institute of Technology* (AIAAJ 18, 9, p. 1125) Article based on AIAA Paper 79-0801 CP794

**J80-216 Saturation Effects on Stagnation Radiative Heating for the Jupiter Probe.** H. F. Nelson, *University of Missouri-Rolla* (AIAAJ 18, 9, p. 1133) Article

**J80-217 Aerothermodynamic Aspects of an Axisymmetric Resonance Tube.** C. E. G. Przirembel, *Rutgers University* (AIAAJ 18, 9, p. 1141) Technical Note based on AIAA Paper 78-859

**J80-218 Steady Oblique Shock-Wave Reflections in Perfect and Imperfect Monatomic and Diatomic Gases.** G. Ben-Dor, *Ben-Gurion University of the Negev* (AIAAJ 18, 9, p. 1143) Technical Note

**J80-219 Response of Duffing Oscillator to One Half-Cycle Sine Pulse.** H. R. Srirangarajan, *Aeronautical Development Establishment* (AIAAJ 18, 9, p. 1145) Technical Note

**J80-220 Low-Frequency and Small Perturbation Equation for Transonic Flow Past Wings.** S. K. Chakrabartty and N. R. Subramanian, *National Aeronautical Laboratory* (AIAAJ 18, 9, p. 1147) Technical Note

**J80-221 Similarity Rule for Sidewall Boundary-Layer Effect in Two-Dimensional Wind Tunnels.** Richard W. Barnwell, *NASA Langley Research Center* (AIAAJ 18, 9, p. 1149) Technical Note based on AIAA Paper 79-0108

**J80-222 Improved Orthogonality Check for Measured Modes.** Alex Berman, *Kaman Aerospace Corporation* (AIAAJ 18, 9, p. 1151) Technical Note

**J80-223 Shock-Free Wing Design.** K-Y. Fung, H. Sobieczky and R. Seebass, *University of Arizona* (AIAAJ 18, 10, p. 1153) Article based on AIAA Paper 79-1557

**J80-224 Transonic Flutter Analysis of a Rectangular Wing with Conventional Airfoil Sections.** F. E. Eastep and J. J. Olsen, *Air Force Flight Dynamics Laboratory* (AIAAJ 18, 10, p. 1159) Article based on AIAA Paper 79-1632 CP7911

**J80-225 Multilevel Adaptive Computations in Fluid Dynamics.** Achi Brandt, *The Weizmann Institute of Science* (AIAAJ 18, 10, p. 1165) Survey Paper based on AIAA Paper 79-1455 CP799

**J80-226 Measurements of Unsteady Vortex Flowfields.** F. K. Owen, *Palo Alto, Calif.*; and D. A. Johnson, *NASA Ames Research Center* (AIAAJ 18, 10, p. 1173) Article based on AIAA Paper 78-18

**J80-227 Harmonic Linearization Method for High-Intensity Sound in Two-Dimensional Lined Ducts.** Morgan S. Tsai, *Boeing Commercial Airplane Company* (AIAAJ 18, 10, p. 1180) Article based on AIAA Paper 79-0621

**J80-228 Adverse Pressure Gradient Effects on Supersonic Boundary-Layer Turbulence.** A. J. Laderman, *Ford Aerospace & Communications Corporation* (AIAAJ 18, 10, p. 1186) Article based on AIAA Paper 79-1563

**J80-229 Prediction of Two- and Three-Dimensional Asymmetrical Turbulent Wakes, Including Curvature and Rotation Effects.** C. Hah and B. Lakshminarayana, *The Pennsylvania State University* (AIAAJ 18, 10, p. 1196) Article based on AIAA Paper 79-1561

**J80-230 Adaptive Grid Method for Problems in Fluid Mechanics and Heat Transfer.** H. A. Dwyer, *University of California*; R. J. Kee and B. R. Sanders, *Sandia Laboratories* (AIAAJ 18, 10, p. 1205) Article based on AIAA Paper 79-1464 CP799

**J80-231 Helicoidal Surface Theory for Harmonic Noise of Propellers in the Far Field.** Donald B. Hanson, *United Technologies Corporation* (AIAAJ 18, 10, p. 1213) Article based on AIAA Paper 79-0609

**J80-232 Kinetics of a CO<sub>2</sub> Nuclear Pumped Laser.** H. A. Hassan, *North Carolina State University* (AIAAJ 18, 10, p. 1221) Synoptic based on AIAA Paper 79-1566

**J80-233 Modeling of a cw Chemical Laser with Annular Unstable Resonator.** Tien Tsai Yang, *Rockwell International* (AIAAJ 18, 10, p. 1223) Article based on AIAA Paper 79-1490

**J80-234 Evolution of a Detonation Wave in a Cloud of Fuel Droplets: Part II. Influence of Fuel Droplets.** Alexander Burcat and Shmuel Eidelman, *Technion—Israel Institute of Technology* (AIAAJ 18, 10, p. 1233) Article

**J80-235 Stresses in Double-Lap Joints Bonded with a Viscoelastic Adhesive: Part I. Theory and Experimental Corroboration.** Joyanto K. Sen, *Hindustan Aeronautics Ltd.*; and Robert M. Jones, *Southern Methodist University* (AIAAJ 18, 10, p. 1237) Article

**J80-236 Flutter Analysis of Missile Control Surfaces Containing Structural Nonlinearities.** Robert M. Laurensen and Robert M. Trn, *McDonnell Douglas Astronautics Company* (AIAAJ 18, 10, p. 1245) Article based on AIAA Paper 79-0796 CP794

**J80-237 Structural Synthesis by Combining Approximation Concepts and Dual Methods.** Lucien A. Schmit and Claude Fleury, *University of California* (AIAAJ 18, 10, p. 1252) Article based on AIAA Paper 79-0721 CP794

**J80-238 Heat Flow Through Conical Constrictions.** Chakravarti Varadachar Madhusudana, *The University of New South Wales* (AIAAJ 18, 10, p. 1261) Synoptic based on AIAA Paper 79-1071

**J80-239 High Mach Number Dynamic Stability of Pointed Cones at Small Angles of Attack.** M. Khalid and R. A. East, *University of Southampton* (AIAAJ 18, 10, p. 1263) Technical Note

**J80-240 Lifting and Nonlifting Kernel Functions for Cascade and Isolated Airfoils.** M.R. Chi, *Pratt & Whitney Aircraft* (AIAAJ 18, 10, p. 1265) Technical Note

**J80-241 Modeling the Plasma Near-Wakes.** V. C. Liu and S. J. Ying, *The University of Michigan* (AIAAJ 18, 10, p. 1268) Technical Note

**J80-242 Marker Particle Velocity Perturbations in Compressible Flows over a Wavy Wall.** G. D. Catalano, *Air Force Flight Dynamics Lab* (AIAAJ 18, 10, p. 1270) Technical Note

**J80-243 Sullivan's Two-Celled Vortex.** Fred W. Leslie and John T. Snow, *Purdue University* (AIAAJ 18, 10, p. 1272) Technical Note

**J80-244 Stiffness Matrix Correction from Incomplete Test Data.** Fu-Shang Wei, *Kaman Aerospace Corporation* (AIAAJ 18, 10, p. 1274) Technical Note

**J80-245 Influence of Nonlinear Adhesive Behavior on Analysis of Cracked Adhesively Bonded Structures.** M. M. Ratwani and H. P. Kan, *Northrop Corporation* (AIAAJ 18, 10, p. 1275) Technical Note

**J80-250 Progress in Finite-Volume Calculations for Wing-Fuselage Combinations.** D. A. Caughey, *Cornell University*; and Antony Jameson, *New York University* (AIAAJ 18, 11, p. 1281) Article based on AIAA Paper 79-1513

**J80-251 Symmetric Body Vortex Wake Characteristics in Supersonic Flow.** William L. Oberkampf and Timothy J. Bartel, *The University of Texas at Austin* (AIAAJ 18, 11, p. 1289) Article based on AIAA Paper 78-1337 CP786

**J80-252 Interaction of Weak Shock Waves with Screens and Honeycombs.** Kwok-On Tong, Charles J. Knight and B. N. Srivastava, *Avco Everett Research Laboratory, Inc.* (AIAAJ 18, 11, p. 1298) Article based on AIAA Paper 79-0210

**J80-253 Transonic Shock-Wave/Boundary-Layer Interactions on an Oscillating Airfoil.** Sanford S. Davis and Gerald N. Malcolm, *NASA Ames Research Center* (AIAAJ 18, 11, p. 1306) Article based on AIAA Paper 79-0769 CP794

**J80-254 Influence of Propeller Design Parameters on Far-Field harmonic Noise in Forward Flight.** Donald B. Hanson, *Hamilton Standard Division, United Technologies Corporation* (AIAAJ 18, 11, p. 1313) Article based on AIAA Paper 79-0609

**J80-255 Three-Layer Interactive Method for Computing Supersonic Laminar Separated Flows.** Julius Brandeis and Josef Rom, *Technion-Israel Institute of Technology* (AIAAJ 18, 11, p. 1320) Article

**J80-256 Two-Phase Mach Number Description for Equilibrium Duct Flow of Nitrogen.** J. W. Bursik, *Rensselaer Polytechnic Institute*; Hall R. M. and J. B. Adcock, *NASA Langley Research Center* (AIAAJ 18, 11, p. 1328) Article based on AIAA Paper 79-1051

**J80-257 Decay of Transverse Acoustic Waves in a Pulsed Gas Laser.** Vijay A. Kulkarny, *TRW DSSG* (AIAAJ 18, 11, p. 1336) Article

**J80-258 Improved Sensing Element for Skin-Friction Balance Measurements.** Jerry M. Allen, *NASA Langley Research Center* (AIAAJ 18, 11, p. 1342) Article based on AIAA Paper 80-0049

**J80-259 Aerothermochemical Analysis of Erosive Burning in a Laboratory Solid-Rocket Motor.** Robert A. Beddini, *Aeronautical Research Associates of Princeton, Inc.* (AIAAJ 18, 11, p. 1346) Article based on AIAA Paper 78-977

**J80-260 Turbulence Characteristics in the Near Wake of a Compressor Rotor Blade.** B. Lakshminarayana and B. Reynolds, *The Pennsylvania State University* (AIAAJ 18, 11, p. 1354) Article based on AIAA Paper 79-0280

**J80-261 Convective Ignition of Propellant Cylinders in a Developing Flowfield.** Avi Birk and Leonard H. Caverny, *Princeton University* (AIAAJ 18, 11, p. 1363) Article

**J80-262 Static Strength Prediction of Bolted Joint in Composite Material.** B. L. Agarwal, *Northrop Corporation* (AIAAJ 18, 11, p. 1371) Article based on AIAA Paper 79-0798 CP794

**J80-263 Stresses in Double-Lap Joints Bonded with a Viscoelastic Adhesive: Part II. Parametric Study and Joint Design.** Joyanto K. Sen, *Hindustan Aeronautics Limited*; and Robert M. Jones, *Southern Methodist University* (AIAAJ 18, 11, p. 1376) Article

**J80-264 Slag and Other Liquid Behavior on Vertical Surface at Near-Freezing Temperature.** Kwan H. Im, *Argonne National Laboratory*; and Paul M. Chung, *University of Illinois at Chicago Circle* (AIAAJ 18, 11, p. 1383) Article

**J80-265 Propagation of Supersonic Fan Noise in a Nonuniform Medium.** Morgan S. Tsai, *The Boeing Commercial Airplane Company* (AIAAJ 18, 11, p. 1390) Technical Note based on AIAA Paper 79-0639

**J80-266 Direct and Inverse Calculation of the Laminar Boundary-Layer Solution.** Pascal L. Ardouneau and Thierry Alziary de Roquefort, *Centre d'Etudes Aerodynamiques et Thermiques* (AIAAJ 18, 11, p. 1392) Technical Note

**J80-267 Turbulent Boundary-Layer Calculations in Adverse Pressure Gradient Flows.** C. E. Jobe and W. L. Hankey, *Air Force Flight Dynamics Laboratory* (AIAAJ 18, 11, p. 1394) Technical Note based on AIAA Paper 80-0136

**J80-268 Limiting Particle Streamline of Gas Particle Mixtures in Axially Symmetric Nozzles.** R. Ishii, *Kyoto University*; and K. Kawasaki, *Nissan Motor Company, Limited* (AIAAJ 18, 11, p. 1397) Technical Note

**J80-269 Flow near the Intersection of a Wall and Multiple Dividing Streamlines.** Arthur Rubel, *Grumman Aerospace Corporation* (AIAAJ 18, 11, p. 1400) Technical Note

**J80-270 Approximate Calculation of Vortex Trajectories of Slender Bodies at Incidence.** D. Weihs, *Technion-Israel Institute of Technology* (AIAAJ 18, 11, p. 1402) Technical Note

**J80-271 Action of Transition Metal Oxides on Composite Solid Propellants.** K. Kishore, V. R. Pai Verneker and M. R. Sunitha, *Indian Institute of Science* (AIAAJ 18, 11, p. 1404) Technical Note

**J80-276 Navier-Stokes Solution of the Turbulent Flowfield about an Isolated Airfoil.** S. J. Shamroth and H. J. Gibeling, *Scientific Research Associates, Inc.* (AIAAJ 18, 12, p. 1409) Synoptic based on AIAA Paper 79-1543

**J80-277 Numerical Solution of the Azimuthal-Invariant Thin-Layer Navier-Stokes Equations.** C. J. Nietubicz, *U.S. Army Ballistic Research Laboratory*; T. H. Pulliam, *NASA Ames Research Center*; and J. L. Steger, *Flow Simulations, Inc.* (AIAAJ 18, 12, p. 1411) Synoptic based on AIAA Paper 79-0010

**J80-278 Flow in Streamwise Corners of Arbitrary Angle.** W. H. Barclay and A. H. Ridha, *University College* (AIAAJ 18, 12, p. 1413) Article

**J80-279 Flow Computations in Inlets at Incidence Using a Shock Fitting Bicharacteristic Method.** Joseph Vadyak, and Joe D. Hoffman, *Purdue University*; and Allan R. Bishop, *NASA Lewis Research Center* (AIAAJ 18, 12, p. 1495) Article based on AIAA Paper 79-0379

**J80-280 Numerical Simulation of Steady Supersonic Viscous Flow.** Lewis B. Schiff and Joseph L. Steger, *NASA Ames Research Center* (AIAAJ 18, 12, p. 1421) Article based on AIAA Paper 79-0130

**J80-281 Fast, Conservative Algorithm for Solving the Transonic Full-Potential Equation.** Terry L. Holst, *NASA Ames Research Center* (AIAAJ 18, 12, p. 1431) Article based on AIAA Paper 79-1456 CP799

**J80-282 Numerical Simulation of Near Wakes Utilizing a Relaxation Turbulence Model.** J. D. Waskiewicz, J. S. Shang and W. L. Hankey, *Air Force Flight Dynamics Laboratory* (AIAAJ 18, 12, p. 1440) Article based on AIAA Paper 79-0148

**J80-283 Acoustic Resonances and Sound Scattering by a Shear Layer.** S. P. Koutsoyannis and K. Karamcheti, *Stanford University*; and D. C. Galant, *NASA Ames Research Center* (AIAAJ 18, 12, p. 1446) Article based on AIAA Paper 79-0627

**J80-285 One-and Two-Phase Nozzle Flows.** I. Shih Chang, *The Aerospace Corporation* (AIAAJ 18, 12, p. 1455) Article based on AIAA Paper 80-0272

**J80-286 The Turbulence Structure in the Axisymmetric Free Mixing Layer.** A. K. M. F. Hussain and Z. D. Husain, *University of Houston* (AIAAJ 18, 12, p. 1462) Article

**J80-287 Time-Dependent Difference Theory for Noise Propagation in a Two-Dimensional Duct.** Kenneth J. Baumeister, *NASA Lewis Research Center* (AIAAJ 18, 12, p. 1470) Article based on AIAA Paper 80-0098

**J80-288 Investigation of a Three-Dimensional Shock Wave Separated Turbulent Boundary Layer.** M. I. Kussoy, J. R. Viegas and C. C. Horstman, *NASA Ames Research Center* (AIAAJ 18, 12, p. 1477) Article based on AIAA Paper 80-0002

**J80-289 Comparison of Methods for Prediction of Transition by Stability Analysis.** Mujeeb R. Malik, *Systems and Applied Sciences Corp.*; and Steven A. Orszag, *Massachusetts Institute of Technology* (AIAAJ 18, 12, p. 1485) Article based on AIAA Paper 80-1375

**J80-290 Analysis of the UF<sub>6</sub>-Xe Direct Nuclear-Pumped Laser.** H. A. Hassan, *North Carolina State University* (AIAAJ 18, 12, p. 1490) Article based on AIAA Paper 80-0095

**J80-291 Calculation of the Flow Properties of a Confined Kerosene-Spray Flame.** Y. El Bahawy and J. H. Whitelaw, *Imperial College of Science and Technology* (AIAAJ 18, 12, p. 1503) Article based on AIAA Paper 79-7020

**J80-293 Differential and Difference Sensitivities of Natural Frequencies and Mode Shapes of Mechanical Structures.** Patrick Vanhonacker, *University of Leuven* (AIAAJ 18, 12, p. 1511) Article

**J80-294 Discrete-Continuous Variable Structural Synthesis using Dual Methods.** Lucien A. Schmit and Claude Fleury, *University of California* (AIAAJ 18, 12, p. 1515) Article

**J80-295 Effect of Load Sequence on the Statistical Fatigue of Composites.** J. N. Yang and D. L. Jones, *The George Washington University* (AIAAJ 18, 12, p. 1525) Article based on AIAA Paper 79-0760 CP794

**J80-296 Further Observations on the Strained Coordinate Method for Transonic Flows.** David Nixon and Samuel C. McIntosh Jr., *Nielsen Engineering and Research, Inc.* (AIAAJ 18, 12, p. 1540) Technical Note

**J80-297 Instantaneous Velocity Measurements in a Periodically Pulsed Plane Turbulent Jet.** J. C. S. Lai and J. M. Simmons, *University of Queensland* (AIAAJ 18, 12, p. 1532) Technical Note

**J80-298 Numerical Solutions of Transonic Flows By Parametric Differentiation and Integral Equation Techniques.** Nithiam T. Sivaneri and Wesley L. Harris, *Massachusetts Institute of Technology* (AIAAJ 18, 12, p. 1534) Technical Note

**J80-299 Visualization of Flow Instabilities on a Rotating Disk.** Mark H. Clarkson, *University of Florida*; Stanley C. Chin, *Martin Marietta Aerospace*; and Phillip Shacter, *McDonnell Aircraft Company* (AIAAJ 18, 12, p. 1541) Technical Note based on AIAA Paper 80-0279

**J80-300 Separation of Laminar Boundary Layer Induced by Aerodynamic Interference.** Eugene E. Covert, *Massachusetts Institute of Technology* (AIAAJ 18, 12, p. 1537) Technical Note

**J80-301 Sound Radiation From Ducts: Comparison of Admittance Values.** W. L. Meyer, W. A. Bell and B. T. Zinn, *Georgia Institute of Technology* (AIAAJ 18, 12, p. 1538) Technical Note

**J80-302 Thin-Layer Approximation for Three-Dimensional Supersonic Corner Flows.** C. M. Hung and Seth S. Kurasaki, *NASA Ames Research Center* (AIAAJ 18, 12, p. 1544) Technical Note