

Chronological Index

C89-155 Canard-Wing Interaction in Unsteady Supersonic Flow. Valter J. E. Stark, *Saab Scania AB, Sweden* (26, 10, p. 951) Engineering Note
Reply (29, 4, p. 744)

C89-169 Transition Effects on Airfoil Dynamics and the Implications for Subscale Tests. L. E. Ericsson, *Lockheed Missiles & Space Company, Inc.* (26, 12, p. 1051) Article based on AIAA Paper 87-2353 CP875

Technical Comment by D. G. Mabey, *Royal Aerospace Establishment, England, UK* (29, 3, p. 519)

Reply (29, 3, p. 520)

C90-105 NASA Investigation of a Claimed 'Overlap' between Two Gust Response Analysis Methods. Boyd Perry III, *NASA Langley Research Center*; Anthony S. Pototzky and Jessica A. Woods, *Planning Research Corporation* (27, 7, p. 605) Article based on AIAA Paper 89-1376 CP891

Technical Comment by Bernard Etkin, *University of Toronto, Canada* (29, 4, p. 741)

Reply (29, 4, p. 743)

C90-108 Minimum Induced Drag for Wings with Spanwise Camber. Martin V. Lowson, *University of Bristol, England, UK* (27, 7, p. 627) Article

Errata (29, 5, p. 968)

C92-001 Compact Dynamometer System That Can Accurately Determine Propeller Performance. Kenneth M. Asson and Patrick F. Dunn, *University of Notre Dame* (29, 1, p. 8) Article

C92-002 On the Threshold—The Outlook for Supersonic and Hypersonic Aircraft. Roy V. Harris Jr., *NASA Langley Research Center* (29, 1, p. 10) Article based on AIAA Paper 89-2071

C92-003 Hot Gas Environment Around STOVL Aircraft in Ground Proximity—Part 2: Numerical Study. D. K. Tafti and S. P. Vanka, *University of Illinois, Urbana-Champaign* (29, 1, p. 20) Article based on AIAA Paper 90-2270

C92-004 Efficient Panel Method for Vortex Sheet Roll-Up. François Lamarre, *Princeton University*; and Ion Paraschivoiu, *Ecole Polytechnique de Montréal, Canada* (29, 1, p. 28) Article

C92-005 Agility as a Contributor to Design Balance. Andrew M. Skow, *Eidetics Aircraft, Inc.* (29, 1, p. 34) Article based on AIAA Paper 90-1305 CP904

C92-006 Investigation of the Diffuser Flow Quality in an Icing Research Wind Tunnel. Harold E. Addy Jr., *NASA Lewis Research Center*; and Theo G. Keith Jr., *University of Toledo* (29, 1, p. 47) Article based on AIAA Paper 89-0755/90-0488

C92-007 Prediction of Turbulent Flow Behavior over a Slotted Flap. Srinath S. Heragu, *Aeronautical Development Agency, India* (29, 1, p. 52) Article

C92-008 Forward-Look Wind-Shear Detection for Microburst Recovery. David A. Hinton, *NASA Langley Research Center* (29, 1, p. 63) Article based on AIAA Paper 89-3325 CP897

C92-009 Hot Gas Environment Around STOVL Aircraft in Ground Proximity—Part 1: Experimental Study. R. MacLean, J. Sullivan and S. N. B. Murthy, *Purdue University* (29, 1, p. 67) Article based on AIAA Paper 90-2269

C92-010 Navier-Stokes Calculations of Inboard Stall Delay Due to Rotation. J. C. Narramore, *Bell Helicopter Textron, Inc.*; and R. Vermeland, *CRAY Research, Inc.* (29, 1, p. 73) Article based on AIAA Paper 89-1814

C92-011 Expert System for Real-Time Aircraft Monitoring. Joey B. Flanders, *U.S. Air Force Flight Test Center, Edwards AFB*; Charles H. Jones, *Washington State University*; and Robin M. Madison, *U.S. Air Force Flight Test Center, Edwards AFB* (29, 1, p. 79) Article based on AIAA Paper 90-1311 CP904

C92-012 Rapid Prediction of High-Alpha Unsteady Aerodynamics of Slender-Wing Aircraft. L. E. Ericsson and H. H. C. King, *Lockheed Missiles & Space Company, Inc.* (29, 1, p. 85) Article based on AIAA Paper 90-3037 CP908

C92-013 Effects of Trailing-Edge Flap on Buffet Characteristics of a Supercritical Airfoil. B. H. K. Lee, *National Research Council, Canada* (29, 1, p. 93) Article

C92-014 Comparison of Two Navier-Stokes Codes for Attached Transonic Wing Flows. Daryl L. Bonhaus and Stephen F. Wornom, *NASA Langley Research Center* (29, 1, p. 101) Article

C92-015 Heat Transfer on Accreting Ice Surfaces. Keiko Yamaguchi and R. John Hansman Jr., *Massachusetts Institute of Technology* (29, 1, p. 108) Article based on AIAA Paper 90-0200

C92-016 Correction of Sideslip-Induced Static Pressure Errors in Flight-Test Measurements. Edwin K. Parks, *University of Arizona*; Ralph E. Bach Jr. and Duc Tran, *NASA Ames Research Center* (29, 1, p. 114) Article based on AIAA Paper 90-3082 CP908

C92-017 Suppression of the Wing-Body Junction Vortex by Body Surface Suction. D. B. Philips, J. M. Cimbala and A. L. Treaster, *Pennsylvania State University* (29, 1, p. 118) Article

C92-018 Approach to Side Force Alleviation Through Modification of the Pointed Forebody Geometry. V. J. Modi and A. C. Stewart, *University of British Columbia, Canada* (29, 1, p. 123) Article based on AIAA Paper 90-2834 CP906

C92-019 Separation Control Using Moving Surface Effects: A Numerical Simulation. A. A. Hassan, *McDonnell Douglas Helicopter Company*; and L. N. Sankar, *Georgia Institute of Technology* (29, 1, p. 131) Article based on AIAA Paper 89-0972

C92-020 Nonlinear Flutter of Two-Dimensional Simply Supported Symmetric Composite Laminated Plates. Le-Chung Shiau and Li-Teh Lu, *National Cheng Kung University, Taiwan, ROC* (29, 1, p. 140) Article

C92-021 Wind-Tunnel Studies of F/A-18 Tail Buffet. B. H. K. Lee and D. Brown, *National Research Council, Canada* (29, 1, p. 146) Article based on AIAA Paper 90-1432 CP905

C92-022 Transonic Aeroelasticity Analysis Using State-Space Unsteady Aerodynamic Modeling. G. L. Crouse Jr. and J. G. Leishman, *University of Maryland* (29, 1, p. 153) Article based on AIAA Paper 89-0022

C92-023 Twenty-Five Years of Aerodynamic Research with Infrared Imaging. Ehud Gartenberg and A. Sidney Roberts Jr., *Old Dominion University* (29, 2, p. 161) Article

C92-024 Preliminary Sizing Methodology for Hypersonic Vehicles. Armand J. Chaput, *General Dynamics Corporation* (29, 2, p. 172) Article based on AIAA Paper 87-2954

C92-025 Numerical Computation of Improved Transonic Potential Method. Zhu Zi-qianq and Bai Xue-Song, *Beijing University of Aeronautics and Astronautics, PRC* (29, 2, p. 180) Article

C92-026 Evaluation of a Navier-Stokes Prediction of a Jet in a Crossflow. Karlin R. Roth, *NASA Ames Research Center*; Richard L. Fearn and Siddharth S. Thakur, *University of Florida* (29, 2, p. 185) Article based on AIAA Paper 89-0448

C92-027 Interference Flows Past Cylinder-Fin-Sting-Cavity Assemblies. O. Baysal and K. Fouladi, *Old Dominion University*; R. W. Leung and J. S. Sheftic, *Lockheed Missiles and Space Company, Inc.* (29, 2, p. 194) Article based on AIAA Paper 90-3095 CP908

C92-028 Computational Study of Incipient Leading-Edge Separation on a Supersonic Delta Wing. S. Naomi McMillin, James L. Pittman and James L. Thomas, *NASA Langley Research Center* (29, 2, p. 203) Article based on AIAA Paper 90-3029 CP908

C92-029 Self-Compensating Carrier Aircraft Recovery System. Rolf Brodersen and Gregory Sauer, *Martin Marietta Corporation* (29, 2, p. 210) Article based on AIAA Paper 90-3273

C92-030 Navier-Stokes Study of Supersonic Cavity Flowfield with Passive Control. I. Kim and N. Chokani, *North Carolina State University* (29, 2, p. 217) Article based on AIAA Paper 90-3101 CP908

C92-031 Heat Transfer Effects on Aerodynamics and Implications for Wind-Tunnel Tests. D. G. Mabey, *Royal Aerospace Establishment, England, UK* (29, 2, p. 224) Article

C92-032 Experimental Study of a Low Reynolds Number Tandem Airfoil Configuration. Daniel F. Scharpf and Thomas J. Mueller, *University of Notre Dame* (29, 2, p. 231) Article based on AIAA Paper 90-3094 CP908

C92-033 Effect of Wind Shear on Airspeed During Airplane Landing Approach. Roland J. White, *Boeing Company* (29, 2, p. 237) Article based on AIAA Paper 90-2838 CP906

C92-034 Navier-Stokes Methods to Predict Circulation Control Airfoil Performance. S. L. Williams, *Aeronautical Systems Division, Wright-Patterson AFB*; and M. E. Franke, *U.S. Air Force Institute of Technology, Wright-Patterson AFB* (29, 2, p. 243) Article based on AIAA Paper 90-0574

C92-035 Ground-Testing Techniques for Tethered Systems. A. Cenko, *U.S. Naval Air Development Center*; G. Clessas, *U.S. Naval Air Systems Command*; and K. Phillips, *David Taylor Research Center* (29, 2, p. 250) Article based on AIAA Paper 90-1428 CP905

C92-036 Effects of Ambient Turbulence on the Decay of a Trailing Vortex Wake. H.-T. Liu, *QUEST Integrated, Inc.* (29, 2, p. 255) Article

C92-037 Controlled Opening Method for Clustered Parachutes. Calvin K. Lee and James E. Sadeck, *U.S. Army Natick Research, Development, and Engineering Center* (29, 2, p. 264) Article based on AIAA Paper 89-0892 CP893

C92-038 Low-Speed Flutter Characteristics of Some Simple Low-Aspect-Ratio Delta-Wing Models. Robert V. Doggett Jr., *NASA Langley Research Center*; and David L. Soistmann, *Planning Research Corporation* (29, 2, p. 273) Article based on AIAA Paper 89-1325 CP891

C92-039 Integrated Aeroelastic Control Optimization of Laminated Composite Lifting Surfaces. Theodore N. Dracopoulos and Hayrani Öz, *Ohio State University* (29, 2, p. 280) Article

C92-040 Use of Shear-Sensitive Liquid Crystals for Surface Flow Visualization. Stephen C. Smith, *NASA Ames Research Center* (29, 2, p. 289) Article based on AIAA Paper 90-1382 CP905

C92-041 Dynamics of an Optimized Rotor Blade at Off-Design Flight Conditions. Aditi Chattopadhyay, *Arizona State University*; and Henry Jones, *NASA Langley Research Center* (29, 2, p. 294) Engineering Note

C92-042 Subsonic and Transonic Low-Reynolds-Number Airfoils with Reduced Pitching Moments. J. Reuther and C. P. van Dam, *University of California, Davis*; and R. Hicks, *NASA Ames Research Center* (29, 3, p. 297) Article based on AIAA Paper 90-3213

C92-043 Analysis of Airship Lateral Maneuverability. B. L. Nagabhushan and Ramin P. K. Pasha, *Parks College of Saint Louis University* (29, 3, p. 299) Article based on AIAA Paper 91-1274 CP913

C92-044 Numerical Simulation of Leading-Edge Vortex Breakdown Using an Euler Code. P. J. O'Neil, R. M. Barnett and C. M. Louie, *McDonnell Aircraft Company, McDonnell Douglas Corporation* (29, 3, p. 301) Article based on AIAA Paper 89-2189 CP896

C92-045 Data Analysis for Unsteady Turbulence Measurements over Airfoils. Donald K. Johnson, Richard M. Howard and Paul N. Ilacqua, *Naval Postgraduate School* (29, 3, p. 308) Article

C92-046 Design and Development of a Compressible Dynamic Stall Facility. L. W. Carr, *U.S. Army AVSCOM and NASA Ames Research Center*; and M. S. Chandrasekhara, *Naval Postgraduate School* (29, 3, p. 314) Article based on AIAA Paper 89-0647

C92-047 Hazard Evaluation and Operational Cockpit Display of Ground-Measured Windshear Data. Craig Wanke and R. John Hansman Jr., *Massachusetts Institute of Technology* (29, 3, p. 319) Article based on AIAA Paper 90-0566

C92-048 Transonic Navier-Stokes Computations for an Oscillating Wing Using Zonal Grids. Neal M. Chaderjian and Guru P. Guruswamy, *NASA Ames Research Center* (29, 3, p. 326) Article based on AIAA Paper 90-0313

C92-049 Effects of Higher Harmonic Control on Rotor Performance and Control Loads. Khanh Nguyen, *NASA Ames Research Center*; and Inderjit Chopra, *University of Maryland* (29, 3, p. 336) Article based on AIAA Paper 90-1158 CP902

C92-050 Design Optimization of Natural Laminar Flow Bodies in Compressible Flow. Simha S. Dodbele, *ViGYAN, Inc.* (29, 3, p. 343) Article based on AIAA Paper 90-0303

C92-051 Microwave Landing System Modeling with Application to Air Traffic Control Automation. M. M. Poulouse, *Institut Teknologi, Brunei* (29, 3, p. 348) Article

C92-052 Software Reliability for Flight Crew Training Simulators. George E. Stark, *MITRE Corporation* (29, 3, p. 355) Article based on AIAA Paper 90-3122 CP9010

C92-053 Control Strategy for Maximizing Reconnaissance Range of Hypersonic Cruise Vehicles. H. G. Kauffman, R. V. Grandhi, W. L. Hankey and P. J. Belcher, *Wright State University* (29, 3, p. 360) Article based on AIAA Paper 90-3292

C92-054 Unsteady Aerodynamic Loading Produced by a Sinusoidally Oscillating Delta Wing. S. A. Huyer, M. C. Robinson and M. W. Luttges, *University of Colorado* (29, 3, p. 366) Article based on AIAA Paper 90-1536

C92-055 Extension and Validation of an Unsteady Wake Model for Rotors. Ay Su, Kyung M. Yoo and David A. Peters, *Georgia Institute of Technology* (29, 3, p. 374) Article

C92-056 Thermal Management for a Mach 5 Cruise Aircraft Using Endothermic Fuel. Dennis H. Petley, *NASA Langley Research Center*; and Stuart C. Jones, *Lockheed Engineering & Sciences Company* (29, 3, p. 384) Article based on AIAA Paper 90-3284

C92-057 Identification of the Transfer Function Between Turbulence and Aircraft. Qing Chen and Gunther Schänzer, *Technical University of Braunschweig, FRG* (29, 3, p. 390) Article

C92-058 Numerical Study of Vortex-Dominated Flows for Wings at High Incidence and Sideslip. C.-H. Hsu, *VIGYAN, Inc.*; and C. H. Liu, *NASA Langley Research Center* (29, 3, p. 396) Article based on AIAA Paper 90-3001 CP908

C92-059 Prediction of Vortex Shedding from Forebodies with Chines. Michael R. Mendenhall and Daniel J. Lesieutre, *Nielsen Engineering & Research, Inc.* (29, 3, p. 404) Article

C92-060 Flow over a Twin-Tailed Aircraft at Angle of Attack Part I: Spatial Characteristics. N. M. Komerath, S. G. Liou, R. J. Schwartz and J. M. Kim, *Georgia Institute of Technology* (29, 3, p. 413) Article

C92-061 Robust Flight Reconstruction for Helicopter Simulation and Training. K. KrishnaKumar, R. K. Prasanth and J. E. Bailey, *University of Alabama* (29, 3, p. 421) Article

C92-062 Drag Reduction of Bluff Bodies Through Momentum Injection. V. J. Modi, E. Shih and B. Ying, *University of British Columbia, Canada*; and T. Yokomizo, *Kanto Gakuin University, Japan* (29, 3, p. 429) Article based on AIAA Paper 90-3076 CP908

C92-063 Wake Effects on the Prediction of Transonic Viscous Flows Around Airfoils. D. P. Coiro, P. de Matteis and M. Amato, *CIRA, Centro Italiano Ricerche Aerospaziali, Italy* (29, 3, p. 437) Article based on AIAA Paper 90-3061 CP908

C92-064 Application of Active Flexible Wing Technology to the Agile Falcon. Edmund Pendleton and Mark Lee, *Wright Laboratory, Wright-Patterson AFB*; and Lee Wasserman, *Delta Dynamics, Inc.* (29, 3, p. 444) Article based on AIAA Paper 91-0987 CP911

C92-065 Fighter Agility Metrics, Research and Test. Randall K. Liefer, John Valasek, David P. Eggold and David R. Downing, *University of Kansas* (29, 3, p. 452) Article based on AIAA Paper 90-2807 CP906

C92-066 Downwash for Joined-Wing Airframe with Control Surface Deflections. John E. Burkhalter, Donald J. Spring and M. Kent Key, *Auburn University* (29, 3, p. 458) Article

C92-067 Improved Measurement of the Dynamic Loads Acting on Rotating Parachutes. Z. Shpund and D. Levin, *Technion Foundation for Research and Development, Israel* (29, 3, p. 465) Article based on AIAA Paper 86-2473 CP8610

C92-068 Composite Material Repairs to Metallic Airframe Components. T. F. Christian Jr. and D. O. Hammond, *Warner Robins Air Logistics Center, Robins AFB*; and J. B. Cochran, *Lockheed Aeronautical Systems Company—Georgia Division* (29, 3, p. 470) Article based on AIAA Paper 89-1408 CP891

C92-069 Transonic Aeroelasticity Analysis for Rotor Blades. Lie-Mine Gea and Chuen-Yen Chow, *University of Colorado*; and I-Chung Chang, *NASA Ames Research Center* (29, 3, p. 477) Article based on AIAA Paper 89-2212 CP896

C92-070 Thermal Structures: Four Decades of Progress. Earl A. Thornton, *University of Virginia* (29, 3, p. 485) Article based on AIAA Paper 90-0971 CP901

C92-071 Structure-Borne Noise Transmission in the Propfan Test Assessment Aircraft. James F. Unruh, *Southwest Research Institute* (29, 3, p. 499) Article based on AIAA Paper 90-3966

C92-072 Coalescence of Aeroelastic Modes in Flutter Analysis. Maher N. Bismarck-Nasr, *Instituto Tecnológico de Aero-náutica, Brazil* (29, 3, p. 505) Engineering Note

C92-073 Structural and Aerodynamic Data Transformation Using Inverse Isoparametric Mapping. R. M. V. Pidaparti, *Purdue University* (29, 3, p. 507) Engineering Note

C92-074 Effect of Thrust Vectoring on Level-Turn Performance. Pai-Hung Lee, *Aeronautical Research Laboratory, Taiwan, ROC*; and C. Edward Lan, *University of Kansas* (29, 3, p. 509) Engineering Note

C92-075 Transition of the Flutter Mode of a Two-Dimensional Section with an External Store. Zhi-chun Yang and Ling-cheng Zhao, *Northwestern Polytechnical University, PRC* (29, 3, p. 511) Engineering Note

C92-076 Characteristic Differences Between the Modal Parameters of Cast and Forged Structures. H. V. Panossian, *Rockwell International Corporation* (29, 3, p. 513) Engineering Note

C92-077 Accurate Prediction of Drag Using Euler Methods. C. P. van Dam and K. Nikfetrat, *University of California, Davis* (29, 3, p. 516) Engineering Note based on AIAA Paper 91-0338

C92-080 Flight Model for Unmanned Simulated Helicopters. Amnon Katz, *University of Alabama*; and Brett E. Butler, *McDonnell Douglas Helicopter Company* (29, 4, p. 521) Article

C92-081 Reconstruction of Flight Path in Turbulence. Qing Chen, *Technical University of Braunschweig, FRG*; and Yuan Lin, *DLR Institute of Flight Mechanics, FRG* (29, 4, p. 527) Article

C92-082 Unsteady Aerodynamics of a Wortmann Wing at Low Reynolds Numbers. H.-T. Liu, *QUEST Integrated, Inc.* (29, 4, p. 532) Article

C92-083 Structural Risk Assessment in the Israel Air Force for Fleet Management. Zohar Yosibash, *Structure Branch, Israeli Air Force* (29, 4, p. 540) Article

C92-084 Calibration-Related Pseudo-Reynolds Number Trends in Transonic Wind Tunnels. Felix Aulehla, *MBB-Deutsche Aerospace, FRG* (29, 4, p. 545) Article based on AIAA Paper 87-2612 CP875

C92-085 Flow over a Twin-Tailed Aircraft at Angle of Attack, Part II: Temporal Characteristics. N. M. Komerath, R. J. Schwartz and J. M. Kim, *Georgia Institute of Technology* (29, 4, p. 553) Article

C92-086 Establishing a Database for Flight in the Wakes of Structures. J. Val Healey, *Naval Postgraduate School* (29, 4, p. 559) Article

C92-087 Navier-Stokes Predictions for the F-18 Wing and Fuselage at Large Incidence. Russell M. Cummings, Yehia M. Rizk, Lewis B. Schiff and Neal M. Chaderjian, *NASA Ames Research Center* (29, 4, p. 565) Article based on AIAA Paper 90-0099

C92-088 Aircraft-Triggered Lightning: Processes Following Strike Initiation that Affect Aircraft. Vladislav Mazur, *National Oceanic and Atmospheric Administration/National Severe Storms Laboratory*; and Jean-Patrick Moreau, *Office National D'etudes et de Recherches Aerospatiales, France* (29, 4, p. 575) Article

C92-089 Prediction of Inviscid Supersonic/Hypersonic Aircraft Flowfields. A. Verhoff and D. Stookesberry, *McDonnell Aircraft Company* (29, 4, p. 581) Article

C92-090 Navier-Stokes Computations on Swept-Tapered Wings, Including Flexibility. Guru P. Guruswamy, *NASA Ames Research Center* (29, 4, p. 588) Article based on AIAA Paper 90-1152 CP902

C92-091 Experimental Study of Vortex Flows over Delta Wings in Wing-Rock Motion. T. Terry Ng, Gerald N. Malcolm and Liane C. Lewis, *Eidetics International, Inc.* (29, 4, p. 598) Article based on AIAA Paper 89-2187 CP896

C92-092 Remote Measurements of Supercooled Integrated Liquid Water During WISP/FAA Aircraft Icing Program. B. B. Stankov, E. R. Westwater, J. B. Snider and R. L. Weber, *National Oceanic and Atmospheric Administration/Environmental Research Laboratories* (29, 4, p. 604) Article based on AIAA Paper 91-0351

C92-093 Aerodynamic Forces on Noncircular Cross-Section Missile Forebodies. Brian E. Est and H. F. Nelson, *University of Missouri—Rolla* (29, 4, p. 612) Article based on AIAA Paper 91-0390

C92-094 Flight Deck Aerodynamics of a Nonaviation Ship. M. M. Rhoades and J. Val. Healey, *Naval Postgraduate School* (29, 4, p. 619) Article

C92-095 Predicted Pressure Distribution on a Prop-Fan Blade Through Euler Analysis. Makoto Kobayakawa, *Kyoto University, Japan*; Ryoji Takaki, *National Aerospace Laboratory, Japan*; Yoshifumi Kawakami, *Sumitomo Precision Products Ltd., Japan*; and Frederick B. Metzger, *Hamilton Standard* (29, 4, p. 627) Article

C92-096 Airdata Calibration Techniques for Measuring Atmospheric Wind Profiles. Edward A. Haering Jr., *NASA Dryden Flight Research Facility* (29, 4, p. 632) Article based on AIAA Paper 90-0230

C92-097 Simulation of Transonic Flow over Twin-Jet Transport Aircraft. S. Rill and K. Becker, *Deutsche Airbus GmbH, FRG* (29, 4, p. 640) Article based on AIAA Paper 91-0025

C92-098 Maximizing Thrust-Vectoring Control Power and Agility Metrics. Benjamin Z. Gal-Or, *Technion—Israel Institute of Technology* (29, 4, p. 647) Article

C92-099 Range, Energy, Heat of Motion in the Modified NBC, Anti-g, Tank Suit. Joseph A. Mastropaolo, *Trisphere Institute of Sports Medicine*; A. Neal de Gaston and Craig H. Durck, *McDonnell Douglas Corporation*; and Allen R. Van Santen, *Trisphere Institute of Sports Medicine* (29, 4, p. 652) Article

C92-100 Experimental-Theoretical Investigation of the Vibration Characteristics of Rotating Composite Box Beams. Ramesh Chandra and Inderjit Chopra, *University of Maryland* (29, 4, p. 657) Article

C92-101 Design Load Predictions on a Fighter-Like Aircraft Wing. S. Agrawal, P. J. Malloy and D. F. Fuglsang, *McDonnell Douglas Corporation* (29, 4, p. 665) Article

C92-102 Forebody Vortex Control Using Small, Rotatable Strakes. T. Terry Ng, *University of Toledo*; and Gerald N. Malcolm, *Eidetics International, Inc.* (29, 4, p. 671) Article based on AIAA Paper 91-0618

C92-103 Noise of Two High-Speed Model Counter-Rotation Propellers at Takeoff/Approach Conditions. Richard P. Woodward, *NASA Lewis Research Center* (29, 4, p. 679) Article based on AIAA Paper 87-2657

C92-104 System for Generating Sequences of Phased Gust or Taxi Loadings. Robert G. Eastin, Trygve R. Lerwick and Sven M. Soedel, *McDonnell Douglas Corporation* (29, 4, p. 686) Article

C92-105 Approach for Analysis and Design of Composite Rotor Blades. Geraldo A. Macedo Moura, *Centro Técnico Aeroespacial, Brazil*; and Ramesh Kolar, *Naval Postgraduate School* (29, 4, p. 693) Article based on AIAA Paper 90-1005 CP902

C92-106 Self-Induced Roll Oscillations of Low-Aspect-Ratio Rectangular Wings. Daniel Levin, *NASA Ames Research Center*; and Joseph Katz, *San Diego State University* (29, 4, p. 698) Article based on AIAA Paper 90-2811 CP906

C92-107 Assessment of One-Dimensional Icing Forecast Model Applied to Stratiform Clouds. Arnold Tunick and Henry Rachele, *U. S. Army Atmospheric Sciences Laboratory, White Sands Missile Range* (29, 4, p. 703) Article based on AIAA Paper 91-0352

C92-108 Unsteady Crossflow on a Delta Wing Using Particle Image Velocimetry. C. Magness, O. Robinson and D. Rockwell, *Lehigh University* (29, 4, p. 707) Engineering Note

C92-109 Time-Average Loading on a Two-Dimensional Airfoil in Large Amplitude Motion. G. M. Graham and M. Islam, *Ohio University* (29, 4, p. 709) Engineering Note based on AIAA Paper 90-2810 CP906

C92-110 Optimum Cruise Lift Coefficient in Initial Design of Jet Aircraft. Rodrigo Martinez-Val and Emilio Perez, *Universidad Politecnica de Madrid, Spain* (29, 4, p. 712) Engineering Note

C92-111 Advanced Pneumatic Impulse Ice Protection System (PIIP) for Aircraft. Charles A. Martin and James, C. Putt, *BF Goodrich Aerospace, De-Icing Systems* (29, 4, p. 714) Engineering Note based on AIAA Paper 90-0492

C92-112 Minimizing Supersonic Wave Drag with Physical Constraints at Design and Off-Design Mach Numbers. Jen-Fu Chang, *Aeronautical Research Laboratory, Taiwan, ROC* (29, 4, p. 716) Engineering Note

C92-113 Suppression of Fatigue-Inducing Cavity Acoustic Modes in Turbofan Engines. Robert H. Benner, *Rohr Incorporated* (29, 4, p. 718) Engineering Note based on AIAA Paper 90-3941

C92-114 Pitch Rate/Sideslip Effects on Leading-Edge Extension Vortices of an F/A-18 Aircraft Model. Sheshagiri K. Hebbar and Max F. Platzer, *Naval Postgraduate School*; and Odilon V. Cavazos, *Naval Air Station* (29, 4, p. 720) Engineering Note based on AIAA Paper 91-0280

C92-115 Thin-Airfoil Correction for Panel Methods. J. Carter and P. S. Jackson, *University of Auckland, New Zealand* (29, 4, p. 723) Engineering Note

C92-116 Wing Mass Formula for Subsonic Aircraft. Sergei V. Udin and William J. Anderson, *University of Michigan* (29, 4, p. 725) Engineering Note

C92-117 Whirl-Flutter Stability of a Pusher Configuration in Nonuniform Flow. F. Nitzsche and E. A. Rodrigues, *EMBRAER—Empresa Brasileira de Aeronáutica, Brazil* (29, 4, p. 727) Engineering Note

C92-118 Wing Design for Hanggliders Having Minimum Induced Drag. Takeshi Sugimoto, *University of Tokyo, Japan* (29, 4, p. 730) Engineering Note

C92-119 Optimization of Constant Altitude—Constant Airspeed Flight of Turbojet Aircraft. Shiva Kumar Ojha, *Indian Institute of Technology* (29, 4, p. 731) Engineering Note

C92-120 Statistical Prediction of Maximum Buffet Loads on the F/A-18 Vertical Fin. B. H. K. Lee and S. Dunlavy, *Institute for Aerospace Research, Canada* (29, 4, p. 734) Engineering Note

C92-121 Wind-Tunnel Compressor Stall Monitoring Using Neural Networks. Ching F. Lo and G. Z. Shi, *University of Tennessee Space Institute* (29, 4, p. 736) Engineering Note based on AIAA Paper 91-2500

C92-122 Effect of Nose-Boom on Forebody Vortex Flow. T. Terry Ng, *University of Toledo* (29, 4, p. 738) Engineering Note

C92-126 Escape Strategies for Turboprop Aircraft in Microburst Windshear. Richard B. Bobbitt and Richard M. Howard, *Naval Postgraduate School* (29, 5, p. 745) Article based on AIAA Paper 91-2945

C92-127 Evaluation of Discrete Frequency Sound in Closed-Test-Section Wind Tunnels. Marianne Mosher, *NASA Ames Research Center* (29, 5, p. 753) Article based on AIAA Paper 90-4011

C92-128 Reduced Basis Alternatives to the Solution of Non-linear Dynamical Systems. Chia L. Chang, *National Yunlin Institute of Technology, Taiwan, ROC*; and John J. Engblom, *Florida Institute of Technology* (29, 5, p. 760) Article

C92-129 Aeroelastic Effects of Spoiler Surfaces on a Low-Aspect-Ratio Rectangular Wing. Stanley R. Cole, *NASA Langley Research Center* (29, 5, p. 768) Article based on AIAA Paper 90-0981

C92-130 Nine-Degree-of-Freedom Simulation of Rotating Parachute Systems. Karl-Friedrich Doherr, *DLR-Institut für Flugmechanik, FRG*; and Hartmut Schilling, *Rheinmetall GmbH, FRG* (29, 5, p. 774) Article based on AIAA Paper 91-0877

C92-131 Dynamic Analysis of Rotor Blades with Root Retention Design Variations. R. G. Loewy, A. Rosen, M. B. Mathew and M. Zotto, *Rensselaer Polytechnic Institute* (29, 5, p. 782) Article based on AIAA Paper 90-1159 CP902

C92-132 Unsteady Shock-Vortex Interaction on a Flexible Delta Wing. Shigeru Obayashi and Guru P. Guruswamy, *NASA Ames Research Center* (29, 5, p. 790) Article based on AIAA Paper 90-1109 CP902

C92-133 Model Flight Tests of a Spin-Resistant Trainer Configuration. Long P. Yip, Holly M. Ross and David B. Robelen, *NASA Langley Research Center* (29, 5, p. 799) Article based on AIAA Paper 88-2146 CP885

C92-134 Direct Simulation of Low-Density Flow over Airfoils. Tsze C. Tai, *Naval Surface Warfare Center* (29, 5, p. 806) Article based on AIAA Paper 90-1539

C92-135 Application of Advanced Multidisciplinary Analysis and Optimization Methods to Vehicle Design Synthesis. Robert David Consoli, *General Dynamics*; and Jaroslaw Sobieszczanski-Sobieski, *NASA Langley Research Center* (29, 5, p. 811) Article

C92-136 Drag Computation by Vortex Methods. Mayer Humi, *Worcester Polytechnic Institute* (29, 5, p. 819) Article

C92-137 Forcing Level Effects of Internal Acoustic Excitation on the Improvement of Airfoil Performance. R. C. Chang, *CSIST, Taiwan, ROC*; F.-B. Hsiao and R.-N. Shyu, *National Cheng Kung University, Taiwan, ROC* (29, 5, p. 823) Article

C92-138 Navier-Stokes Simulation of a Close-Coupled Canard-Wing-Body Configuration. Eugene L. Tu, *NASA Ames Research Center* (29, 5, p. 830) Article

C92-139 Euler/Experiment Correlation of a Generic Fighter. Aga M. Goodsell, *NASA Ames Research Center* (29, 5, p. 839) Article

C92-140 Two-Fence Concept for Efficient Trapping of Vortices on Airfoils. Vernon J. Rossow, *NASA Ames Research Center* (29, 5, p. 847) Article

C92-141 Physics of Vortical Flows. Jean M. Déleroy, *Office National d'Etudes et de Recherches Aéropatiales, France* (29, 5, p. 856) Article

C92-142 Analytical Modeling of SH-2F Helicopter Shipboard Operation. Fu-Shang Wei, *Kaman Aerospace Corporation*; Erich Baitis and William Meyers, *David Taylor Research Center* (29, 5, p. 877) Article

C92-143 Viscous Flow Simulation of a Fighter Aircraft. Oh. J. Kwon, *Sverdrup Technology, Inc.*; and Lakshmi N. Sankar, *Georgia Institute of Technology* (29, 5, p. 886) Article based on AIAA Paper 91-0278

C92-144 Experimental Study of Noise Generation and Propagation in a Turbofan Model. S. Léwy and S. Canard-Caruana, *Office National d'Etudes et de Recherches Aéropatiales, France*; and J. Julliard, *Société Nationale d'Etude et de Construction de Moteurs d'Aviation, France* (29, 5, p. 892) Article based on AIAA Paper 90-3950

C92-145 Small Two-Dimensional Surface Excrescences on Aircraft Wings Approaching Separation. Mahmoud A. Alhusein, *Mu'tah University, Jordan*; and David J. Cockrell, *University of Leicester, England, UK* (29, 5, p. 899) Article

C92-146 Wing Mass Formula for Twin Fuselage Aircraft. Sergei V. Udin and William J. Anderson, *University of Michigan* (29, 5, p. 907) Article

C92-147 High Angle-of-Attack Flush Airdata Sensing System. Stephen A. Whitmore and Timothy R. Moes, *NASA Ames Research Center*; and Terry J. Larson, *PRC Systems, Inc.* (29, 5, p. 915) Article based on AIAA Paper 90-0232

C92-148 Application of Computational Fluid Dynamics to Sonic Boom Near- and Mid-Field Prediction. Samson H. Cheung, Thomas A. Edwards and Scott L. Lawrence, *NASA Ames Research Center* (29, 5, p. 920) Article

C92-149 Flight Measurements of Downwash on the Ball-Bartoe Jetwing Powered Lift Aircraft. U. P. Solies, *University of Tennessee Space Institute* (29, 5, p. 927) Article based on AIAA Paper 90-1284 CP904

C92-150 Response of Double-Wall (Sandwich) Circular Plates to Random Excitations—Analytical Approach. Dimitri A. Bofilios, *Integrated Aerospace Sciences Corporation, Greece*; and Constantinos S. Lyrantzis, *San Diego State University* (29, 5, p. 932) Article

C92-151 Multidisciplinary Optimization of Aeroservoelastic Systems Using Reduced-Size Models. Mordechai Karpel, *Technion—Israel Institute of Technology* (29, 5, p. 939) Article

C92-152 Coining of Holes in Aluminum Plates: Finite Element Simulations and Experiments. Rutger Ogeman, *Chalmers University of Technology, Sweden* (29, 5, p. 947) Article

C92-153 Flutter and Stall Response of a Helicopter Blade with Structural Nonlinearity. D. M. Tang and E. H. Dowell, *Duke University* (29, 5, p. 953) Article

C92-154 Improved Calculation of Transonic Potential Flow Past Swept Wings. Lixia Wang and David A. Caughey, *Cornell University* (29, 5, p. 961) Engineering Note

C92-155 Predicting Droplet Impingement on Yawed Wings. Michael B. Bragg, *University of Illinois at Urbana—Champaign*; and Stanley H. Mohler Jr., *Sverdrup Technology* (29, 5, p. 964) Engineering Note

C92-156 Demonstration of Structural Optimization Applied to Wind-Tunnel Model Design. Mark French and Raymond M. Kolonay, *Wright Laboratory, Wright-Patterson AFB* (29, 5, p. 966) Engineering Note

C92-158 Heat Transfer Peculiarities in Supersonic Flows. V. Ya. Borovoy, V. N. Brazhko, G. I. Maikapar, A. S. Skuratov and I. V. Struminskaya, *Central Aerohydrodynamic Institute, Russia* (29, 6, p. 969) Article

C92-159 Longitudinal Stability Analysis of Aerial-Towed Systems. Noriaki Nakagawa and Akira Obata, *Japan Aircraft Manufacturing Company, Ltd., Japan* (29, 6, p. 978) Article

C92-160 Unsteady Simulation of Viscous Flowfield Around F-18 Aircraft at Large Incidence. Yehia M. Rizk, *NASA Ames Research Center*; and Ken Gee, *MCAT Institute* (29, 6, p. 986) Article based on AIAA Paper 91-0020

C92-161 Ground Impingement Noise of Supersonic Jets from Nozzles with Various Exit Geometries. Thomas D. Norum, *NASA Langley Research Center* (29, 6, p. 993) Article based on AIAA Paper 90-4015

C92-162 Mitigation of Pressure Oscillations Induced by Supersonic Flow over Slender Cavities. R. A. Smith, E. Gutmark and K. C. Schadow, *Naval Air Warfare Center* (29, 6, p. 999) Article based on AIAA Paper 90-4019

C92-163 Effects of Fuselage Boundary Layer on Noise Propagation from Advanced Propellers. Peter L. Spence, *Lockheed Engineering and Sciences Company* (29, 6, p. 1005) Article

C92-164 Aerodynamic Design via Optimization. K. D. Lee and S. Eyi, *University of Illinois* (29, 6, p. 1012) Article

C92-165 Aerodynamic Shape Design and Optimization: Status and Trends. George S. Dulikravich, *Pennsylvania State University* (29, 6, p. 1020) Article based on AIAA Paper 91-0476

C92-166 Physical Modeling of Ground Effects on Vortex Wakes. H.-T. Liu, P. A. Hwang and R. A. Srnisky, *QUEST Integrated, Inc.* (29, 6, p. 1027) Article

C92-167 Three-Dimensional Simulation of Electrothermal De-icing Systems. Alan D. Yaslik, Kenneth J. De Witt and Theo G. Keith Jr., *University of Toledo*; and Walter Boronow, *McDonnell Douglas Corporation* (29, 6, p. 1035) Article based on AIAA Paper 91-0267

C92-168 Assessment of Microburst Models for Downdraft Estimation. Dan D. Vicroy, *NASA Langley Research Center* (29, 6, p. 1043) Article based on AIAA Paper 91-2947

C92-169 Numerical Simulation of Re-Entry Flow Around the Space Shuttle with Finite-Rate Chemistry. Yasuhiro Wada, *National Aerospace Laboratory, Japan*; and Hirotohi Kubota, *University of Tokyo, Japan* (29, 6, p. 1049) Article

C92-170 Numerical Modeling of an Advanced Pneumatic Impulse Ice Protection System for Aircraft. Subramaniam Ramamurthy, Theo G. Keith Jr. and Kenneth J. De Witt, *University of Toledo*; James C. Putt, Charles A. Martin and Kevin L. Leffel, *B. F. Goodrich Aerospace Division* (29, 6, p. 1057) Article based on AIAA Paper 91-0555

C92-171 Compensating Lags in Head-Coupled Displays Using Head Position Prediction and Image Deflection. Richard H. Y. So and Michael J. Griffin, *University of Southampton, England, UK* (29, 6, p. 1064) Article based on AIAA Paper 91-2926

C92-172 Sonic Boom Environment Under a Supersonic Military Operating Area. Kenneth J. Plotkin, Vijay R. Desai, Michael J. Lucas and Carey L. Moulton, *Wyle Laboratories*; and Ruben G. Garza, *Geo-Marine, Inc.* (29, 6, p. 1069) Article based on AIAA Paper 90-4032

C92-173 Spinning Mode Analysis of the Acoustic Field Generated by a Turboshaft Engine. D. Blacodon and S. Lévy, *Office National d'Etudes et de Recherches Aérospatiales, France* (29, 6, p. 1073) Article based on AIAA Paper 90-4012

C92-174 Multigrid Euler Calculations over Complete Aircraft. D. M. Tidd and D. J. Strash, *Analytical Methods, Inc.*; B. Epstein, A. Luntz, A. Nachshon and T. Rubin, *Israel Aircraft Industries, Ltd.* (29, 6, p. 1080) Article based on AIAA Paper 91-3236 CP918

C92-175 Sources of High Alpha Vortex Asymmetry at Zero Sideslip. L. E. Ericsson, *Lockheed Missiles and Space Company, Inc.* (29, 6, p. 1086) Article

C92-176 Wind-Tunnel Investigation of a Fighter Model at High Angles of Attack. Sheshagiri K. Hebbar and David H. Leedy, *Naval Postgraduate School* (29, 6, p. 1091) Article based on AIAA Paper 90-3019 CP908

C92-177 Propeller Slip-Stream Model in Subsonic Linearized Potential Flow. Per Lötstedt, *SAAB Aircraft Division, SAAB-SCANIA, Sweden* (29, 6, p. 1098) Article

C92-178 Transonic Low-Reynolds Number Airfoils. Mark Drela, *Massachusetts Institute of Technology* (29, 6, p. 1106) Article based on AIAA Paper 91-3337 CP918

C92-179 Optimized Scramjet Integration on a Waverider. Mary Kae L. O'Neill and Mark J. Lewis, *University of Maryland* (29, 6, p. 1114) Article based on AIAA Paper 91-1693

C92-180 Unsteady Wind-Tunnel Interference in Aircraft Dynamic Experiments. Martin E. Beyers, *Institute for Aerospace Research, Canada* (29, 6, p. 1122) Article based on AIAA Paper 91-0682

C92-181 Acoustic Testing of High-Temperature Panels. J. D. Leatherwood, S. A. Clevenson, C. A. Powell and E. F. Daniels, *NASA Langley Research Center* (29, 6, p. 1130) Article based on AIAA Paper 90-3939

C92-182 Buffet Excitation of Wings at Low Speeds. Steven J. Zan, *Institute for Aerospace Research, Canada*; and David J. Maull, *Cambridge University, England, UK* (29, 6, p. 1137) Article