

## David L. Whitfield

### Education

PhD, Aerospace Engineering, University of Tennessee, 1971  
MS, Aerospace Engineering, University of Tennessee, 1968  
BS, Mechanical Engineering, Oklahoma State University, 1966

### Employment

*Director*, SimCenter: National Center for Computational Engineering, University of Tennessee at Chattanooga, 2002 to Present  
*Director*, Graduate School of Computational Engineering, University of Tennessee at Chattanooga, 2002 to Present  
*Associate Dean*, College of Engineering and Computer Science, University of Tennessee at Chattanooga, 2002 to Present  
*Director*, Computational Simulation and Design Center, Mississippi State University, 2000 - 2002  
*Director*, Computational Fluid Dynamics Laboratory, Mississippi State University, 1992 to 2000  
*Distinguished Professor*, Department of Aerospace Engineering, Mississippi State University, 1989 to 2002  
*Professor*, Department of Aerospace Engineering, Mississippi State University, 1981 to 2002  
*Supervisor*, ARO, Inc., Computational Fluid Dynamics Branch, Arnold Air Force Station, TN, 1975-1980  
*Research Engineer*, ARO, Inc., Arnold Air Force Station, TN, 1967-1975

### University Service

Outstanding Faculty Member in the College of Engineering, Mississippi State University, 1990  
Hearin-Hess Professor of Engineering, 1990-1991, 1991-1992, 1992-1993, 1993-1994, 1994-1995, 1995-1996  
Mississippi State University Alumni Outstanding Faculty Award for Research, 1994  
College of Engineering Outstanding Research Award, Mississippi State University, 1997  
Outstanding Career Achievement Award, Mississippi State University, 2001  
Hearin Eminent Professor, 2001-2002

### Academic Specialties

Computational Fluid Dynamics  
Solution Algorithms  
Unsteady Viscous Flow Applications  
Computational Design

### Professional Activities

American Institute of Aeronautics & Astronautics (AIAA), Fellow  
AIAA Technical Committee for Fluid Dynamics, Former Member  
SIAM  
Sigma Xi  
*Computers and Fluids*, Editorial Advisory Board  
National Research Council Committee to Assess Current Capabilities and Future Directions in Computational Fluid Dynamics  
Peer Review Team to Assess the NASA Langley Research Center Program in Unsteady Aerodynamics  
National Science Foundation Site Review Team for NSF Advanced Combustion Engineering Research Center

### Previous Grants & Contracts

NASA Langley Research Center  
NASA Glenn Research Center

NASA Ames Research Center  
NASA Marshall Space Flight Center  
Army Research Laboratory  
Air Force Office of Scientific Research  
Eglin Air Force Base  
Department of Energy  
Office of Naval Research  
DARPA (Defense Advanced Research Projects Agency)  
General Dynamics  
Lockheed Martin Denver  
Lockheed Martin Skunk Works  
Ingalls Shipbuilding  
Naval Surface Warfare Center Carderock Division  
NAVSEA

## Reviewer

*AIAA Journal*  
*Journal of Computational Physics*  
*Computers and Fluids*  
*ASME Journal of Fluids Engineering*  
*AIAA Journal of Propulsion and Energy*  
AIAA Conference Papers

## Publications

1. Whitfield, D. L., "Theoretical and Experimental Investigation of Boundary Layers in Low Density Hypersonic Axisymmetric Nozzles," AEDC-TR-68-193, September 1968. (Also MS Thesis, University of Tennessee, June 1968.)
2. Whitfield, D. L. And Lewis, C. H., "Analysis of Boundary Layers in Low Density Hypersonic Axisymmetric Nozzles, Including the Effects of Displacement, First-Order Transverse Curvature, Velocity Slip, and Temperature Jump," AIAA Paper No. 69-653, June 1969.
3. Whitfield, D. L. and Tidwell, E. D., "Low Density Wind Tunnel Measurements of the Chemiluminescent Reactions of Nitric Oxide with Atomic Oxygen and Atomic Hydrogen," AEDC-TR-69-196, November 1969.
4. Good, R. E., Golmb, D., DelGreco, F. P., Hill, D. W., and Whitfield, D. L. "Clusters in Nitric Oxide Jet Expansion," *Rarefied Gas Dynamics*, Vol. I., and New York: Academic Press, 1969, pp. 1449-1453.
5. Whitfield, D. L. and Lewis, C. H., "Boundary-Layer Analysis of Low-Density Nozzles Including Displacement, Slip, and Transverse Curvature," *Journal of Spacecraft and Rockets*, Vol. 7, No. 4, April 1970, pp. 462-468.
6. Whitfield, D. L. and Stephenson, W. B., "Sphere Drag in the Free-Molecular and Transitional Flow Regimes," AEDC-TR-70-32, April 1970.
7. Stephenson, W. B. and Whitfield, D. L., "Drag Measurements in a Low Density Gas Stream," AEDC-TR-70-25, May 1970.
8. Whitfield, D. L., "Dynamics of Particles in Free Molecular Flow with Application to High Altitude Meteoric Dust Collection Devices," AEDC-TR-70-139, August 1970.
9. Benek, J. A. and Whitfield, D. L., "AFRPL Scarfed Nozzle Condensation Study in 4x6 Research Chamber," LTR-AEDC-VKF-ASP-1-70, December 1970.
10. Powell, H. M., Hill, D. W., and Whitfield, D. L., "The Measurements and Analysis of Chemical and Gas Dynamic Properties of a Rocket Plume at Near Space Conditions (U)," *JANNAF Sixth Plume Technology Meeting*, Naval Postgraduate School, Monterey, CA, 1971, CPIA Publication 209, April 1971. (CONFIDENTIAL)
11. Whitfield, D. L. and Smithson, H. K. "Low-Density Supersonic Sphere Drag with Variable Wall Temperature," AEDC-TR-71-83, July 1971.
12. Powell, H. M., Hill, D. W., and Whitfield, D. L., "Evaluation of a Mass Spectrometer Probe for Density and Velocity Distribution Measurements in a Rocket Exhaust Plume," AEDC-TR-71-135, September 1971.

13. Smithson, H. K., Price, L. L., and Whitfield, D. L., "Wind Tunnel Testing of Interactions of High Altitude Rocket Plumes with the Free Stream," AEDC-TR-71-118, September 1971.
14. Stephenson, W. B. And Whitfield, D. L., "Drag Measurement in a Low Density Gas Stream," *IEEE Transactions on Aerospace Electronic Systems*, Vol. 7, No. 6, November 1971, pp. 1131-1137.
15. Whitfield, D. L., "Drag on Bodies in Rarefied High-Speed Flow," PhD Dissertation, University of Tennessee, December 1971.
16. Whitfield, D. L., "Analysis of Sphere and Cylinder Drag in Rarefied Flow," *Rarefied Gas Dynamics*, Vol. I, Editrice Tecnico Scientifica, Pisa, Italy, 1971, pp. 527-534.
17. Whitfield, D. L., "Mean Free Path of Molecules from a Surface in Rarefied Flow with Application to Correlating Drag Data," AIAA Paper No. 73-198, January 1973.
18. Whitfield, D. L., "Calibration of a Heat Flux Sensor in Rarefied Hypersonic Flow," LTR-AEDC-VKF-ASP-3-73, March 1973.
19. Whitfield, D. L., "Rarefied Flow Heat-Flux Calibration of an Earth Satellite Temperature Alarm System," LTR-AEDC-VKF-ASP-1-73, March 1973.
20. Whitfield, D. L., Lewis, J. W. L., Williams, W. D., et al., "Specie Number Density, Pitot Pressure, and Flow Visualization in the Near Field of Two Supersonic Nozzle Banks Used for Chemical Laser Systems," AEDC-TR-73-11, May 1973.
21. Whitfield, D. L., "Viscous Effects in Low-Density Nozzle Flows," AEDC-TR-73-52, June 1973.
22. Whitfield, D. L., Lewis, J. W. L., and Williams, W. D., "Specie Number Density, Pitot Pressure, and Flow Visualization in the Near Field of Two Supersonic Nozzle Banks Used for Chemical Laser Systems," AIAA Paper No. 73-642, July 1973.
23. Whitfield, D. L., Smithson, H. K., and Price, L. L., "Plume Boundary Jump of an Underexpanded Jet Exhausting Counter to a Freestream," *AIAA Journal*, Vol. 11, No. 9, September 1973, pp. 1336-1337.
24. Whitfield, D. L., "Mean Free Path of Emitted Molecules and Correlation of Sphere Drag Data," *AIAA Journal*, Vol. 11, No. 12, December 1973, pp. 1666-1670.
25. Whitfield, D. L., Lewis, J. W. L., and Williams, W. D., "Measurements in the Near Field of Supersonic Nozzles for Chemical Laser Systems," *AIAA Journal*, Vol. 12, No. 6, June 1974, pp. 870-872.
26. Whitfield, D. L., "Some Computations of Turbulent Boundary Layers," ARO-ER-74-3, August 1974.
27. Whitfield, D. L., "Some Improvements in Data Reduction of Pitot Pressure Measurements in Turbulent Boundary Layers," ARO-ER-74-4, August 1974.
28. Whitfield, D. L., "Heat Flux to Normal Flat Plates in Rarefied Hypersonic Flow," *Rarefied Gas Dynamics*, Vol. II, DFVLR-Press, Porz-Wahn, German, 1974, pp. D.18.1-D.18.7.
29. Whitfield, D. L., Bertrand, W. T., and Brewer, L. E., "Infrared Radiation Approximation for Homogeneous Plumes," AIAA Paper No. 75-703, May 1975.
30. Whitfield, D. L., "Infrared Turbojet Plume Radiation," AEDC-TR-76-14, February 1976.
31. Whitfield, D. L., "Analytical, Numerical and Experimental Results on Turbulent Boundary Layers," AEDC-TR-76-62, July 1976.
32. Whitfield, D. L. and High, M. D., "Velocity-Temperature Relations in Turbulent Boundary Layers with Non-Unity Prandtl Numbers," AIAA Paper No. 76-411, July 1976.
33. Whitfield, D. L. and High, M. D., "Velocity-Temperature Relations in Turbulent Boundary Layers with Non-Unity Prandtl Numbers," *AIAA Journal*, Vol. 15, No. 3, March 1977, pp. 431-434.
34. Whitfield, D. L., "Turbulent Flow Near a Wall Based on a Turbulent Kinetic Energy Equation," in *Boundary Layer Effects-Proceedings of the 5th U.S. Air Force-Federal Republic of Germany Data Exchange Agreement Meeting*, A.W. Fiore, Editor, AFFDL-TR-77-61, July 1977, pp. 447-454.
35. Whitfield, D. L., "Analytical Description of the Complete Two-Dimensional Turbulent Boundary-Layer Velocity Profile," AEDC-TR-77-79, September 1977.
36. Sinclair, D. W., Whitfield, D. L., and Lucci, C. A., "Holographic Interferometry Measurements of Subsonic Turbulent Boundary Layers," AIAA Paper No. 78-119, July 1978.

37. Whitfield, D. L., "Integral Solution of Compressible Turbulent Boundary Layers Using Improved Velocity Profiles," AEDC-TR-78-42, August 1978.
38. Whitfield, D. L., "Analytical Description of the Complete Turbulent Boundary Layer Velocity Profile," AIAA Paper No. 78-1158, 1978.
39. Whitfield, D. L., "Analytical Description of the Complete Turbulent Boundary Layer Velocity Profile," *AIAA Journal*, Vol. 17, No. 10, October 1979, pp. 1145-1147.
40. Whitfield, J. D., Pate, S. R., Kimzey, W. F., and Whitfield, D. L., "The Role of Computers in Aerodynamic Testing," *Computers and Fluids*, Vol. 8, No. 1, March 1980, pp. 71-99.
41. Whitfield, D. L., Swafford, T. W., and Jacocks, J. L., "Calculation of Turbulent Boundary Layers with Separation, Reattachment, and Viscous-Inviscid Interaction," AIAA Paper No. 80-1439, July 1980.
42. Whitfield, D. L., Jameson, A., and Schmidt, W., "Viscid-Inviscid Interaction on Airfoils Using Euler and Inverse Boundary-Layer Equations," Presented at the *U.S.-German Data Exchange Meeting* at DFVLR-AVA in Gottingen, Germany, April 1981.
43. Schmidt, W., Jameson, A., and Whitfield, D. L., "Finite Volume Solution for the Euler Equation for Transonic Flow over Airfoils and Wings Including Viscous Effects," AIAA Paper No. 81-1265, June 1981.
44. Whitfield, D. L., Swafford, T. W., and Jacocks, J. L., "Calculation of Turbulent Boundary Layers with Separation and Viscous-Inviscid Interaction," *AIAA Journal*, Vol. 19, No. 10, October 1981, pp. 1315-1322.
45. Whitfield, D. L., Swafford, T. W., and Donegan, T. L., "An Inverse Integral Computational Method for Compressible Turbulent Boundary Layers," in *Recent Contributions to Fluid Mechanics*, W. Haase, Editor, Springer-Verlag, Berlin, 1982.
46. Whitfield, D. L. and Jameson, A., "Three-Dimensional Euler Equation Simulation of Propeller-Wing Interaction in Transonic Flow," AIAA Paper No. 83-0236, January 1983.
47. Schmidt, W., Jameson, A., and Whitfield, D., "Finite-Volume Solutions to the Euler Equations in Transonic Flow," *Journal of Aircraft*, Vol. 20, No. 2, February 1983, pp. 127-133.
48. Swafford, T. W. and Whitfield, D. L., "Numerical Solutions of Three-Dimensional Time-Dependent Compressible Turbulent Integral Boundary-Layer Equations in General Curvilinear Coordinates," AIAA Paper No. 83-1674, July 1983.
49. Whitfield, D. L. and Janus, J. M., "Three-Dimensional Unsteady Euler Equations Solution Using Flux Vector Splitting," AIAA Paper No. 84-1552, June 1984.
50. Whitfield, D. L. and Jameson, A., "Euler Equation Simulation of Propeller-Wing Interaction in Transonic Flow," *Journal of Aircraft*, Vol. 21, No. 11, November 1984, pp. 835-839.
51. Whitfield, D. L., Thomas, J. L., Jameson, A., and Schmidt, W., "Computation of Transonic Viscous-Inviscid Interacting Flow," in *Numerical and Physical Aspects of Aerodynamic Flows II*, T. Cebeci, Editor, Springer-Verlag, New York, 1984, pp. 285-295.
52. Belk, D. M., Janus, J. M., and Whitfield, D. L., "Three-Dimensional Unsteady Euler Equations Solutions on Dynamic Grids," AIAA Paper No. 85-1704, July 1985.
53. Swafford, T. W. and Whitfield, D. L., "Time-Dependent Solution of Three-Dimensional Compressible Turbulent Integral Boundary-Layer Equations," *AIAA Journal*, Vol. 23, No. 7, July 1985, pp. 1005-1013.
54. Edwards, D. E., Whitfield, D. L., and Carter, J. E., "Application of Interacting Boundary Layer Theory in the Analysis of Transonic Shock Induced Separation," *International Union of Theoretical and Applied Mechanics* (IUTAM), Palaiseau, France, September 1985.
55. Whitfield, D. L., "Implicit Upwind Finite Volume Scheme for the Three Dimensional Euler Equations," Engineering and Industrial Research Station Report MSSU-EIRS-ASE-85-1, Mississippi State University, Mississippi State, MS, September 1985.
56. Lijewski, L. E., Thompson, J. F., and Whitfield, D. L., "Computational Fluid Dynamics for Weapon Carriage and Separation," AGARD *Fluid Symposium on Store Airframe Aerodynamics*, Athens, Greece, October 1985.
57. Whitfield, D. L., "Viscous-Inviscid Interaction Computations Using a Pseudo Navier-Stokes Approach," in *Numerical and Physical Aspects of Aerodynamic Flows III*, T. Cebeci, Editor, Springer-Verlag, New York, 1985.

58. Whitfield, D. L. and Thomas, J. L., "Transonic Viscous-Inviscid Interaction Using Euler and Inverse Boundary-Layer Equations," Vol. 3 of the Series in Recent Advances in Numerical Methods in Fluids entitled *Computational Methods in Viscous Flow*, W.G. Habashi, Editor, Pineridge Press, Swansea, U. K., 1985.
59. Anderson, W. K., Thomas, J. L., and Whitfield, D. L., "Multigrid Acceleration of the Flux Split Euler Equations," AIAA Paper No. 86-0274, January 1986.
60. Belk, D. M., Janus, J. M., and Whitfield, D. L., "Three-Dimensional Unsteady Euler Equations Solutions on Dynamic Grids," AFATL-TR-86-21, Air Force Armament Laboratory, April 1986.
61. Janus, J. M. and Whitfield, D.L., "Advanced 3-D Viscous SSME Turbine Rotor Stator CFD Algorithms," Final Report NAS8-36486, Prepared for George C. Marshall Space Flight Center, Marshall Space Flight Center, Alabama, and September 1986.
62. Belk, D. M. And Whitfield, D. L., "3-D Euler Solutions on Blocked Grids Using an Implicit Two-Pass Algorithm," AIAA Paper No. 87-0450, January 1987.
63. Belk, D. M. And Whitfield, D. L., "Time-Accurate Euler Equations Solutions on Dynamic Blocked Grids," AIAA Paper No. 87-1127-CP, June 1987.
64. Gatlin, B. and Whitfield, D. L., "An Implicit Upwind Finite Volume Method for Solving the Three-Dimensional Thin-Layer Navier-Stokes Equations," AIAA Paper No. 87-1149-CP, June 1987.
65. Whitfield, D. L., Swafford, T. W., Janus, J. M., Mulac, R.A., and Belk, D. M., "Three-Dimensional Unsteady Euler Solutions for Propfans and Counter-Rotating Propfans in Transonic Flow," AIAA Paper No. 87-1197, June 1987.
66. Belk, D. M., Janus, J. M., and Whitfield, D. L., "Three-Dimensional Unsteady Euler Equations Solution on Dynamic Grids," *AIAA Journal*, Vol. 25, No. 9, September 1987, pp. 1160-1161.
67. Whitfield, D. L., Janus, J. M., and Simpson, L. B., "Implicit Finite Volume High Resolution Wave-Split Scheme for Solving the Unsteady Three-Dimensional Euler and Navier-Stokes Equations on Stationary or Dynamic Grids," Engineering and Industrial Research Station Report MSSU-EIRS-ASE-88-2, Mississippi State University, Mississippi State, MS, February 1988.
68. Anderson, W. K., Thomas, J. L., and Whitfield, D. L., "Multigrid Acceleration of the Flux-Split Euler Equations," *AIAA Journal*, Vol. 26, No. 6, June 1988, pp. 649-654.
69. Janus, J. M. and Whitfield, D. L., "Improved 3-D Turbomachinery CFD Algorithm," Final Report, Prepared for Scientific Research Associates, Inc., Glastonbury, CT, and June 1988.
70. Pirzadeh, S. and Whitfield, D. L., "Three-Dimensional Unsteady Transonic Viscous-Inviscid Interaction Using the Euler and Boundary-Layer Equations," AIAA Paper No. 88-2578, June 1988.
71. Thompson, J. F. and Whitfield, D. L., "Transonic Flow Solutions on General 3D Regions Using Composite-Block Grids," *11th International Conference on Numerical Methods in Fluid Dynamics*, Williamsburg, VA, June 27 - July 1, 1988.
72. Mounts, J. S., Belk, D. M., and Whitfield, D. L., "Program EAGLE User's Manual: Vol. IV - Multiblock Implicit, Steady-State Euler Code," AFATL-TR-88-117, Vol. IV, Air Force Armament Laboratory, September 1988.
73. Anderson, W. K., Thomas, J. L., and Whitfield, D. L., "Three-Dimensional Multigrid Algorithms for the Flux-Split Euler Equations," NASA-TP-2829, November 1988.
74. Janus, J. M. and Whitfield, D. L., "A Simple Time-Accurate Turbomachinery Algorithm with Numerical Solutions of an Uneven Blade Count Configuration," AIAA Paper No. 89-0206, January 1989.
75. Whitfield, D. L., Janus, J. M., and Arabshahi, A., "Unsteady Euler Solutions on Dynamic Blocked Grids for Complex Configurations," *AGARD Specialists Meeting on Mesh Generation for Complex Three-Dimensional Configurations*, Leon, Norway, May 24-25, 1989.
76. Simpson, L. B. and Whitfield, D. L., "A Flux-Difference Split Algorithm for Unsteady Thin-Layer Navier-Stokes Solutions," AIAA Paper No. 89-1995, June 1989.
77. Whitfield, D. L. and Thompson, J. F., "Computation of Transonic Flow about Stores," AFATL-TR-89-20, Eglin Air Force Base, FL, June 1989.

78. Arabshahi, A. and Whitfield, D. L., "A Multiblock Approach to Solving the Three-Dimensional Unsteady Euler Equations About A Wing-Pylon-Store Configuration," AIAA Paper No. 89-3401, Presented at the *AIAA Atmospheric Flight Mechanics Conference*, Boston, MA, August 14-16, 1989.
79. Janus, J. M., Whitfield, D. L., Horstman, H., and Mansfield, F., "Computation of the Unsteady Flowfield About a Counter Rotating Propfan Cruise Missile," AIAA Paper No. 90-3093, August 1990.
80. Whitfield, D. L., "Newton-Relaxation Schemes for Nonlinear Hyperbolic Systems," *Engineering & Industrial Research Station Report*, MSSU-EIRS-ASE-90-3, Mississippi State University, Mississippi State, MS, October 1990.
81. Arabshahi, A. and Whitfield, D. L., "Numerical Simulation of Supersonic Unsteady Flow for Multibody Configurations," AIAA Paper No. 91-0023, January 1991.
82. McDonald, H. and Whitfield, D. L., "Self Propelled Maneuvering Underwater Vehicles," *Proceedings of the 21<sup>st</sup> Symposium on Naval Hydrodynamics*, National Research Council, 1991, pp. 478-489.
83. Taylor, L. K. and Whitfield, D. L., "Unsteady Three-Dimensional Incompressible Euler and Navier-Stokes Solver for Stationary and Dynamic Grids," AIAA Paper No. 91-1650, June 1991.
84. Whitfield, D. L. and Taylor, L. K., "Discretized Newton-Relaxation Solution of High Resolution Flux-Difference Split Schemes," AIAA Paper No. 91-1539, June 1991.
85. Janus, J. M., Horstman, H. Z., and Whitfield, D. L., "Unsteady Flowfield Simulation of Ducted Prop-Fan Configurations," AIAA Paper No. 92-0521, January 1992.
86. Mansfield, F. A. and Whitfield, D. L., "Investigation of Solution Operators for the Two-Dimensional Unsteady Euler Equations," AIAA Paper No. 92-0050, January 1992.
87. Simpson, L. B. and Whitfield, D. L., "Flux-Difference Split Algorithm for Unsteady Thin-Layer Navier-Stokes Solutions," *AIAA Journal*, Vol. 30, No. 4, April 1992, pp. 914-922.
88. Mansfield, F. A. and Whitfield, D. L., "Investigation of Solution Operators for the Three-Dimensional Unsteady Euler Equations," AIAA Paper No. 92-2666, June 1992.
89. Whitfield, D. L., "An Implicit Solution of Roe's Approximate Riemann Solver Using True and Approximate Jacobians, Including Discretized and Sparse Matrix Updating," *Engineering & Industrial Research Station Report*, MSSU-EIRS-ERC-93-1, Mississippi State University, Mississippi State, MS, October 1992.
90. Janus, J.M., Arabshahi, A., and Whitfield, D.L., "Numerical Solution and Algorithm Analysis for the Unsteady Navier-Stokes Equations on Dynamic Multiblock Grids, Volume I," WL-TR-92-7044, Eglin Air Force Base, FL, October 1992.
91. Janus, J.M., Cox, C.F., Arabshahi, A., Cinnella, P. C., and Whitfield, D.L., "Numerical Solution and Algorithm Analysis for the Unsteady Navier-Stokes Equations on Dynamic Multiblock Grids Including Chemical Equilibrium, Volume II," WL-TR-92-7044, Eglin Air Force Base, FL, October 1992.
92. Chen, J. P. and Whitfield, D. L., "Navier-Stokes Calculations for the Unsteady Flow Field of Turbomachinery," AIAA Paper No. 93-0676, *31st AIAA Aerospace Sciences Meeting and Exhibit*, Reno, Nevada, January 1993.
93. Beddhu, M., Taylor, L.K., and Whitfield, D.L., "A Time Accurate Calculation Procedure for Incompressible Flows with a Free Surface Using a Modified Artificial Compressibility Formulation," *Mississippi State Annual Conference on Differential Equations and Computational Simulations*, Mississippi State, MS, March 1993.
94. Pankajakshan, R., Arabshahi, A., and Whitfield, D.L., "Turbofan Flowfield Simulation Using Euler Equations with Body Forces," AIAA Paper No. 93-1978, *AIAA/SAE/ASME/ASEE 29th Joint Propulsion Conference and Exhibit*, Monterey, CA, June 28-30, 1993.
95. Sreenivas, K., Whitfield, D.L., and Huff, D.L., "High Resolution Numerical Simulation of the Linearized Euler Equations in Conservation Law Form," AIAA Paper No. 93-2934, *AIAA 24th Fluids Dynamics Conference*, Orlando, FL, July 6-9, 1993.
96. Vanden, K. J. and Whitfield, D.L., "Direct and Iterative Algorithms for the Three-Dimensional Euler Equations," AIAA Paper No. 93-3378, *11th AIAA Computational Fluid Dynamics Conference*, Orlando, FL, July 6-9, 1993.
97. Taylor, L. K., Busby, J. A., Jiang, M. Y., Arabshahi, A., Sreenivas, K., and Whitfield, D. L., "Time Accurate Incompressible Navier-Stokes Simulation of the Flapping Foil Experiment," *The Proceedings Sixth*

*International Conference on Numerical Ship Hydrodynamics, Iowa City, Iowa, August 2–5, 1993, pp. 721–738.*

98. Arabshahi, A. and Whitfield, D. L., “Numerical Simulation of Supersonic Unsteady Flow for Multibody Configuration,” *International Journal of Scientific Computing and Modeling*, Vol. 1, Special Issue, December 1993, pp. 111–126.
99. Whitfield, D. L. and Taylor, L. K., “Numerical Solution of the Two-Dimensional Time-Dependent Incompressible Euler Equations,” MSSU-EIRS-ERC-93-14, April 1994.
100. Beddhu, M., Taylor, L.K., and Whitfield, D.L., “A Time Accurate Calculation Procedure for Flows with a Free Surface Using a Modified Artificial Compressibility Formulation,” *Applied Mathematics and Computation*, December 1994, pp. 33-48.
101. Sheng, C., Taylor, L., and Whitfield, D. L., “An Efficient Multigrid Acceleration for Solving the 3-D Incompressible Navier-Stokes Equations in Generalized Curvilinear Coordinates,” *AIAA Paper No. 94-2335*, 1994.
102. Beddhu, M, Jiang, M-Y., Taylor, L. K., and Whitfield, D. L., “Toward Computation of Ocean Flows Using Navier-Stokes Equations,” *Supercomputing '94 Proceedings*, IEEE Computer Society Press, 1994, pp. 144-153.
103. Whitfield, D. L., Taylor, L. K., Beddhu, M., and Arabshahi, A., “Discretized Newton-Relaxation Solution of the Three-dimensional Unsteady Incompressible Navier-Stokes Equations,” *Frontiers of Computational Fluid Dynamics*, Chapter 28, pp. 575-594, D.A. Caughey and M. M. Hafez editors, Wiley Publishing, 1994.
104. Webster, R. S., Chen, J. P., and Whitfield, D. L., “Numerical Simulation of a Helicopter Rotor in Hover and Forward Flight,” AIAA Paper No. 95–0193, *AIAA 33rd Aerospace Sciences Meeting and Exhibit*, Reno, NV, January 9–12, 1995.
105. Taylor, L. K., Arabshahi, A., and Whitfield, D. L., “Unsteady Three-Dimensional Incompressible Navier-Stokes Computations for a 6:1 Prolate Spheroid Undergoing Time-Dependent Maneuvers,” *AIAA Paper No. 95-0313, AIAA 33rd Aerospace Sciences Meeting and Exhibit*, Reno, NV, January 9–12, 1995.
106. Arabshahi, A., Taylor, L. K., and Whitfield, D. L., “UNCLE: Toward a Comprehensive Time-Accurate Incompressible Navier-Stokes Flow Solver,” *AIAA Paper No. 95-0050, AIAA 33rd Aerospace Sciences Meeting and Exhibit*, Reno, NV, January 9–12, 1995.
107. Sheng, C., Taylor, L. K., and Whitfield, D. L., “Multiblock Multigrid Solution of Three-Dimensional Incompressible Turbulent Flow About Appended Submarine Configurations,” *AIAA Paper No. 95-0203, AIAA 33rd Aerospace Sciences Meeting and Exhibit*, Reno, NV, January 9–12, 1995.
108. Whitfield, D. L., “Perspective on Applied CFD,” *AIAA Paper No. 95-0349, AIAA 33rd Aerospace Sciences Meeting and Exhibit*, Reno, NV, January 9–12, 1995.
109. Beddhu, M., Jiang, M-Y., Taylor, L.K., and Whitfield, D.L., “Computation of Steady and Unsteady Flows with a Free Surface Around the Wigley Hull,” *Mississippi State Annual Conference on Differential Equations and Computational Simulations*, Mississippi State, MS, April 1995.
110. Vanden, K. J. and Whitfield, D. L., “Direct and Iterative Algorithms for the Three-Dimensional Euler Equations,” *AIAA Journal*, Vol. 33, No. 5, May 1995, pp. 851-858.
111. Briley, W. R., Neeraramban, S. S., and Whitfield, D. L., “Implicit Lower-Upper/Approximate- Factorization Algorithms for Viscous Incompressible Flows,” *AIAA Paper No. 95-1742 - CP, 12th Computational Fluid Dynamics Conference*, San Diego, CA, June 19-22, 1995.
112. Sreenivas, K., and Whitfield, D.L., “Nonlinear (Time Domain) and Linearized (Time and Frequency domain) Solutions to the Compressible Euler Equations in Conservative Law Form,” *NASA-CR-199398*, August 1995.
113. Sheng, C., Taylor, L. K., and Whitfield, D. L., “A Multigrid Algorithm for Unsteady Incompressible Euler and Navier-Stokes Flow Computations,” *Sixth International Symposium on Computational Fluid Dynamics*, Lake Tahoe, Nevada, September 4-8, 1995.
114. Arabshahi, A. and Whitfield, D. L., “Multiblock Euler Computation of Transonic Flow about a Generic Aircraft Configuration,” *International Journal of Computational Fluid Dynamics*, Vol. 4, Numbers 3-4, September 1995, ISSN: 1061 8562 IJCCFEC, pp. 307-321.
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## Theses and Dissertations Directed and/or Major Professor

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2. James L. Thomas, "Transonic Viscous-Inviscid Interaction Using Euler and Inverse Boundary Layer Equations," PhD Dissertation, Mississippi State University, December 1983.
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