

Lafayette K. Taylor

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Education

PhD, Aerospace Engineering, Mississippi State University, 1991
MA, Mathematics, Eastern Illinois University, 1987
BA, Mathematics, Eastern Illinois University, 1985
AAS, Physics, Olney Central College, 1983

Employment

Professor, SimCenter: National Center for Computational Engineering, University of Tennessee at Chattanooga, August 2011 to Present

Research Professor, SimCenter: National Center for Computational Engineering, University of Tennessee at Chattanooga, August 2002 to July 2011

Research Professor, NSF/ERC for Computational Field Simulation (SimCenter), Mississippi State University, July 2002 to August 2002

Associate Research Professor, NSF/ERC (SimCenter), Mississippi State University, 1998 to July 2002

Assistant Research Professor, NSF/ERC (CFD Laboratory, SimCenter), Mississippi State University, 1992 to 1998

Postdoctoral Fellow, NSF/ERC (CFD Laboratory), Mississippi State University, 1991 to 1992

Graduate Research Assistant, Aerospace Engineering Department, Mississippi State University, 1987 to 1991

Teaching Assistant, Mathematics Department, Eastern Illinois University, 1985 to 1987

Academic Specialties

Mathematics of Computation
Numerical Solution of Hyperbolic Partial Differential Equations and Conservation Laws
Turbulent Flow Modeling with Computational Applications in Aerodynamics, Hydrodynamics, and Propulsion

University Service

Directed 2 Masters Theses and 3 Doctoral Dissertations
Committee Member for 5 Masters Degree students and 6 Doctoral candidates
Mentored 9 Undergraduate Student Researchers (1995-2002)
Taught Portion of Graduate Level Computational Engineering Course, 1998-2001, 2008
Mississippi State University Engineering College Faculty Council, 1994-1997

Departmental Service

Technical Integration of UTC SimCenter Research Projects, Including Student Research
Technical Input and Budget Preparation for Research Proposals
Monitor Technical Progress and Expenditures for SimCenter Research Grants
PhD Program Preliminary Examination Author for Mathematics of Computation

Advisory Positions/Honors and Awards

Invited Peer Review Panel Member for the Office of Naval Research Propulsor Hydrodynamics and Hydroacoustics Research Program, 2011

Consultant for the Chief of Naval Research, 1998-2002

Body of Knowledge Consultant for the Office of Naval Research Accelerated Hydrodynamics Initiative, 1999-2002

Project Leader, Department of Defense High Performance Computing Modernization Office (DoD HPCMO) Grand Challenge Project, 2000-2002

2000 Mississippi State University College of Engineering Faculty/Research Scientist/Engineer Award Recipient

Professional Associations

Senior Member, American Institute of Aeronautics and Astronautics

The Mathematical Association of America

Society for Industrial and Applied Mathematics

Sigma Gamma Tau, National Honor Society in Aerospace Engineering

Kappa Mu Epsilon, National Honor Society in Mathematics

Reviewer

Computers and Fluids

ASME Journal of Fluids Engineering

AIAA Journal

Theses and Dissertation Committees:

University of Tennessee at Chattanooga

1. Beasley, James	MS (Chair)	Graduated 2004
2. Hajjawi Muhanad	PhD (Chair)	Graduated 2007
3. Lambert, Brian	PhD	Graduated 2004
4. Sivakumar, Pradeep	PhD	Graduated 2006
5. Glasby, Ryan	PhD	Graduated 2011
6. Ji, Lei	PhD	Graduated 2011
7. Kress, Jessica	MS (Chair)	
8. Mittal, Anshul	PhD (Chair)	
9. McDaniel, Tony	MS	
10. Hereth, Ethan	PhD (Chair)	

Mississippi State University

11. Wang, Xiao	PhD	Graduated 2005
12. Nichols, D. Stephen	PhD	Graduated 2002
13. Cash, Allison	MS	Graduated 2002
14. Shringi, Vishwas	MS	Graduated 2001
15. Nichols, D. Stephen	MS	Graduated 1998
16. Jonnalagadda, R	MS	Graduated 1997

Sponsored Research

PI or Co-PI on research grants and contracts sponsored by Office of Naval Research, NASA, Army Research Office, National Science Foundation, Veridian ERIM, University of Michigan, Applied Research Lab/Penn State, Naval Surface Warfare Center Carderock Division, Lockheed Martin Skunk Works, Northrop-Grumman Ship Systems-Ingalls Shipbuilding, General Dynamics Corp., Department of Energy-Oak Ridge, Barber-Nichols Inc., Aerotonomy Inc., Radiance Technologies Inc., Air Force Research Lab.

Publications

Journal Articles and Book Chapters

1. Pakajakshan, R., Mitchell, B.J., and Taylor, L.K., "Simulation of unsteady two-phase flows using a parallel Eulerian-Lagrangian approach," *Original Research Article Computers & Fluids*, Volume 41, Issue 1, February 2011, Pages 20-26.
2. Sivakumar, P., Hyams, D.G., Taylor, L.K., and W.R. Briley, "A Primitive-Variable Riemann Method for Solution of the Shallow-Water Equations with Wetting and Drying," *Journal of Computational Physics*, Vol. 228, No.19, pp. 7452-7472, 2009.
3. Briley, W. R., Taylor, L. K., and D. L. Whitfield, "High-Resolution Viscous Flow Simulations at Arbitrary Mach Number," *Journal of Computational Physics*, 184(1): 79-105, 2003.
4. Lambert, B. K., Taylor, L. K., and W. R. Briley, "Evaluation of a Preconditioned Flow Solver for a Broad Range of Mach Number and Temperature Ratio," *Numerical Simulation of Incompressible Flows*, M.M. Hafez, Ed., River Edge, NJ: World Scientific Publishing Co., 2003, pp. 605-621.
5. Pankajakshan, R., Taylor, L. K., Sheng, C., Briley, W. R., and D. L. Whitfield, "Scalable Parallel Implicit Multigrid Solution of Unsteady Incompressible Flows". *Frontiers of Computational Fluid Dynamics 2000*, Edited by D. A. Caughey and M. M. Hafez, World Scientific Publishing Company PTE. LTD., Singapore, 2001.
6. Briley, W., Taylor, L., and Whitfield, D., "Scalable Flow Simulations with Rotating Components," *Navigator*, Naval Oceanographic Office: Major Shared Resource Center, Spring 2001, pp. 4-7.
7. 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," *Applied Mathematics and Computation*, 89: pp. 67-84, 1998.
8. Beddhu, M., Taylor, L. K., and Whitfield, D. L., "Strong Conservative Form of the Incompressible Navier-Stokes Equations in Rotating Frame with a Solution Procedure," *Journal of Computational Physics*, Vol. 128, No. 2, October 1996, pp. 427-437.
9. Sheng, C., Taylor, L. K., and Whitfield, D. L., "Multigrid Algorithm for Three-Dimensional Incompressible High-Reynolds Number Turbulent Flows," *AIAA Journal*, Vol. 33, No. 11, November 1995, pp. 2073-2079.
10. 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.
11. 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*, Vol. 65, 1994, pp. 33-48.

National and International Conference Papers

1. Mittal, A., Taylor, L.K., Sreenivas, K., and Arabshahi, A., "Investigation of Two Analytical Wake Models Using Data From Wind Farms," *Proceedings of the ASME 2011 International Mechanical Engineering Congress & Exposition*, Denver, Co., November 11-17, 2011.
2. Arabshahi, A., Taylor, L.K., and Whitfield, D.L. "Computation of Dynamic Stability and Control Derivatives," *AIAA-2011-3348*, 29th AIAA Applied Aerodynamic Conference, Honolulu, Hawaii, June 27-30, 2011.
3. Wilson, R., Lei, J., Karman, Jr., S., Hyams, D., Sreenivas, K., Taylor, L., and Whitfield D., 2008, "Simulation of Large Amplitude Ship Motions for Prediction of Fluid-Structure Interaction," *Proceedings of the 27th ONR Symposium on Naval Hydrodynamics*, Seoul, Korea, 5-10 Oct. 2008.
4. M. Hajjawi, L. Taylor, and S. Nichols, D, "Assessment and Modification for Reynolds Stress Transport

- Turbulence Model Flow Prediction", AIAA-2008-0568, 46th AIAA Aerospace Sciences Meeting and Exhibit, January 2008.
5. M. Hajjawi, L. Taylor, and S. Nichols, D, "Assessment of Filtered Based RANS Turbulence Model for Unsteady Separated Flow Prediction", AIAA-2008-0670, 46th AIAA Aerospace Sciences Meeting and Exhibit, January 2008
 6. Wilson, R., Nichols, S., Mitchell, B., Karman, S., Betro, V., Hyams, D., Sreenivas, K., Taylor, L., Briley, R., and Whitfield D., "Simulation of a Surface Combatant with Dynamic Ship Maneuvers," 9th Int. Conf. in Num. Ship Hydro., University of Michigan, 5-8 Aug. 2007.
 7. Pankajakshan, R., Mitchell, B.J., and Taylor, L.K., "Simulation of Unsteady Two-Phase Flows using a Parallel Eulerian-Lagrangian Approach," AIAA-2007-0340, 45th AIAA Aerospace Sciences Meeting and Exhibit, Reno, Nevada, Jan. 8-11, 2007.
 8. A. Arabshahi, K. Sreenivas, S. Nichols, B. Mitchell, L. Taylor and D. Whitfield, "Computational Analysis of Turbulent Internal Flow in Ballistic Rocket Motors," AIAA-2007-1449, 45th AIAA Aerospace Sciences Meeting and Exhibit, Reno, Nevada, Jan. 8-11, 2007.
 9. Almeida, 1 T.G., Walker 1, D.T., Leighton 1, R.I., Alajbegovic1, A., Pankajakshan 2, R., Taylor 2, L.K., Whitfield2, D.L., Ceccio3, S.L., (1General Dynamics; 2Univ. Tennessee Chattanooga; 3Univ. Michigan), "A Reynolds-Averaged Model for the Prediction of Friction Drag Reduction by Polymer Additives," 26th Symposium on Naval Hydrodynamics, Rome Italy, September. 17-22, 2006.
 10. Wilson, R.V., Nichols, D.S., Mitchell, B., Karman, S.L., Hyams, D.G., Sreenivas, K., Taylor, L.K., Briley, W.R., and Whitfield, D.L., "Application of an Unstructured Free Surface Flow Solver for High Speed Transom Stern Ships," 26th Symposium on Naval Hydrodynamics, Rome Italy, September. 17-22, 2006.
 11. K. Sreenivas, L. Taylor, and R. Briley, "A Global Preconditioner for Viscous Flow Simulations at All Mach Numbers," AIAA 2006-3852, June 2006.
 12. S. Nichols, B. Mitchell, K. Sreenivas, L. Taylor, D. Whitfield and R. Briley, "Aerosol Propagation in an Urban Environment," AIAA 2006-3726, June 2006.
 13. S. Nichols, D. Hyams, K. Sreenivas, B. Mitchell, L. Taylor, D. Whitfield, "An Unstructured Incompressible Multi-Phase Solution Algorithm", AIAA-2006-1290, 44th AIAA Aerospace Sciences Meeting and Exhibit, January 2006.
 14. K. Sreenivas, R. Pankajakshan, S. Nichols B. Mitchell, L. Taylor, D. Whitfield, "Aerodynamic Simulation of Heavy Trucks with Rotating Wheels", AIAA-2006-1394, 44th AIAA Aerospace Sciences Meeting and Exhibit, January 2006.
 15. McCallen, R., Salari, K., Ortega, J. M., Castellucci, P. J., Eastwood, C. D., Dechant, L., Hassan, B., Pointer, W. D., Browand, F., Leonard, A., Rubel, M. T., Ross, J. C., Heineck, J. T., Walker, S. M., Storms, B., Roy, C., Whitfield, D., Pankajakshan, R., Taylor, L. K., Sreenivas, K., Englar, R. J., "DOE's Effort to Reduce Truck Aerodynamic Drag Through Joint Experiments and Computations," SAE Paper 2005-01-3511, 2005 SAE Commercial Vehicle Engineering Conference, Rosemont, IL, November 2005.
 16. Taylor, L. K., Pankajakshan, R., Briley, W. R., and Whitfield, D. L., "Scalable Parallel Implicit Algorithm for Advanced Turbulence Closures," AIAA Paper No. 2005-0876, 43rd Aerospace Sciences Meeting and Exhibit, Reno, NV, January 2005.
 17. Sreenivas, K., Hyams, D. G., Nichols, D. S., Mitchell, B., Taylor, L. K., Briley, W. R., and Whitfield, D. L., "Development of an Unstructured Parallel Flow Solver for Arbitrary Mach Numbers," AIAA Paper No. 2005-0325, 43rd Aerospace Sciences Meeting and Exhibit, Reno, NV, January 2005.
 18. Briley, W. R., Pankajakshan, R., Taylor, L. K., Gorski, J. J., Slomski, J. F., Dommermuth, D. G., Rottman, J. W., Innis, G. E., "Submerged Wakes in Littoral Regions," 2003 DoD HPCMP Users Group Conference, Bellevue, WA, June, 2003.
 19. Sreenivas, K., Cash, A.N., Hyams, D.G., and Taylor, L.K., "Computational Study of Propulsor-Hull Interactions," AIAA Paper No. 2003-1262, 41st Aerospace Sciences Meeting and Exhibit, Reno, NV, January 2003.
 20. Pankajakshan, R., Taylor, L. K., Briley, W. R., and Whitfield, D. L., "Arbitrary Mach Number Flow Simulations," AIAA Paper No. 2003-1236, 41st Aerospace Sciences Meeting and Exhibit, Reno, NV, January 2003.
 21. Newman III, J.C., Pankajakshan, R., Whitfield, D.L., and Taylor, L.K., "Computational Design Using RANS," 24th Symposium on Naval Hydrodynamics, Fukuoka, Japan, July 8-13, 2002.
 22. Pankajakshan, R., Remotigue, M.G., Taylor, L.K., Jiang, M., Briley, W.R., and Whitfield, D.L., "Validation of Control-Surface Induced Submarine Maneuvering Simulations Using UNCLE," 24th Symposium on Naval Hydrodynamics, Fukuoka, Japan, July 8-13, 2002.

23. Remotigue, M.G., Pankajakshan, R., Jiang, M., Taylor, L.K., Briley, W.R., and Whitfield, D.L., "Dynamic Grid Generation for Simulation of Submarine Maneuvers: Part II," 8th International Conference on Numerical Grid Generation in Computational Field Simulations, Honolulu, Hawaii, June, 2002.
24. Sreenivas, K, Hyams, D., Mitchell, B., Taylor, L., Marcum, D., and Whitfield, D., "Computation of Vortex Intensive Incompressible Flow Fields," AIAA Paper No. 2002-3306, 32nd AIAA Fluid Dynamics Conference and Exhibit, St. Louis, MO, June 2002.
25. Sreenivas, K., Hyams, D.G., Mitchell, B., Taylor, L.K., Briley, W.R., and Whitfield, D.L., "Physics Based Simulations of Reynolds Number Effects in Vortex Intensive Incompressible Flows," Symposium of Advanced Flow Management, Applied Vehicle Technology Panel Meeting, Norway, May 2001.
26. Pankajakshan, R., Taylor, L. K., Sheng, C., Jiang, M. J., Briley, W. R., and D. L. Whitfield, "Parallel Efficiency in Implicit Multiblock, Multigrid Simulations, with Application to Submarine Maneuvering". AIAA Paper 2001-1093, 39th Aerospace Sciences Meeting Conference and Exhibit, Reno, NV, January 2001.
27. Pankajakshan, R., Taylor, L.K., Jiang, M., Remotigue, M.G., Briley, W.R., and Whitfield, D.L., "Parallel Simulations for Control-Surface Induced Submarine Maneuvers," Proc., 38th Aerospace Sciences Meeting & Exhibit, AIAA Paper No. 2000-0962, Reno, NV, January 2000.
28. Jiang, M., Pankajakshan, R., Remotigue, M.G., and Taylor, L.K. "Dynamic Grid Generation for the Simulation of Submarine Maneuvers," Numerical Grid Generation in Computational Field Simulations. Proceedings of the 7th International Grid Conference, Whistler, British Columbia, September 2000.
29. Hyams, D.G., Sreenivas, K., Sheng, C., Nichols, S., Taylor, L.K., Briley, W.R., and Whitfield, D.L., "An Unstructured Multielement Solution Algorithm for Complex Geometry Hydrodynamic Simulations," 23rd Symposium on Naval Hydrodynamics, Val de Reuil, France, September 2000.
30. Beddhu, M., Pankajakshan, R., Jiang, M. Y., Taylor, L. K., Remotigue, M. G., Briley, W. R. and Whitfield, D. L., "Computation and Evaluation of CFD Results for Practical Ship Hull Forms," Workshop on CFD in Ship Hydrodynamics, Gothenburg, Sweden, Sept. 14-16, 2000.
31. Beddhu, M., Pankajakshan, R., Jiang, M. Y., Taylor, L. K., Briley, W. R. and Whitfield, D. L., "Computation of Nonlinear Turbulent Free Surface Flows using the Parallel UNCLE code," 23rd Symposium on Naval Ship Hydrodynamics, Val de Reuil, France, September 17-22, 2000.
32. Beddhu, M., Jiang, M. Y., Whitfield, D. L., and Taylor, L. K., A., "Computation of the Wetted Transom Stern Flow Over Model 5415," Presented in the Seventh International Conference on Numerical Ship Hydrodynamics, Nantes, France, July 19-22, 1999.
33. Arabshahi, A., Beddhu, M., Briley, W.R., Chen, J.P., Gaither, A., Gaither, K., Janus, J.M., Jiang, M., Marcum, D., McGinley, J., Pankajakshan, R., Remotigue, M., Sheng, C., Sreenivas, K., Taylor, L.K., and Whitfield, D.L., "A Perspective on Naval Hydrodynamic Flow Simulations," Presented at the 22nd Symposium on Naval Hydrodynamics, Washington, D.C., August 9-14, 1998.
34. Busby, J.A., Taylor, L. K., Jiang, M.Y., and Whitfield, D.L., "Unsteady 3-D Incompressible Flow Interaction in Multiple Blade-Row Turbomachinery," AIAA Paper No. 98-0423, *AIAA 36th Aerospace Sciences Meeting and Exhibit*, Reno, NV, January 12-15, 1998.
35. Beddhu, M., Jiang, M. Y., Whitfield, D. L., Taylor, L. K. and Arabshahi, A., "CFD Validation of the Free Surface Flow Around DTMB Model 5415 Using Reynolds Averaged Navier-Stokes Equations," Third Osaka Colloquium on Advanced CFD Applications to Ship Flow and Hull Form Design, Osaka, Japan, May 25-27, 1998.
36. Taylor, L.K., Pankajakshan, R., Jiang, M., Sheng, C., Briley, W.R., Whitfield, D.L., Davoudzadeh, F., Boger, D.A., Gibeling, H.J., Gorski, J., Haussling, H., Coleman, R., and Buley G., "Large-Scale Simulations for Maneuvering Submarines and Propulsors," AIAA Paper No. 98-2930, 29th AIAA Plasmadynamics and Lasers Conference, Albuquerque, NM, June 15-18, 1998.
37. Davoudzadeh, F., Taylor, L. K., Zierke, W. C., Dryer, J. J., and Whitfield, D. L., "Coupled Navier-Stokes and Equations of Motion Simulation of Submarine Maneuvers, Including Crashback," FEDSM97-3129, *1997 ASME Fluids Engineering Division Summer Meeting*, Vancouver, British Columbia, Canada, June 22-26, 1997.
38. Dryer, J. J., Taylor, L. K., Zierke, W. C. and Davoudzadeh, F., "A First-Principle Approach to the Numerical Prediction of the Maneuvering Characteristics of Submerged Bodies," *FEDSM97-3130, 1997 ASME Fluids Engineering Division Summer Meeting*, Vancouver, British Columbia, Canada, June 22-26, 1997.
39. Sheng, C., Chen, J.P., Taylor, L. K., Jiang, M.Y., and Whitfield, D.L., "Unsteady Multigrid Method for Simulating 3-D Incompressible Navier-Stokes Flows on Dynamic Relative Motion Grids," AIAA Paper No. 97-0446, *AIAA 35th Aerospace Sciences Meeting and Exhibit*, Reno, NV, January 6-10, 1997.

40. Jonnalagadda, R., Taylor, L. K., and Whitfield, D. L., "Multiblock Multigrid Incompressible RANS Computation of Forces and Moments on Appended SUBOFF Configurations at Incidence," AIAA Paper No. 97-0624, *AIAA 35th Aerospace Sciences Meeting and Exhibit*, Reno, NV, January 6-10, 1997.
41. Taylor, L. K. and Whitfield, D. L., "Investigation of the Accuracy of an Unsteady Incompressible Euler Equation Algorithm," Proceedings of the *International Conference on Scientific Computing and Modeling*, Eastern Illinois University, October 1995.
42. Sheng, C., Taylor, L. K., and Whitfield, D. L., "A Multigrid Algorithm for Unsteady Incompressible Euler and Navier-Stokes Flow Computations," Proceedings of the *Sixth International Symposium on Computational Fluid Dynamics*, Lake Tahoe, Nevada, September 4-8, 1995.
43. 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.
44. Arabshahi, A., Taylor, Lafayette 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.
45. 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.
46. Taylor, Lafayette 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.
47. Beddhu, B., 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, November 1994, pp. 144-153.
48. Sheng, C., Taylor, L., and Whitfield, D. L., "An Efficient Multigrid Acceleration for Solving the 3-D Incompressible Navier-Stokes Equations in Generalized Curvilinear Coordinated," *AIAA-94-2335, 25th AIAA Fluid Dynamics Conference*, Colorado Springs, CO, June, 1994.
49. 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.
50. 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.
51. Taylor, L. K., and David L. Whitfield. "Unsteady Three-Dimensional Incompressible Euler and Navier-Stokes Solver for Stationary and Dynamic Grids." *AIAA-91-1650, 22nd Fluid Dynamics, Plasma Dynamics & Lasers Conference*, Honolulu, Hawaii, June 1991.
52. Whitfield, D. L., and L. K., Taylor. "Discretized Newton-Relaxation Solution of High Resolution Flux-Difference Split Schemes." *AIAA Paper No. 91-1539, 22nd Fluid Dynamics, Plasma Dynamics & Lasers Conference*, Honolulu, Hawaii, June 1991.

Technical Reports

1. Sreenivas, K., Taylor, Lafayette K., Briley, W. Roger, "Unsteady Flow Simulations for an Aeronomy-Designed Synthetic-Jet Airfoil," UTC-CECS-SimCenter-2009-02-R, June 2009.
2. Sivakumar, P., Hyams, D.G., Taylor, L.K., and Briley, W.R., "Primitive-Variable Riemann Fluxes for Solution of the Shallow Water Equations with Embedded Wet/Dry Interfaces," UTC-CECS-SimCenter-2008-06, November 2008.
3. Whitfield, D. L., Pankajakshan, R., Sreenivas, K., and Taylor, L.K., "Numerical Derivatives, Matrix-Vector Product, and Richardson Extrapolation Using Complex Variables," UTC-CECS-SimCenter-2008-01, March 2008.
4. K. Sreenivas, D. G. Hyams, C. O. E. Burg, B. J. Mitchell, C. Sheng, B. Jayaraman, R. Pankajakshan, W. H. Brewer, D. S. Nichols III, L. K. Taylor, M. G. Remotigue, X. Wang, M. Y. Jiang, K. P. Gaither, A. Gaither, H. L. Beeland, J. C. Newman III, D. L. Marcum, W. R. Briley, D. L. Whitfield: Computational Engineering Research Supporting the Analysis and Design of Marine and Aerospace Vehicles. MSU Report No. MSSU-COE-ERC-02-09 (ONR Grant N00014-99-1-0751), May 2002.
5. Sreenivas, K., Hyams, D. G., Sheng, C., Jayaraman, B., Wang, X., Mitchell, B., Jiang, M. Y., Pankajakshan, R., Taylor, L. K., Gaither, K. P., Gaither, A., Beeland, H., Marcum, D. L., Briley, W. R., and D. L. Whitfield:

Physics-Based Maneuvering Simulations for Tiltrotor Aircraft. MSU Report No. MSSU-COE-ERC-02-06 (NASA-ARC Grant NAG2-1232), April 2002.

6. Briley, W. R., Taylor L.K., and Whitfield, D. L., "High-Resolution Viscous Flow Simulations at Arbitrary Mach Number," MSSU-COE-ERC-01-04, March 2001.
7. Lorenzo, L., Sreenivas, K. Mitchell, B., and Taylor, L.K., "Computation of Forces and Moments for the Airship AKRON and SUBOFF Using U2NCLE," MSSU-COE-ERC-01-11, October 2001.
8. Donatello, D., Sreenivas, K., and Taylor, L.K., "Computation of Unsteady Forces And Moments for SUBOFF Undergoing Prescribed Maneuvers Using U2NCLE," MSSU-COE-ERC-01-12, October 2001.
9. Hyams, D.G., Sreenivas, K., Taylor, L.K., and Whitfield, D.L., "Incompressible Unstructured RANS Simulations for a Low Speed Centrifugal Compressor Using U2NCLE," MSSU-COE-ERC-01-10, October 2001.
10. Taylor, L.K. and Whitfield, D.L., "Variants of a Two-Level Method for the Approximate Numerical Solution of Field Simulation Equations," MSSU-EIRS-ERC-98-09, July 1998.
11. Beddhu, M., Jiang, M-Y., Whitfield, D.L., Taylor, L.K., and Arabshahi, A., "Computational Physical Oceanography- A Comprehensive Approach Based on Generalized CFD/Grid Techniques for Planetary Scale Simulations of Oceanic Flows," MSSU-EIRS-ERC-97-5, March 1997.
12. Boger, D.A., Davoudzadeh, F., Dreyer, J.J., McDonald, H., Schott, C.G., Zierke, W.C., Arabshahi, A., Briley, W.R., Busby, J.A., Chen, J.P., Jiang, M.Y., Jonnalagadda, R., McGinley, J., Pankajakshan, R., Sheng, C., Stokes, M.L., Taylor, L.K., and Whitfield, D.L., "A Physics-Based Means of Computing the Flow Around a Maneuvering Underwater Vehicle," Technical Report No. TR 97-002, Applied Research Laboratory, Penn State University, January 1997.
13. Sheng, C., Taylor, L.K., Chen, J-P, Jiang, M-Y., and Whitfield, D.L., "Multigrid Computations of 3-D Incompressible Internal and External Viscous Rotating Flows," MSSU-EIRS-ERC-96-1, February 1996.
14. 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.