

Daniel G. Hyams

Education

PhD, Mechanical Engineering, Mississippi State University, 2000
MS, Mechanical Engineering, Clemson University, 1996
BS, Mechanical Engineering, Minor in Mathematics, Mississippi State University, 1994

Employment

Associate Professor, SimCenter: National Center for Computational Simulation, University of Tennessee at Chattanooga, 2009 to present. Tenure-track position.

Associate Research Professor, SimCenter: National Center for Computational Simulation, University of Tennessee at Chattanooga, 2002 to 2009

Assistant Research Professor, Computational Simulation and Design Center, Mississippi State University, 2000 to 2002

Research Assistant I, Engineering Research Center, Mississippi State University, 1999 to 2000

Undergraduate Research Assistant, MSU-ERC, Mississippi State University, September 1993 to December 1994

Undergraduate Research Assistant, Clemson University, May 1993 to August 1993

Experimental Technician, Mississippi State University, September 1992 to December 1992

University Service

ENCM 521, Introduction to Parallel Algorithms, Graduate, University of Tennessee at Chattanooga
ENCM 590, Advanced Programming for Physical Simulations, Graduate, University of Tennessee at Chattanooga
ENCM 723, Parallel Scientific Computing, Graduate, University of Tennessee at Chattanooga
Graduate Committee Chair for 1 PhD student, 2 Master's students
Graduate Committee Member for 5 PhD students, 4 Master's students

Academic Specialties

Unstructured Grid Technologies
Parallel Grid Generation
Parallel Algorithms
Integrated Simulation Systems
User Interfaces
Python Integration and Automation

Honors and Awards

Honda Fellowship, Mississippi State University, 1997 to Present
Clemson Fellow, Clemson University, 1995 to 1996
President's List, Mississippi State University, all semesters 1990 to 1994
Freshman Excellence Scholarship, Mississippi State University, 1990 to 1994
Who's Who Among American Universities and Colleges, 1994
Recipient of Nuclear Scholarship Award

Reviewer

AIAA Journal

ASME Journal of Turbomachinery

Recent Publications

1. D. G. Hyams and G. M. Fadel, "Comparison of Various Move Limit Strategies in Structural Optimization," AIAA Paper 94-1359, 35th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Materials Conference, Hilton Head, SC, Apr. 18-20, 1994.
2. D. G. Hyams, K. T. McGovern, and J. H. Leylek, "Effects of Geometry on Slot-Jet Film Cooling Performance," ASME Paper No. 96-GT-187, 1996
3. D. G. Hyams and J. H. Leylek, "A Detailed Study of Film Cooling Flow Physics: Part III -- Streamwise Injection With Shaped Holes," *Journal of Turbomachinery*, Vol. 122, No. 1, January 2000.
4. C. Sheng, D. G. Hyams, K. Sreenivas, A. Gaither, D. Marcum, D. Whitfield, and W. K. Anderson, "Three-Dimensional Incompressible Navier-Stokes Flow Computations About Complete Configurations Using a Multiblock Unstructured Grid Approach," AIAA Paper 99-0778, 37th AIAA Aerospace Sciences Meeting and Exhibit, Reno, NV, January 1999.
5. D. G. Hyams, "An Investigation of Parallel Implicit Solution Algorithms for Incompressible Flows on Unstructured Topologies," AIAA Paper 2000-0271, 38th AIAA Aerospace Sciences Meeting and Exhibit, Reno, NV, January 2000.
6. D. G. Hyams, "An Investigation of Parallel Implicit Solution Algorithms for Incompressible Flows on Unstructured Topologies," Ph.D. Thesis, Mississippi State University, May 2000.
7. D. Hyams, K. Sreenivas, C. Sheng, S. Nichols, L. Taylor, R. Briley, D. Marcum, and D. Whitfield, "An Unstructured Multielement Solution Algorithm for Complex Geometry Hydrodynamic Simulations", *Proceedings of the 23rd Symposium on Naval Hydrodynamics*, Val de Reuil, France, September 17-22, 2000.
8. K. Gaither, K. Sreenivas, D. Hyams, and H. McDonald, "Large-Scale Visualization and Animation of Computational Fluid Dynamics Simulations", *Proceedings of the 9th International Symposium of Flow Visualization*, Edinburgh, Scotland, August 2000.
9. D. Marcum, B. Mitchell, K. Sreenivas, and D. Hyams, "Unstructured Grid Generation for Large-Scale CFD Applications," *ECCOMAS Computational Fluid Dynamics Conference 2001*, University of Wales, Swansea, Wales, UK, Sept. 2001.
10. D. Marcum, B. Mitchell, K. Sreenivas, and D. Hyams, "Unstructured Grid Generation for Large-Scale CFD Applications," *1st MIT Conference On Computational Fluid and Solid Mechanics*, Massachusetts Institute Of Technology, Cambridge, MA, June 2001.
11. K. Sreenivas, D. G. Hyams, B. Mitchell, L. K. Taylor, W. R. Briley, and D. L. Whitfield, "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.
12. Burg, C. O. E., Sreenivas, K., Hyams, D. G., and Mitchell, B., "Unstructured Nonlinear Free Surface Flow Solutions: Validation and Verification," *32nd AIAA Fluid Dynamics Conference and Exhibit*, St. Louis, MO, June 2002.
13. Sreenivas, K, Hyams, D., Mitchell, B., Taylor, L., Marcum, D., and Whitfield, D., "Computation of Vortex Intensive Incompressible Flow Fields," *32nd AIAA Fluid Dynamics Conference and Exhibit*, St. Louis, MO, June 2002.
14. C. Burg, K. Sreenivas, D. G. Hyams, and B. Mitchell. "Unstructured Nonlinear Free Surface Simulations for the Fully-appended Surface Combatant including Rotating Propulsors." *Proceedings of the 24th Symposium on Naval Hydrodynamics*, July 2002, Fukuoka, Japan.
15. 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.
16. Blades, E., Sreenivas, K., and Hyams, D.G., *Arbitrary Overlapping Interfaces for Unsteady Unstructured Parallel Flow Simulations*, AIAA Paper No. 2003-0276, 41st Aerospace Sciences Meeting and Exhibit, Reno, NV, January 2003.
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. 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.

19. D. Hyams, K. Sreenivas, and D. Whitfield, "Parallel FAS Multigrid for Arbitrary Mach Number, High Reynolds Number Unstructured Flow Solvers," AIAA-2006-2821, June 2006
20. 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.
21. K. Sreenivas, B. Mitchell, S. Sawyer, S. Karman, S. Nichols, and D. Hyams, "Computational Prediction of Forces and Moments for Transport Aircraft," AIAA-2007-1088, 45th AIAA Aerospace Sciences Meeting and Exhibit, Reno, Nevada, Jan. 8-11, 2007.
22. K. Sreenivas, S. Nichols, D. Hyams, B. Mitchell, S. Sawyer, and D. Whitfield, "Computational Simulation of Heavy Trucks," AIAA-2007-1087, 45th AIAA Aerospace Sciences Meeting and Exhibit, Reno, Nevada, Jan. 8-11, 2007.
23. Sreenivas, K., Mitchell, B., Nichols, D.S., Hyams, D.G., and Whitfield, D.L., "Computational Simulation of the GCM Tractor-Trailer Configuration," Aerodynamics of Heavy Vehicles II: Trucks, Buses, and Trains, Lake Tahoe, August 2007.
24. 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.
25. 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.
26. 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.
27. P. Sivakumar, D. Hyams, L. K. Taylor, 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, pp. 7452-7472, 2009.
28. D. Hyams, K. Sreenivas, R. Pankajakshan, D. S. Nichols, W. R. Briley, and D. L. Whitfield, "Computational Simulation of Model and Full Scale Class 8 Trucks with Drag Reduction Devices", paper pending to Computers and Fluids, 2009.