

Li Wang

Education

PhD, Mechanical Engineering, University of Wyoming, 2009
MS, Mechanical Engineering, Hebei University of Technology, China, 2003
BS, Mechanical Engineering, Hebei University of Technology, China, 2000

Employment

Research Assistant Professor, SimCenter at University of Tennessee at Chattanooga, October 2009 to Present
Post-Doctoral Research Associate, SimCenter at University of Tennessee at Chattanooga, July 2009 to September 2009
Visiting Researcher, The National Center for Atmospheric Research (NCAR), June 2008 to August 2008
Research Assistant, Computational Fluid Dynamics Lab, University of Wyoming, January 2004 to May 2009

Professional and Academic Activities

Associate Member of the AIAA Applied Aerodynamics Technical Committee (TC), 2011-2014
Technical Co-Chair for the 31st AIAA Applied Aerodynamics Conference, San Diego, CA, 2013
Session Chair at the 51st AIAA Aerospace Sciences Meeting, January 2013.
Session Chair at the 42nd AIAA Fluid Dynamics Conference, June 2012.
Session Chair at the 49th AIAA Aerospace and Science Meeting, January 2011.
Graduate Committee Member for 3 PhD and 3 master students at University of Tennessee at Chattanooga.

Reviewer

AIAA Journal
Computers & Fluids
Applied Numerical Mathematics
Advances in Applied Mathematics and Mechanics
Journal of Computational and Applied Mathematics
Journal of Advances in Applied Mathematics and Mechanics
Advances in Water Resources
AIAA Aerospace Sciences Meetings and Applied Aerodynamics Conferences

Academic Activities and Specialties

Teaching activities: ENGR 3030 Thermodynamics
High-order accurate computational fluid dynamics methods
Discrete Adjoint Methods
Error Estimation and Mesh Adaptations
Sensitivity Calculation and Design Optimizations
Electromagnetic and Aeroacoustic Simulation and Design

Publications

1. Li Wang, W.K. Anderson and T. Erwin, "A High-order Discontinuous Galerkin Method for Computation of Turbulent Flows", AIAA Journal, In review, 2014.
2. T. Erwin, W.K. Anderson, Li Wang and S. Kapadia, High-order Finite Element Method for Three-Dimensional Turbulent Navier-Stokes, In review, 2014.
3. Li Wang, W.K. Anderson, T. Erwin and S. Kapadia, "Discontinuous Galerkin and Petrov Galerkin Methods for Compressible Viscous Flows", Computers and Fluids, Vol. 100, pp. 13-29, 2014.
4. Li Wang, W.K. Anderson, Kapadia, S. and Taylor, L.K., "Multiscale Large Eddy Simulation of Turbulence Using High-Order Finite Element Methods," 7th AIAA Theoretical Fluids Mechanics Conference, Atlanta, GA, June 2014, AIAA Paper 2014-3211.

5. Li Wang, W. K. Anderson, Taylor Erwin and Sagar Kapadia, "High-order Methods for Solutions of Three-dimensional Turbulent Flows," AIAA Paper 2013-0856, 51st AIAA Aerospace Sciences Meeting, Dallas, TX, January, 2013.
6. Ryan Glasby, Nicholas Burgess, W. Kyle Anderson, Li Wang, Dimitri Mavriplis and Steven Allmaras, "Comparison of SU/PG and DG Finite-Element Techniques for the Compressible Navier-Stokes Equations on Anisotropic Unstructured Meshes," AIAA paper 2013-0691, 51st AIAA Aerospace Sciences Meeting, Dallas, TX, January, 2013.
7. Taylor Erwin, W. Kyle Anderson, Sagar Kapadia and Li Wang, "Three Dimensional Stabilized Finite Elements for Compressible Navier-Stokes", AIAA Journal, 51(6), pp. 1404-1419, 2013.
8. Li Wang and W. Kyle Anderson, "Shape Sensitivity Analysis for the Compressible Navier-Stokes Equations Via Discontinuous Galerkin Methods", *Computers & Fluids*, Vol. 69, pp. 93-107, 2012.
9. Li Wang, W. Kyle Anderson and Taylor Erwin, "Solutions of High-order Methods for Three-dimensional Viscous Flows", AIAA paper 2012-2836, 42nd AIAA Fluid Dynamics Conference, New Orleans, LA, 2012.
10. Li Wang and W. Kyle Anderson, "Sensitivity Analysis for the Compressible Navier-Stokes Equations Using A Discontinuous Galerkin Method", AIAA-2011-3408, 20th AIAA Computational Fluid Dynamics Conference, Honolulu, HI, 2011.
11. Taylor Erwin, W. Kyle Anderson, Sagar Kapadia and Li Wang, "Three Dimensional Stabilized Finite Elements for Compressible Navier-Stokes", AIAA-2011-3411, 41st AIAA Fluid Dynamics Conference, Honolulu, HI, 2011.
12. W. Kyle Anderson, Li Wang, Sagar Kapadia, Craig Tannis and Bruce Hilbert, "Petrov-Galerkin and Discontinuous-Galerkin Methods for Time-Domain and Frequency-Domain Electromagnetic Simulations", *Journal of Computational Physics*, Vol. 230, Issue 23, pp. 8360-8385, 2011.
13. Li Wang and W. Kyle Anderson, "Adjoint Based Shape Optimization for Electromagnetic Problems Using Discontinuous Galerkin Methods", *AIAA Journal*, Vol. 49, No. 6, pp. 1302-1305, 2011.
14. Li Wang, Dimitri J. Mavriplis and W. Kyle Anderson, "Unsteady Discrete Adjoint Formulation for High-order Discontinuous Galerkin Discretizations in Time-dependent Flow Problems", AIAA paper 2010-367, 48th AIAA Aerospace Science Meeting, January 2010.
15. Li Wang, Dimitri J. Mavriplis and W. Kyle Anderson, "Adjoint Sensitivity Formulation for Discontinuous Galerkin Discretizations in Unsteady Inviscid Flow Problems", *AIAA Journal*, Vol. 48, No. 12, pp. 2867-2883, 2010.
16. Li Wang and Dimitri J. Mavriplis, "Adjoint-based h - p Adaptive Discontinuous Galerkin Methods for the 2D Compressible Euler Equations", *Journal of Computational Physics*, Vol. 228 (20), pp. 7643-7661, 2009.
17. Dimitri J. Mavriplis, Cristian Nastase, Li Wang, Khosro Shahbazi and Nicholas Burgess, "Progress in High-order Discontinuous Galerkin Methods for Aerospace Applications", AIAA-2009-0601, 2009.
18. Li Wang and Dimitri J. Mavriplis, "Adjoint-based h - p Adaptive Discontinuous Galerkin Methods for the Compressible Euler Equations", AIAA paper 2009-0952, 2009.
19. Li Wang and D. J. Mavriplis, "Implicit Solution of the Unsteady Euler Equations for High-order Accurate Discontinuous Galerkin Discretizations", *Journal of Computational Physics*, Vol. 225 (2), pp. 1994-2015, 2007.
20. Li Wang and D. J. Mavriplis, "Implicit Solution of the Unsteady Euler Equations for High-order Accurate Discontinuous Galerkin Discretizations", AIAA paper 2006-0109, 2006.

Presentations (Selected)

1. Li Wang, "Towards Accurate and Efficient Simulation and Design Using High-Order CFD Methods", Modern Techniques for Aerodynamic Analysis and Design, 2014 CFD Summer School, Invited Talks, Beijing, China, July 7-11, 2014.
2. Li Wang, W.K. Anderson, Kapadia, S. and Taylor, L.K., "Multiscale Large Eddy Simulation of Turbulence Using High-Order Finite Element Methods," 7th AIAA Theoretical Fluids Mechanics Conference, Atlanta, GA, June, 2014.
3. Li Wang, W. K. Anderson, Taylor Erwin and Sagar Kapadia, "High-order Methods for Solutions of Three-dimensional Turbulent Flows," AIAA Paper 2013-0856, 51st AIAA Aerospace Sciences Meeting, Dallas, TX, January, 2013.
4. Li Wang, W. Kyle Anderson, Taylor Erwin and Sagar Kapadia, "Solutions of High-order Methods for Three-dimensional Compressible Viscous Flows", presented at the 42nd AIAA Fluid Dynamics Conference, New Orleans, LA, June 2012.
5. Li Wang and W. Kyle Anderson, "Sensitivity Analysis for the Compressible Navier-Stokes Equations Using A Discontinuous Galerkin Method", presented at the 41st AIAA Fluid Dynamics Conference and Exhibit, Honolulu, Hawaii, June 2011.
6. Li Wang, Dimitri J. Mavriplis and K. W. Anderson, "Unsteady Discrete Adjoint Formulation for High-order Discontinuous Galerkin Discretizations in Time-dependent Flow Problems", presented at the 48th AIAA Aerospace Science Meeting, Orlando, FL, January 2010.

7. Li Wang, "Techniques for High-order Adaptive Discontinuous Galerkin Discretizations in Fluid Dynamics", invited presentation delivered at the 2nd NCAR-Wyoming Workshop, Boulder, CO, May 2009.
8. Li Wang, Amik St-Cyr and Dimitri J. Mavriplis, "High-order Limiting for Conservation Laws Based on Total Variation Denoising", presented at the SIAM Conference on Computational Science and Engineering (CSE09), Miami, FL, March 2009.
9. Li Wang and Dimitri J. Mavriplis, "Adjoint-based h-p Adaptive Discontinuous Galerkin Methods for the Compressible Euler Equations", presented at the 47th AIAA Aerospace Science Meeting, Orlando, FL, January 2009.
10. Li Wang and Dimitri J. Mavriplis, "Goal-oriented hp-adaptive Discontinuous Galerkin Methods for the Compressible Euler Equations on Unstructured Meshes", presented at the 10th Copper Mountain Conference on Iterative Methods, Copper Mountain, CO, April 2008.
11. Li Wang and Dimitri J. Mavriplis, "Implicit Solution of the Unsteady Euler Equations for High-order Accurate Discontinuous Galerkin Discretizations", presented at the 44th AIAA Aerospace Sciences Meeting and Exhibit, Reno, NV, January 2006.