

Curriculum Vitae

CHI YANG

PERSONAL INFORMATION

Address: Department of Computational and Data Sciences
College of Science
George Mason University
MS 6A2, 4400 University Drive
Fairfax, Virginia 22030-4444

Phone: 1-703-993-4077
Fax: 1-703-993-9300
E-mail: cyang@gmu.edu

PRESENT POSITION

Associate Professor of Computational Fluid Dynamics, Center for Computational Fluid Dynamics, Department of Computational and Data Sciences, College of Science, George Mason University, Fairfax, Virginia.

EDUCATION

- Ph.D.** Naval Architecture and Ocean Engineering, Shanghai Jiao Tong University, Shanghai, P. R. China, January 1988.
Dissertation Topic: Time-domain Calculations of Three-Dimensional Wave Forces
Dissertation Advisor: Professor Yingzhong Liu
- B.S.** Naval Architecture and Ocean Engineering, Shanghai Jiao Tong University, Shanghai, P. R. China, July 1982.
Thesis Topic: Numerical Calculation of Hydrodynamic Coefficients and Motion Responses of a Ship with Initial Heeling Angle in Regular Waves
Thesis Advisor: Professor Yingzhong Liu

EMPLOYMENT

Associate Professor (tenure-track position, **tenured** in May 2005), School of Computational Sciences, George Mason University, Fairfax, Virginia (August 2002 – present).

Research Associate Professor, School of Computational Sciences, George Mason University, Fairfax, Virginia (November 2000 – July 2002).

Research Assistant Professor, Institute for Computational Sciences and Informatics, George Mason University, Fairfax, Virginia (January 1994 – October 2000).

Research Scientist, Assistant Research Professor, Department of Civil, Mechanical and Environmental Engineering, The George Washington University, Washington, D.C. (November 1991 – December 1993).

Postdoctoral Fellow, Department of Ocean Engineering, University of Hawaii, Honolulu, Hawaii (March 1990 – October 1991).

Lecturer, Department of Naval Architecture and Ocean Engineering, Shanghai Jiao Tong University, Shanghai, China (January 1988 – February 1990).

HONORS AND AWARDS

Best Paper Award, from the International Society of Offshore and Polar Engineers (ISOPE) at its 16th annual ISOPE Conference (ISOPE 2006) held in San Francisco, May 28-June 2, 2006, on behalf of all authors (Francis Noblesse, NSWCCD, Rommel Espinosa, Chi Yang and Rainald Löhner, George Mason University) for the paper originally presented at the 15th Annual ISOPE Conference (ISOPE 2005), held in Seoul, June 19-24, 2005, in recognition of its outstanding originality and significance. Its 15th Annual Conference involved participants from 47 nations, sitting on 93 sessions and 3 plenary sessions. The paper was selected as the best paper among 471 peer-reviewed papers presented.

Ministry of Education of China's Cheung-Keung Endowed Professorship award, Ministry of Education of China, 2005.

Ministry of Education of China's National Best Textbook Award, Ministry of Education of China, 1996. Co-author of the textbook “Computational Ship Hydrodynamics”, Shanghai Jiao Tong University Press, 1992 (in Chinese).

Young Investigator Award, National Natural Science Foundation of China, 1989.

RESEARCH ACTIVITIES

Computational Fluid Dynamics (Finite Element Method)

- Steady Flow about a Mono-hull or a Multi-hull Ship
- Large-Amplitude Ship Motion due to Extreme Waves

- Coupling of Sloshing and Ship Motion
- Flow Structure around a Submarine
- Aerodynamics and Hydrodynamics of Flying Fish
- Blast Simulation
- Hypersonic Store Separation

Computational Fluid Dynamics (Boundary Element Method)

- Fourier-Kochin and Neumann-Michell Theory for Free Surface Flows
- Far-field Waves
- Time-Domain Wave-Body Interaction
- Frequency-Domain Ship Motion

Computational Structural Dynamics (Finite Element Method)

- Car Crash Analysis
- Large Structural Deformation under Dynamic Loads

CFD-CSD Coupling

- Blast Simulations to Assess the Survivability of the Arsenal Ship
- Shock and Structure Interaction

Shape Optimization

- Hydrodynamic Optimization of a Mono-Hull Ship
- Hydrodynamic Optimization of a Multi-Hull Ship

PUBLICATIONS

Book

Wang, X., Zhou, C., Chen, Z., Yang, C. and Liu, Y. "Computational Ship Hydrodynamics", *textbook*, Shanghai Jiao Tong University Press, 1992 (in Chinese). (Note: The order of authors was arranged according to the chapters written by the authors. This book is used as a standard textbook for all graduate students majoring in Naval Architecture and Ocean Engineering in China).

Refereed Publications in Journals

- 1) Noblesse, F. and Yang, C. "Elementary Water Waves," *Journal of Engineering Mathematics*, Vol. 59, No. 3, November 2007, pp 277-299 (online first, DOI: 10.1007/s 10665-006-9115-5, January 2007, pp. 1-23).

- 2) Löhner, R., Yang, C., and Onate, E. "Simulation of Flows with Violent Free Surface Motion and Moving Objects Using Unstructured Grids," *International Journal for Numerical Methods in Fluids*, Vol. 53, 2007, pp. 1315-1338.
- 3) Noblesse, F., Yang, C., Espinosa, R. and Löhner, R. "Fundamental Wavenumbers of Diffraction-Radiation by a Ship That Advances Through Regular Waves in Finite Water Depth," *International Journal of Polar and Offshore Engineering*, Vol. 16, No. 4, December 2006, pp. 241-252.
- 4) Yang, C., Löhner, R and Lu, H. "An Unstructured-Grid Based Volume-of-Fluid Method For Extreme Wave and Freely-Floating Structure Interactions," *Journal of Hydrodynamics*, Vol. 18, No. 3, S. 1, 2006, pp. 415-422.
- 5) Löhner, R., Yang, C., and Onate, E. "On the Simulation of Flows with Violent Free Surface Motion," *Computer Methods in Applied Mechanics and Engineering*, Vol. 195, Issues 41-43, August 2006, pp. 5597-5620.
- 6) Löhner, R., Yang, C., Cebal, J., Camelli, F., Soto, O. and Waltz, J. "Improving the Speed and Accuracy of Projection-Type Incompressible Flow Solvers," *Computer Methods in Applied Mechanics and Engineering*, Vol. 195, Issues 23-24, April 2006, pp. 3087-3109.
- 7) Yang, C., Lohner, R. and Noblesse, F. "Comparison of Classical and Weakly Singular Representations of Free-Surface Potential Flows," *International Journal of Polar and Offshore Engineering*, Vol. 15, No. 4, December 2005, pp. 241-248.
- 8) Yang, C., Lohner, R. and Noblesse, F. "Comparison of Classical and Simple Free-Surface Green Functions," *International Journal of Polar and Offshore Engineering*, Vol. 14, No. 4, December 2004, pp. 257-264.
- 9) Soto, O., Lohner, R. and Yang, C. "An Adjoint-Based Design Methodology for CFD Problems," *International Journal of Numerical Methods for Heat & Fluid Flow*, Vol.18, No. 6, 2004, pp. 734-759.
- 10) Lohner, R., Cebal, J., Yang, C., Baum, J.D., Mestreau, E., Charman, C. and Pelessone, D. "Large-Scale Fluid-Structure Interaction Simulations," *Computing in Science and Engineering*, May/June, 2004, pp. 27-37.
- 11) Noblesse, F. and Yang, C. "Weakly Singular Boundary-Integral Representations of Free-Surface Flows about Ships or Offshore Structures," *Journal of Ship Research*, Vol. 48, No. 1, 2004, pp. 31-44.
- 12) Noblesse, F. and Yang, C. "A Simple Green Function for Diffraction-Radiation of Time-Harmonic Waves with Forward Speed," *Ship Technology Research*, Vol. 51, No. 1, 2004, pp. 35-52.

- 13) Yang, C., Soto, O., Lohner, R. and Noblesse, F. "Hydrodynamic Optimization of a Trimaran," *Ship Technology Research*, Vol. 49, No. 2, 2002, pp. 70-92.
- 14) Soto, O., Lohner, R. and Yang, C. "A Stabilized Pseudo-Shell Approach for Surface Parametrization in CFD Design Problems," *Communications in Numerical Methods in Engineering*, Vol.18, 2002, pp. 251-258.
- 15) Yang, C., Lohner, R. and Soto, O. "Optimization of a Wave Cancellation Multihull Ship Using CFD Tools", *Journal of Hydrodynamics*, Vol. 14, No. 1, 2002, pp. 1-7.
- 16) Yang, C. and Lohner, R. "Calculation of Ship Sinkage and Trim Using a Finite Element Method and Unstructured Grids," *International Journal on Computational Fluid Dynamics*, Vol. 16 (3), 2002, pp. 217-227.
- 17) Yang, C., Lohner, R. and Noblesse, F. "Farfield Extension of Nearfield Steady Ship Waves," *Ship Technology Research*, Vol. 47, 2000, pp. 22-34.
- 18) Lohner, R., Yang, C., Onate, E. and Idelsohn, S. "An Unstructured Grid-based, Parallel Free Surface Solver," *Applied Numerical Mathematics*, Vol. 31, 1999, pp. 271-293.
- 19) Lohner, R., Yang, C., Baum, J. D., Luo, H., Pelessone, D. and Charman, C. "The Numerical Simulation of Strongly Unsteady Flows with Hundreds of Moving Bodies", *International Journal for Numerical Methods in Fluids*, Vol. 31, 1999, pp. 113-120.
- 20) Noblesse, F., Chen, X. and Yang, C. "Generic Super Green Functions," *Ship Technology Research*, Vol. 46, No. 2, May 1999, pp. 81-92.
- 21) Noblesse, F., Yang, C. and Chen, X. B. "Boundary-integral Representation of Linear Free-surface Potential Flows," *Journal of Ship Research*, Vol. 41, No. 1, March 1997, pp. 10-16.
- 22) Lohner, R. and Yang, C. "Improved ALE Mesh Velocities for Moving Bodies", *Communications in Numerical Methods in Engineering*, Vol. 12, 1996, pp. 599-608.
- 23) Noblesse, F. and Yang, C. "Fourier Representation of Near-field Free-surface Flows", *Ship Technology Research*, Vol. 43, No.1, Feb. 1996, pp. 19-37.
- 24) Noblesse, F. and Yang, C. "Fourier-Kochin Formulation of Wave Diffraction-radiation by Ships or Offshore Structures", *Ship Technology Research*, Vol. 42, No. 3, July 1995, pp. 115-139.

- 25) Noblesse, F. and Yang, C. "An Approach to the Calculation of Wave Loads on Ships and Floating Structures", *Journal of Marine Structures*, Vol. 6, 1993.
- 26) Noblesse, F., Anthony, D. and Yang, C. "Water Waves Radiated by Coherent Vortex Structures in a Submerged Jet", *Journal of Ship Research*, Vol. 37, No. 1, March 1993, pp. 13-15.
- 27) Ertekin, R. C., Qian, Z. and Yang, C. "Positioning of a Floating OTEC Plant by Surface Intake Water", *International Journal of Offshore and Polar Engineering*, Vol. 3, No. 3, September 1993, pp. 236-239.
- 28) Yang, C. and Ertekin, R. C. "Numerical Simulation of Nonlinear Wave Diffraction by a Vertical Cylinder", *Transaction of the ASME, Journal of Offshore and Mechanics and Arctic Engineering*, Vol. 114, February 1992, pp. 36-44.
- 29) Yang, C. and Liu, Y. Z. "Numerical Calculation and Model Tests of Nonlinear Sway motion", *Journal of Shanghai Jiao Tong University*, Vol. 24, No.4, 1990 (in Chinese).
- 30) Yang, C. and Liu, Y. Z. "Simulation of Two-dimensional Nonlinear Waves", *Journal of Shanghai Jiao Tong University*, Special Issue, Book One, 1989, pp. 39-49.
- 31) Liu, Y. Z. and Yang, C. "Nonlinear Radiation Problem for an Axisymmetric Cylinder", *Journal of Advances in Hydrodynamics*, Vol. 2, No. 1, 1987, pp. 81-101.

Invited Papers in Books

- 1) Lohner, R., Yang, C., Cebal, J., Soto, O. and Camelli, F. "On Incompressible Flow Solvers," *Numerical Simulations of Incompressible Flows*, (M.M. Hafez ed.), World Scientific Press, 2003, pp. 50-71.
- 2) Lohner, R., Yang, C., Cebal, J., Baum, J. D., Mestreau, E., Luo, H., Pelessone, D. and Charman., C. "Fluid-Structural-Thermal Interaction Using Adaptive Unstructured-Grids", *Computational Methods for Fluid-Structure Interaction* (T. Kvamsdal et al. eds.), Tapir Press, 1999, pp. 109-120.
- 3) Lohner, R., Baum, J.D., Yang, C. and Luo, H. "The Numerical Simulation of Strongly Unsteady Flows with Hundreds of Moving Bodies", *Computational Fluid Dynamics Review* (M. M. Hafez and K. Oshima eds.), World Scientific Press, 1998, pp. 1027-1033.
- 4) Lohner, R., Yang, C., Cebal, J., Baum, J. D., Luo, H., Pelessone, D. and Charman., C. "Fluid-Structure Interaction Using a Loose Coupling Algorithm and

Adaptive Unstructured Grids”, *Computational Fluid Dynamics Review* (M. M. Hafez ed.), John Wiley and Sons, 1995, pp. 755-776.

Refereed Publications in Conferences

- 1) Yang, C., Lu, H., Löhner, R., Liang, X. And Yang, J. “An Unstructured-Grid Based VOF Method for Ship Motions Induced by Extreme Waves,” *Proceeding of the 9th International Conference on Numerical Ship Hydrodynamics*, Ann Arbor, Michigan, U.S.A., August 5-8, 2007, pp. 606-618.
- 2) Yang, C. and Noblesse, F. “A Practical Method for Predicting Sinkage and Trim,” *Proceeding of the 17th International Society of Offshore and Polar Engineering (ISOPE) Conference*, Lisbon, Portugal, July 1-6, 2007, pp. 2079-2083.
- 3) Lohner, R., Yang, C. and Onate, E. “On the Simulation of Flows with Violent Free Surface Motion,” *American Institute of Aeronautic and Astronautic, AIAA-06-0291*, 2006.
- 4) Yang, C. and Lohner, R. “Computation of 3D Flows with Violent Free Surface Motion,” *Proceeding of the 15th International Society of Offshore and Polar Engineering (ISOPE) Conference*, Seoul, Korea, June 19 – 24, 2005, pp. 187-196.
- 5) Noblesse, F. and Yang, C. “Wave Potential in Representation of 3D Flow about a Ship Advancing through Regular Waves in Deep Water,” *Proceeding of 15th International Society of Offshore and Polar Engineering (ISOPE) Conference*, Seoul, Korea, June 19 – 24, 2005, pp. 54-59.
- 6) Noblesse, F., Espinosa, R., Yang, C. and Lohner, R. “Dispersion Curves for Diffraction-Radiation by a Ship advancing through Regular Waves in Finite Water Depth,” *Proceeding of the 15th International Society of Offshore and Polar Engineering (ISOPE) Conference*, Seoul, Korea, June 19 – 24, 2005, pp 60-67.
- 7) Yang, C., Lohner, R. and Yim, S.C. “Development of a CFD Simulation Method for Extreme Wave and Structure Interactions,” *Proceedings of the 24th International Conference on Offshore Mechanics and Arctic Engineering (OMAE)*, Halkidiki, Greece, June 12 – 17, 2005, 13pp.
- 8) Yang, C. and Lohner, R. “H₂O: Hierarchical Hydrodynamic Optimization,” *Proceedings of the Twenty-Fifth Symposium on Naval Hydrodynamics*, St. John’s, Newfoundland, Canada, August 2004, pp. 257-264.
- 9) Yang, C., Noblesse, F. and Lohner, R. “Comparison of Classical and Simple Free-Surface Green Functions,” *Proceeding of International Society of Offshore and Polar Engineering (ISOPE) Conference*, Toulon, France, 2004, Vol. 3, pp. 439-446.

- 10) Yang, C. and Lohner, R. "Prediction of Flows over an Axisymmetric Body with Appendages," *Proceedings of the Eighth International Conference on Numerical Ship Hydrodynamics*, Busan, Korea, 2003, Vol. 2, pp. 233-247.
- 11) Noblesse, F. and Yang, C. "Practical Free-Surface Green Functions for Wave Diffraction-Radiation with Forward Speed," *Proceedings of the Eighth International Conference on Numerical Ship Hydrodynamics*, Busan, Korea, September 2003, Vol. 1, pp. 46-58.
- 12) Noblesse, F. and Yang, C. "Radiation Conditions and Farfield Waves," *Proceeding of International Society of Offshore and Polar Engineering (ISOPE) Conference*, Honolulu, Hawaii, 2003, 7pp.
- 13) Lohner, R., Yang, C., Cebal, J.R., Soto, O, Camelli, F. and Waltz, J. "Improving the Speed and Accuracy of Projection-Type Incompressible Flow Solvers," *AIAA-03-3991-CP [Invited]*, 2003, 15pp.
- 14) Lohner, R, Soto, O. and Yang, C "An Adjoint-based Design Methodology for CFD Optimization," *American Institute of Aeronautic and Astronautic*, *AIAA-03-0299*, 2003, 13pp.
- 15) Lohner, R., Yang, C. and Roger, R. "Tracking Vortices Over Large Distances Using Vorticity Confinement," *Proceedings of the Twenty-Fourth Symposium on Naval Hydrodynamics*, Fukuoka, Japan, July 2002, Office of Naval Research, West Japan Society of Naval Architects, National Research Council, 2003, pp. 950-962.
- 16) Noblesse, F., Yang, C., Hendrix, D. and Lohner, R. "Alternative Boundary-Integral Representations of Ship Waves," *Proceedings of the Twenty-first International Conference on Offshore Mechanics and Arctic Engineering (OMAE)*, Oslo, Norway, June 2002, 9pp.
- 17) Lohner, R, Yang, C, Cebal, J, Soto, O., Camelli, F., Baum, J.D., Luo, H., Mestreau, E. and Sharov. D., Ramamurti, Ravi, Sandberg, W. and Waltz, J. "Advances in FEFLO," *American Institute of Aeronautic and Astronautic*, *AIAA-02-1024*, 2002, 16pp.
- 18) Lohner, R. and Yang, C. "Vorticity Confinement on Unstructured Grids", *American Institute of Aeronautic and Astronautic*, *AIAA-02-0137*, 2002, 5pp.
- 19) Yang, C., Noblesse, F. and Lohner, R. "Practical Hydrodynamic Optimization of a Trimaran," *SNAME Annual Meeting*, Orlando, FL., October 2001, pp. 9.1-9.12.

- 20) Yang, C., Lohner, R. and Soto, O. "Optimization of a Wave Cancellation Multihull Ship using CFD Tools," *Proceedings of the Eighth International Symposium on Practical Design of Ships and Other Floating Structures - PRADS 2001 [Invited]*, Shanghai, China, September 2001, Vol. 1, pp. 43-50.
- 21) Lohner, R., Yang, C., Cebal, J., Soto, O., Camelli, F., Baum, J.D., Luo, H., Mestreau, E. and Sharov, D. "Advances in FEFLO," *American Institute of Aeronautic and Astronautic*, AIAA-01-0592, 2001, 14pp.
- 22) Yang, C., Noblesse F., Lohner, R. and Hendrix, D. "Practical CFD Applications to Design of a Wave Cancellation Multihull Ship," *Proceedings of the Twenty-Third Symposium on Naval Hydrodynamics*, Val De Reuil, France, September 2000, Office of Naval Research, Bassin d'Essais des Carenes, National Research Council, 2001, pp. 206-222.
- 23) Yang, C., Lohner, R., Noblesse, F and Hendrix, D. "Fourier-Kochin Extension of Fully Nonlinear Near-Field Ship Waves," *Proceeding of the Seventh International Conference on Numerical Ship Hydrodynamics*, Nantes, France, July 1999, pp. 1.2.1-14.
- 24) Yang, C., Lohner, R. and Noblesse, F. "Farfield Extension of Fully Nonlinear Nearfield Ship Waves", *AIAA-99-0548*, 1999, 16pp.
- 25) Lohner, R., Yang, C., Cebal, J., Baum, J. D., Luo, H., Pelessone, D. and Charman, C. "Fluid-Structure-Thermal Interaction Using a Loose Coupling Algorithm and Adaptive Unstructured Grids," *AIAA-98-2419*, 1998, 16pp.
- 26) Lohner, R., Yang, C. and Onate, E. "Viscous Free Surface Hydrodynamics Using Unstructured Grids", *Proceedings of the Twenty Second Symposium on Naval Hydrodynamics*, Washington, D.C., 1998, National Academy Press, Washington, D.C., 1999, pp. 476-490.
- 27) Lohner, R., Yang, C., Onate, E. and Idelsohn, S. "An Unstructured Grid-Based, Parallel Free Surface Solver", *AIAA-97-1830*, 1997, 19pp.
- 28) Yang, C. and Lohner, R. "Numerical Simulation of a Maneuvering Missile Using a Loose Fluid-Structure Coupling Algorithm", *AIAA-97-0408*, 1997, 14pp.
- 29) Noblesse, F., Chen, X. B. and Yang, C. "Fourier-Kochin Theory of Free-surface Flows", *Proceedings of Twenty-First Symposium on Naval Hydrodynamics*, Trondheim, Norway, 1996, National Academy Press, Washington, D.C., 1997, pp. 120-135.

- 30) Baum, J. D., Luo, H., Lohner, R., Yang, C., Pelessone, D. and Charman, C. "A Coupled Fluid/Structure Modeling of Shock Interaction with a Truck", *AIAA-96-0795*, 1996.
- 31) Lohner, R., Yang, C., Cebal, J., Baum, J. D., Luo, H., Pelessone, D. and Charman, C. "Fluid-Structure Interaction Using a Loose Coupling Algorithm and Adaptive Unstructured Grids", *AIAA-95-2259 [Invited]*, 1995, 33pp.
- 32) Ertekin, R. C., Qian, Z., Nihous, G.C., Vega, L.A. and Yang, C. "Global Dynamic-Positioning of a Floating OTEC Plant Using Warm Surface Seawater Intake", *Proceeding of the Second International Offshore and Polar Engineering Conference*, San Francisco, U. S .A., June 14-19, 1992, Vol. 1, pp. 607-613.
- 33) Yang, C. and Ertekin, R. C. "Numerical Simulation of Nonlinear Wave Diffraction by a Vertical Cylinder," *Proceeding of the Tenth International Conference on Offshore Mechanics and Arctic Engineering (OMAE)*, Stavanger, Norway, 1991, Vol. 1-A, pp. 105-112.
- 34) Yang, C., Liu, Y. Z. and Takagi, N. "Time-domain Calculations of Nonlinear Hydrodynamics of Wave-body Interactions", *Proceeding of the Fifth International Conference on Numerical Ship Hydrodynamics*, Hiroshima, Japan, 1989, National Academy Press, Washington, D.C., 1990, pp. 341-350.

Non-refereed Publications in Conferences and Workshops

- 1) Yang, C., Lu, H., Löhner, R., Liang, X. And Yang, J. "Numerical Simulation of Highly Nonlinear Wave-Body Interactions with Experimental Validation," *Proceeding International Conference on Violent Flows (VF-2007) [Plenary Keynote Paper]*, Fukuoka, Japan, November 22-22, 2007, pp. 1-10.
- 2) Yang, C., Kim, H.Y. and Noblesse, F. "A Practical Method For Evaluating Steady Flow About A Ship," *Proceedings of the 9th International Conference on Fast Sea Transportation (FAST2007)*, Shanghai, China, September 23-27, 2007, pp. 118-126.
- 3) Liang, X., Yang, J., Yang, C., Lu, H., Löhner, R. "Numerical and Experimental Study of Green Water on a Moving FPSO," *Proceedings of the 9th International Conference on Fast Sea Transportation (FAST2007)*, Shanghai, China, September 23-27, 2007, pp. 465-476.
- 4) Yang, C., Kim, H.Y., Delhommeau, G. and Noblesse, F. "The Neumann-Kelvin and Neumann-Michell Linear Models of Steady Flow about a Ship," *Proceedings of the 12th International Congress of the International Maritime Association of the Mediterranean (IMAM'2007)*, September 2-6, 2007, Varna, Bulgaria, 8pp.

- 5) Löhner, R., Yang, C., and Onate, E. "Simulation of Rigid and Flexible Moving Objects in Heavy Sea States," *MARINE'07 [Plenary Keynote Paper]*, Barcelona, Spain, June 2007.
- 6) Noblesse, F., Yang, C. and Espinosa, R. "Nearfield and Farfield Boundary-Integral Representation of Free-Surface Flows," *Proceedings of the 22nd International Workshop on Water Waves and Floating Bodies*, April 15-18, 2007, Plitvice, Croatia.
- 7) Löhner, R., Yang, C., and Onate, E. "Simulation of Structural Response to Violent Free Surface Flows," *4th International Congress on Numerical Methods in Engineering and Applied Sciences [Plenary Keynote Paper]*, Morelia, Mexico, January 2007.
- 8) Yang, C. and Löhner, R. "Simulation of Ship Motions Induced by Extreme Waves," *Proceedings of the 3rd Asia-Pacific Workshop on Marine Hydrodynamics (APHydro) [Plenary Keynote Paper]*, Shanghai, China, June 27-28, 2007, pp. 225-231.
- 9) Yang, C. and Noblesse, F. "The Neumann-Kelvin and Neumann-Michell Linear Flow Models," *Proceedings of the 21st International Workshop on Water Waves and Floating Bodies*, Loughborough, UK, April 2-5, 2006.
- 10) Noblesse, F. and Yang, C. "Alternative Boundary-Integral Representations and Green Functions for Diffraction-Radiation by a Ship Advancing in Regular Waves," *Proceedings of the International Conference on Computational and Experimental Engineering and Sciences*, India, December 2005.
- 11) Löhner, R., Yang, C. and Onate, E. "Simulation of Flows with Violent Free Surface Motion," *Proceedings of the MECOM XXIV [Plenary Lecture]*, (A.E. Larreteguy ed.), Buenos Aires, Argentina, November 2005.
- 12) Löhner, R., Cebal, J.R., Yang, C., Baum, J.D., Mestreau, E.L. and Soto, O. "Extending the Range and Applicability of the Loose Coupling Approach for FSI Simulations," *Proceedings of the DGF Workshop on Fluid-Structure Interaction [Invited Paper]*, Pforzheim, Germany, October 2005.
- 13) Noblesse, F. and Yang, C. "Alternative Boundary-Integral Representations of 3D Flow About a Ship Advancing through Regular Waves in Finite Water Depth," *Proceeding of the Eighth Numerical Towing Tank Symposium*, October 2-4, 2005, Varna, Bulgaria.
- 14) Löhner, R., Yang, C. and Onate, E. "Simulation of Flows with Violent Free Surface Motion," *Proceedings of Eighth Argentinian Congress on Computational*

- Mechanics (MECOM 2005) [Plenary Lecture]*, (Larreteguy, A.E. Editor), Buenos Aires, Argentina, November 2005.
- 15) Lohner, R., Cebal, J.R., Yang, C., Baum, J.D., Mestreau, E.L. and Soto, O. "Extending the Range and Applicability of the Loose Coupling Approach for FSI Simulations," *DGF Workshop on Fluid-Structure Interaction [Invited]*, Pforzheim, Germany, October 2005.
 - 16) Lohner, R., Yang, C. and Onate, E. "Large-Scale Simulation of Flows With Violent Free Surface Motion," *Proceedings on the International Conference on Computational Methods in Marine Engineering (Marine 2005)* (Bergan, P., Garcia, J., Onate, E. and Kvamsdal, T., Editors) [**Invited Keynote Speaker**], Oslo, Norway, June 27 – 29, 2005.
 - 17) Noblesse, F. and Yang, C. "Local Potential in Representation of 3D Flow about a Ship Advancing through Regular Waves in Finite Water Depth," *20th International Workshop on Water Waves and Floating Bodies*, Spitsbergen, Norway, May 29 – June 1, 2005.
 - 18) Lohner, R., Yang, C., Cebal, J.R., Camelli, F., Togashi, F., Baum, J.D., Luo, H., Mestreau, E.L. and Soto, O.A "Moore's Law, the Life Cycle of Scientific Computing Codes and the Diminishing Importance of Parallel Computing," *Parallel CFD05*, College Park, MD, May 2005.
 - 19) Yang, C., Noblesse, F. and Lohner, R. "Comparison of Alternative Boundary-Integral Representations," *Proceeding of the 7th Numerical Towing Tank Symposium*, Hamburg, Germany, October 2 – 5, 2004.
 - 20) Yang, C., Noblesse, F. and Lohner, R. "Comparison of Alternative Boundary-Integral Representation," *Proceeding of the Seventh Numerical Towing Tank Symposium*, Hamburg, Germany, 2004, 6pp.
 - 21) Lohner, R., Yang, C., Cebal, J.R., Soto, O. and Camelli, F. "Improving the Speed and Accuracy of Projection-Type Incompressible Flow Solvers," *Proceeding of the First LNCC Meeting on Computational Modeling [Invited]*, Petropolis, Brazil, August 2004.
 - 22) Yang, C. "The Future of CFD in Hydrodynamics – Prediction and Optimization," *Joint Workshop of Overseas and Domestic Chinese Young Scholars On the Frontier Problems of Ship Hydrodynamics [Invited]*, Wuxi, China, June 2004.
 - 23) Noblesse, F. and Yang, C. "Generalized Boundary-Integral Representations," *Proceedings of the Nineteenth International Workshop on Water Waves and Floating Bodies*, Cortona, Italy, 2004, 4pp.

- 24) Noblesse, F. and Yang, C. "Simple Green Functions," *Proceeding of the Sixth Numerical Towing Tank Symposium*, Rome, Italy, 2003, 6pp.
- 25) Noblesse, F. and Yang, C. "Wave Diffraction by Ships and Offshore Structures," *Proceeding of the Ninth Symposium on Nonlinear Free-Surface Flows [Invited]*, Hiroshima, Japan, 2003, pp. 1-12.
- 26) Lohner, R., Soto, O. and Yang, C. "An Adjoint-Based Shape Optimization Scheme for CFD Problems," *The Second MIT Conference on Computational Fluid and Solid Mechanics*, Boston, MA, June 2003.
- 27) Noblesse, F. and Yang, C. "Weakly-Singular Boundary Integral Representations for Wave Diffraction and Radiation with Forward Speed," *9e Journees de l'Hydrodynamique*, Poitiers, France, 2003.
- 28) Noblesse, F. and Yang, C. "Far-field Waves," *Proceeding of 18th International Workshop on Water Waves and Floating Bodies*, Le Croisic, France, March 2003, 4pp.
- 29) Noblesse, F. and Yang, "Far-field Dispersive Waves and the Radiation Conditions," *Proceeding of Fifth Numerical Towing Tank Symposium*, Pornichet, France, September 2002, 5pp.
- 30) Lohner, R. and Yang, C. "Tracking Vortices Over Large Distances Using Vorticity Confinement," *ECCOMAS CFD 2001 Conference*, Swansea, Wales, September 2001, 8pp.
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PROFESSIONAL SERVICE

Membership in Editorial Panels of Journals

- Invited member of the editorial board of the international journal “Journal of Hydrodynamics,” published and distributed by China Ocean Press.

Reviewer of Scientific Journals

- Journal of Ship Research.
- Journal of Offshore Mechanics and Arctic Engineering.
- The International Journal of Offshore and Polar Engineering.
- Journal of Computer Methods in Applied Mechanics and Engineering.
- Journal of Engineering Mechanics.
- Journal of Fluids Engineering.
- Journal of Waterway, Port, Coastal and Ocean Engineering.
- Ocean Engineering.
- Journal of Fluids and Structures.

Reviewer of Book Chapters

- Book on Advances in Numerical Simulation of Nonlinear Water Waves, to be published by the World Scientific.

Review of Conference Papers

- Eighteenth International Offshore and Polar Engineering Conference – ISOPE 2008, Vancouver, Canada, July 6-11, 2008.
- Twenty-Seventh International Conference on Offshore Mechanics and Arctic Engineering (OMAE 2008), Estoril, Portugal, June 15-20, 2008.
- Seventeenth International Offshore and Polar Engineering Conference – ISOPE 2007, Lisbon, Portugal, July 1-6, 2007.
- Sixteenth International Offshore and Polar Engineering Conference – ISOPE 2006, San Francisco, USA, May 28 – June 2, 2006.

- Fifteenth International Offshore and Polar Engineering Conference – ISOPE 2005, Seoul, Korea, June 19-24, 2005.

Reviewer of Grant Proposals and Special Awards

- Canada Foundation of Innovations.
- The Natural Sciences and Engineering Research Council of Canada (NSERC).
- Ministry of Education of China's Chang Jiang Scholars Program.

Conferences Organized

- Member of Technical Program Committee and session organizer of the Eighteenth International Offshore and Polar Engineering Conference – ISOPE 2008, Vancouver, Canada, July 6-11, 2008.
- Member of Technical Program Committee and session organizer of the Seventeenth International Offshore and Polar Engineering Conference – ISOPE 2007, Lisbon, Portugal, July 1-6, 2007.
- Member of Organizing Committee of the Conference of Global Chinese Scholars on Hydrodynamics (CCSH'06), Shanghai, China, July 1-14, 2006.
- Member of Technical Program Committee and session organizer of the Sixteenth International Offshore and Polar Engineering Conference – ISOPE 2006, San Francisco, USA, May 28 – June 2, 2006.
- Member of Technical Program Committee and session organizer of the Fifteenth International Offshore and Polar Engineering Conference – ISOPE 2005, Seoul, Korea, June 19-24, 2005.
- Co-Chairman of the organization committee for the Joint Workshop of Overseas and Domestic Chinese Young Scholars on the Frontier Problems of Ship Hydrodynamics, Wuxi, China, June 2004

Conference Sessions Chaired

- Session Chairman for the International Conference on Violent Flows (VF-2007), Fukuoka, Japan, November, 2007.
- Session Chairman for the 5th International Workshop on Ship Hydrodynamics, Zhenjiang, China, September 2007.
- Session Chairman for the Conference of Global Chinese Scholars on Hydrodynamics (CCSH'06), Shanghai, China, July 2006.
- Session Chairman for the 3rd Asia-Pacific Workshop on Marine Hydrodynamics (APHydro), Shanghai, China, June 2006.
- Session Chairman for the Sixteenth International Offshore and Polar Engineering Conference – ISOPE 2006, San Francisco, USA, May 2006.
- Session Chairman for the Fifteenth International Offshore and Polar Engineering Conference – ISOPE 2005, Seoul, Korea, June 2005.

- Session Chairman for the Eighth International Conference on Numerical Ship Hydrodynamics, Busan, Korea, September 2003.
- Session Chairman for the Eighth International Symposium on Practical Design of Ships and Other Floating Structures - PRADS 2001, Shanghai, China, September 2001.

PROFESSIONAL AFFILIATIONS

- 1) **Member**, The International Society of Offshore and Polar Engineers (2004 – present)
- 2) **Member**, The Society of Naval Architects and Marine Engineers (1990 – 2002)
- 3) **Member**, The American Institute of Aeronautics and Astronautics (AIAA) (1995 – 2002)
- 4) **Charter Member**, The Aloha Section of the American Society of Naval Engineers (1990 – October 1991)
- 5) **Member**, The Chinese Society of Naval Architects and Marine Engineers (1988 – 1990)