University of Birmingham

Dr Qianxi Wang

Lecturer

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About

Qianxi Wang is Lecturer of Applied Mathematics.

Qianxi has published over 20 research papers in scientific journals.

He studies on the motion of bubbles in a compressible liquid, with important applications in medical ultrasonics, sonochemistry and underwater explosion. He specialises in asymptotic perturbation methods, with application to the study of ground effect. He simulated nonlinear unsteady wave/body interaction using unstructured boundary integral method. He calculated N-body problem using fast-multipole-expansion.

School web page: **web.mat.bham.ac.uk/Q.X.Wang/ (http://web.mat.bham.ac.uk/Q.X.Wang/)**

Qualifications

- Ph D in Fluid Mechanics 1990
- BSc in Fluid Mechanics 1983

Biography

Wang Qianxi obtained his BSc and PhD in Fluid Mechanics from the University of Science and Technology of China (USTC) in 1983 and 1990 respectively. He had been a lecturer for two years at USTC.

He had been in Singapore for 12 years, mainly at the DSO National Laboratories of Singapore. He has joined the University of Birmingham at the beginning of 2006.

Teaching

- Viscous Fluid Mechanics
- Multi-variable Calculus
- Advanced Engineering Mathematics A & B

PhD opportunities

Research

RESEARCH THEMES

- Bubble dynamics in compressible liquids
- Ground effects using matched asymptotic expansions
- Unstructured BIM for water wave / body interaction
- N-body problem using fast multipole method (treecode)

Other activities

- Member of the Editorial Board of Journal of Hydrodynamics
- Member of the Active Editorial Board of Philosophic Nature
- Member of the Organizing Committee of the Conference of Global Chinese Scholars on Hydrodynamics (July 11-14, 2006 Shanghai, China)
- Member of the International Scientific Committee of the 7th International Workshop on Ship Hydrodynamics (Sept. 16-19, 2011, Shanghai, China)

Publications

Q X Wang & J R Blake 2010 Non-spherical bubble dynamics in a compressible liquid. Part 1. Travelling Acoustic Wave. J. Fluid Mech. 659, 191-224.

Q X Wang 2007 an analytical solution for two slender bodies of revolution translating in very close proximity. J. Fluid Mech. 582, 223-251.

Q X Wang 1991 Flow around an unsteady wing close to a curved ground. J. Fluid Mech. 226, 175-187.

Q X Wang 2005 Analysis of a slender body moving near a curved-ground, Phys. Fluids 17 (9): Art. No. 097102.

Q X Wang 2004 Numerical modelling of violent bubble motion. Phys. Fluids 16 (5), 1610-1619.

Q X Wang 2004 Interaction of two circular cylinders in inviscid fluid. Phys. Fluids 16 (12), 4412-4425.

Q X Wang 2005 Unstructured MEL modelling of unsteady nonlinear ship waves, J. Comput. Phys. 210 (1) 183-224.

Q X Wang 2004 Variable order revised binary treecode J. Comput. Phys. 200(1), 192-210.

Q X Wang, K S Yeo, B C Khoo & K Y Lam, 2005 Vortex ring modelling for toroidal bubbles, Theoret. & Comput. Fluid Dyn., 19 (5), 303-317.

Q X Wang 1998 The numerical analyses of the evolution of a gas bubble near an inclined wall. Theoret. & Comput. Fluid Dyn. 12, 29-51.

Q X Wang, K S Yeo, B C Khoo & K Y Lam, 1996 Strong interaction between buoyancy bubble and free surface. Theoret. & Comput. Fluid Dyn. 8, 73-88.

Q X Wang, K S Yeo, B C Khoo & K Y Lam, 1996 Nonlinear interaction between gas bubble and free surface. Computers & Fluids 25, No. 7, 607-628.

Q X Wang, 2010 Analysis of small-aspect-ratio lifting surfaces in extreme curved-ground effect. IMA J. Applied Math. doi: 10.1093/imamat/hxq051.

Q X Wang & S K Tan 2008 Dynamic Analysis of a Slender Body of Revolution Berthing to a Wall. Fluids Engng.-Transactions of ASME. 131(1), 011205.

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