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B.S., Tsinghua University, Beijing, China, 1982

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Research Interests

Inverse scattering theory and algorithms, Ill-posed problems, Scientific computing, FM theory and applications for imaging and sensing.

Professional Experience

2003-present Associate Professor
Courant Institute

1997-2003 Assistant Professor
Courant Institute

1992-97 Research Scientist
Computer Science Department
Yale University

1991-92 Member
School of Mathematics
Institute for Advanced Study, Princeton

1986-91 Research Assistant
Computer Science Department
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Publications

1. On the shielding effect of the Helmholtz equation, in press, *Communications on Pure and Applied Mathematics*, 2007
2. Rapid perturbational calculations for the Helmholtz equation in two dimensions, *Discrete and Continuous Dynamical Systems - Series A (DCDS-A)*, Volume: 18, Number: 4, August 2007, page 627 - 636
3. On the naturally induced sources for obstacle scattering, with P. S. Meyer, M. Capistran, *Commun. Comput. Phys.*, vol 1, pp 974-983, 2006
4. Riccati equations for scattering matrices on level surfaces, *Inverse Problems*, vol 21, pp 1745-1756, 2005

5. High-order corrected trapezoidal quadrature rules for the coulomb potential in three dimensions, with J. C. Aguilar, *Computers & Mathematics with Applications*, Volume 49, Issue 4, January 2005, Pages 625-631
6. A representation of acoustic waves in unbounded domains, with B. Alpert, *Communications on Pure and Applied Mathematics*, Volume 58, Issue 10, Pages 1358 - 1374, 2005
7. A high-order, fast algorithm for scattering calculation in two dimensions, with J. C. Aguilar, *Computers & Mathematics with Applications*, Volume 47, Issue 1, January 2004, Pages 1-11
8. Least Squares Solution of Matrix Equation $A X B^* + C Y D^* = E$, with S. Shim, *SIAM J. Matrix Anal. Appl.*, vol. 24, No. 3, 802 - 808, 2003
9. Fast direct solver for the Lippmann-Schwinger equation, *Advances in Computational Mathematics*, vol. 16, pp. 175-190, 2002
10. High-Order Corrected Trapezoidal Quadrature Rules for Functions with a Logarithmic Singularity in 2-D, with J. C. Aguilar, *Computers and Mathematics with Applications*, vol. 44, No. 8-9, pp. 1031-1039, 2002
11. Inverse scattering for lossy medium via active material, with S. Y. Shim, submitted to *Inverse Problems*
12. Regularity and Stability for the Scattering Map of a Linearized Inverse Medium Problem, with G. Bao and F. Ma. *J. Math. Anal. Appl.* 247 (1): 255-271 JUL 1 2000
13. Inverse Scattering via Skin Effect, *Inverse Problems*, vol. 13, No. 3, 647-667, 1997.
14. Inverse Scattering via Heisenberg's Uncertainty Principle, *Inverse Problems*, vol. 13, No. 2, 253-282, 1997.
15. On the Riccati Equations for the Scattering Matrices in two dimensions, with V. Rokhlin, *Inverse Problems*, vol. 13, No. 1, 1-13, 1997.
16. On the Inverse Scattering Problem for the Helmholtz Equation in One Dimension, *Inverse Problems*, vol. 8, 365-391, 1992.