

Hanwen Zhang

CONTACT INFORMATION	Department of Applied and Computational Mathematics Yale University 12 Hillhouse Avenue, New Haven CT 06511, USA	(203) 392-2522 hanwen.zhang@yale.edu https://han-wen-zhang.github.io
RESEARCH INTERESTS	Numerical analysis, computational physics, PDE-constrained optimization	
EMPLOYMENT	Gibbs Assistant Professor, Yale University Graduate Research Assistant, Yale University Optical Scientist, Facebook Reality Lab	07/2022– 09/2017–05/2022 06/2021–08/2021
EDUCATION	Ph.D., Applied Physics, Yale University B.Sc., Physics, National University of Singapore B.Eng., Material Science, National University of Singapore	09/2017–05/2022 08/2012–05/2017 08/2012–05/2017
PUBLICATIONS	<ol style="list-style-type: none">1. A. Gopal, H. Zhang. “A highly accurate procedure for computing globally optimal Wannier functions in one-dimensional crystalline insulators.” <i>Preprint</i> (2024).2. H. Zhang, V. Rokhlin. “Finding roots of complex analytic functions via generalized colleague matrices.” <i>Advances in Computational Mathematics</i> (2024).3. W. Xue, H. Zhang, A. Gopal, V. Rokhlin, O. Miller. “Fullwave design of cm-scale cylindrical metasurfaces via fast direct solvers.” <i>Preprint</i> (2023).4. H. Zhang, Z. Kuang, S. Puri and O. Miller. “Conservation-law-based global bounds to quantum optimal control.” <i>Physical Review Letters</i> (2021).5. H. Zhang, O. Miller. “Quasinormal coupled mode theory.” <i>Preprint</i> (2020).6. H. Zhang, C.-W. Hsu, and O. Miller. “Scattering concentration bounds: brightness theorems for waves.” <i>Optica</i> (2019).7. Solutions manual to Quantum Mechanics by Julian Schwinger with Berthold-Georg Englert. (To appear.)	
TALKS	<ul style="list-style-type: none">• <i>Finding scattering resonances via generalized colleague matrices</i>, UMass Lowell Mathematics & Statistics Colloquium• <i>An efficient scheme for fullwave inverse design of large-scale metasurfaces</i>, SPIE (2022)• <i>Conservation-law-based global bounds to quantum optimal control</i>, SUTD Mathematics and Technology Seminar (2021)• <i>Brightness theorems for nanophotonics</i>, CLEO (2019)	
TEACHING	Yale University, Department of Mathematics <ul style="list-style-type: none">• Instructor – MATH 246 Ordinary Differential Equations, Fall 2024• Instructor – MATH 222 Linear Algebra with Applications, Spring 2024• Instructor – MATH 246 Ordinary Differential Equations, Fall 2023• Instructor – MATH 222 Linear Algebra with Applications, Spring 2023• Instructor – MATH 222 Linear Algebra with Applications, Fall 2022	

Yale University, Department of Physics

- Teaching assistant – PHYS 502 Electromagnetic Theory I, Spring 2019