Casey Jao

RESEARCH INTERESTS	Partial differential equations, harmonic and microlocal analysis, inverse scattering

EMPLOYMENT	Postdoctoral fellow in mathematics, University of Toronto	2019-2021
	NSF postdoctoral fellow in mathematics, UC Berkeley	2016-2019

EDUCATION

University of California Los Angeles, Los Angeles, CA

Ph.D. in Mathematics, 2011-2016

Thesis: "Some variable-coefficient nonlinear Schrödinger equations at critical regularity."

Caltech, Pasadena, CA

B.S. in Mathematics, 2007-2011

Coursework: algebra, analysis, geometry and topology, quantum and statistical mechanics, C++ programming

PAPERS AND PREPRINTS

1. Wave maps on $(1+2)$-dimensional curved spacetimes (with Cristian Gavrus and Daniel Tataru). *To appear in Analysis and PDE.*

2. Refined mass-critical Strichartz estimates for Schrödinger operators. *Analysis & PDE (2020), vol. 13, no. 7, 1955-1994.*

3. The quintic NLS on perturbations of $\mathbf{R}^3$. *Amer. J. Math. (2019), no. 4, 981-1035.*

4. Inverse Strichartz estimates for 1d Schrödinger operators with potentials of quadratic growth, with R. Killip and M. Visan. *Rev. Mat. Iberoamericana (2019), no. 3, 703-730.*

5. Energy-critical NLS with potentials of quadratic growth. *DCDS-A 38 (2018), no. 2, 563-587.*

6. The energy-critical quantum harmonic oscillator. *Comm. PDE. 41 (2016), no. 1, 79-133.*

TALKS	Analysis seminar at University of Toronto	Nov 2019
	UC Berkeley Analysis and PDE seminar	Oct 2018
	UC Davis Analysis and PDE seminar	May 2018
	Caltech-UCLA Joint Analysis and PDE seminar	Feb 2018
	AMS Special Session on Nonlinear Dispersive Equations	Sept 2017
	Joint Mathematics Meetings Special Session on quasilinear PDEs	Jan 2017
	UC Berkeley Analysis and PDE Seminar	Dec 2016
	AMS Special Session on Harmonic Analysis and Dispersive PDE	Nov 2016
	11th AIMS Conference at Orlando, FL	Jul 2016
	UCSD Analysis seminar	Mar 2016
	UCLA Analysis and PDE Seminar	Mar 2015
	33rd Western States Mathematical Physics Meeting at Caltech	Feb 2015
	Colloquium at Georgia Southern University	Dec 2014

GRANTS AND AWARDS	NSF Mathematical Sciences Postdoctoral Research Fellowship	2016-2019
	UCLA Dissertation Year Fellowship	2015-2016
	UCLA Chancellor's Prize Fellowship	2012-2013

Teaching Experience	University of Toronto (course coordinator)	
	MAT244 Ordinary Differential Equations	W2020
	University of Toronto (instructor)	
	APM346 Introduction to Partial Differential Equations	F2019
	MAT186 Calculus I	F2020
	UC Berkeley (instructor)	
	Math 104 Introduction to Real Analysis	F2018
	Math 126 Introduction to Partial Differential Equations	S2018
	Math 185 Introduction to Complex Analysis	F2017
	UCLA (instructor)	Sept 2014
	Summer Bridge calculus bootcamp	
	UCLA Center for Excellence in Engineering and Diversity	
	UCLA (Teaching assistant)	
	Math 33b Differential Equations	W2016
	Math 131BH Honors Real Analysis	W2015
	Math 131AH Honors Real Analysis	F2014
	Math 132 Complex Analysis for Applications	W2013, S2013
	Math 32b Vector Calculus	F2012, W2013, S2013
	Math 31b Integration and Infinite Series	F2012
	Other	
	Mentor for undergraduate reading course in harmonic analysis	S2018
	Teaching Assistant at Summer Northwestern Analysis Program	Summer 2017

Software Skills
- Programming languages: C, C++, Python, Bash
- Operating systems: Linux, Windows
- Github: `https://github.com/cjao/`
- Gitlab: `https://gitlab.gnome.org/casey.jao`