Francis White

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Phone: +1(585)754-7869
Current Institution: University of California Irvine

Research interests

Semiclassical and Microlocal Analysis, Mathematical Physics, Several Complex Variables

Employment

University of California Irvine — Irvine, CA
Visiting Assistant Professor — Summer 2023- Present
Supervisor: Hamid Hezari

Université Sorbonne Paris Nord — Paris, France
Postdoctoral Fellow — Fall 2022- Summer 2023
Supervisor: Francis Nier

Education

University of California Los Angeles — Los Angeles, CA
Ph.D. in Mathematics — 2016 – 2022
Advisor: Michael Hitrik

Brown University — Providence, RI
Sc.B. in Mathematics with Honors — 2011 – 2015
Senior Thesis Advisor: Sergei Treil

Visiting Positions

Program Associate
Semester on Microlocal Analysis. Mathematical Sciences Research Institute. Berkeley, CA. Fall 2019

Awards

Pacific Journal of Mathematics Dissertation Award — June 2022
$3,000 monetary award for outstanding dissertation research

UCLA Dissertation Year Fellowship — 2021-2022
$20,000 stipend plus coverage of standard tuition and fees for final year of graduate study at UCLA

Papers

Global subelliptic estimates for geometric Kramers-Fokker-Planck operators on closed manifolds
F. Nier, X. Sang, and F. White
Submitted 2024. https://arxiv.org/abs/2402.07511

L^p-bounds for eigenfunctions of analytic non-self-adjoint operators with double characteristics
F. White

Submitted 2022. arXiv:2110.09664

L^p-bounds for semigroups generated by non-elliptic quadratic differential operators
F. White
To appear in *Journal of Spectral Theory*, 2021. arXiv:2104.14613

Propagation of Global Analytic Singularities for Schrödinger Equations with Quadratic Hamiltonians
F. White
Journal of Functional Analysis, 283 (2022). arXiv:2102.01474

Weyl symbols and boundedness of Toeplitz operators
L. Coburn, M. Hitrik, J. Sjöstrand, and F. White
Math. Res. Lett., 28 (2021), 681-696. arXiv:1907.06132

Talks and Posters

Bounds for Eigenfunctions of Semiclassical Pseudodifferential Operators with Double Characteristics TALK
UCI, Irvine, California, March 2024

Global subelliptic estimates for geometric Kramers-Fokker-Planck operators on closed manifolds TALK
Campus Jussieu, Paris, France, June 2023

Quadratic Evolution Equations and Fourier Integral Operators in the Complex Domain TALK
Université de Rennes, Rennes, France, April 2023

Quadratic Evolution Equations and Fourier Integral Operators in the Complex Domain TALK
Université de Bourgogne, Dijon, France, March 2023

Quadratic Evolution Equations and Fourier Integral Operators in the Complex Domain TALK
Spectral problems in mathematical physics, Insitut Henri Poincaré, March 2023

Bergman Representations of FIO's and Applications to Quadratic Evolution Equations TALK
Quadratic Days Workshop, University of Nantes, February 2023

Schrödinger Equations with Non Self-Adjoint Quadratic Hamiltonians and Eigenfunction Bounds TALK
LAGA PDE and Mathematical Physics Seminar, Université Sorbonne Paris Nord, November 2022

L^p-Bounds for Eigenfunctions of Analytic Non Self-Adjoint Operators with Double Characteristics TALK
Mathematical aspects of the Physics with non-self-Adjoint Operators, Banff International Research Station, July 2022

L^p-Bounds for Eigenfunctions of Analytic Non Self-Adjoint Operators with Double Characteristics TALK
Mathematical aspects of the Physics with non-self-Adjoint Operators, Banff International Research Station, July 2022

Propagation of Global Analytic Singularities for Schrödinger Equations with Quadratic Hamiltonians TALK
International Workshop on Operator Theory and Applications, Virtual, Chapman University, August 2021

Propagation of Global Analytic Singularities for Schrödinger Equations with Quadratic Hamiltonians TALK
Great Lakes Mathematical Physics Meeting, Virtual, Michigan State University, June 2021

Propagation of Global Analytic Singularities for Schrödinger Equations with Quadratic Hamiltonians TALK
Days on Diffraction, Virtual, Steklov Mathematical Institute, St. Petersburg, Russia, June 2021

Propagation of Global Analytic Singularities for Schrödinger Equations with Quadratic Hamiltonians TALK
Participating Analysis Seminar, Virtual, Department of Mathematics, UCLA, May 2021

Weyl symbols and boundedness of Toeplitz operators TALK
Participating Analysis Seminar, Department of Mathematics, UCLA, January 2020

Weyl symbols and boundedness of Toeplitz operators TALK
Semester on Microlocal Analysis, Mathematical Sciences Research Institute, Berkeley, CA, December 2019

Weyl symbols and boundedness of Toeplitz operators POSTER
Connections for Women: Microlocal Analysis, Semester on Microlocal Analysis, Mathematical Sciences Research Institute, Berkeley, CA, August 2019

Weyl symbols and boundedness of Toeplitz operators POSTER

Summer Northwestern Analysis Program, Northwestern University, Evanston, IL, August 2019

The Bochner-Martinelli Integral Formula TALK
With Nick Treuer and Ziming Shi
The $\overline{\partial}$-Problem in the Twenty-First Century, Mathematical Sciences Research Institute, Berkeley, CA, June 2018

Teaching Experience

Teaching assistant, Department of Mathematics at UCLA 2016-Present
Upper Division Courses: Math 115A (Linear Algebra), Math 131B (Analysis II), Math 135 (ODE), Math 136 (PDE)
Lower Division Courses: Math 3A & C (Calculus for Life Sciences), Math 31AL (Calculus Laboratory), Math 31B (Integral Calculus), Math 32A & B (Multivariable Calculus), Math 33B (ODE)

Grader, Department of Mathematics at Brown University 2013-2015
Courses: Math 113-114 (Undergraduate Analysis) in Fall 2013, Spring 2014, and Fall 2014

Group and Individual Tutor, Brown University 2014-2015
Subjects Tutored: Multivariable Calculus, Linear Algebra

Service

Mathematics Department Undergraduate Group 2012 – 2015
Club officer. Helped organize weekly math talks. Principal organizer for *SUMS* Conference in Spring 2015

Conferences Attended

Quadratic Days Workshop. University of Nantes. Nantes, France. February 2023

15th Meeting GDR DYNQUA. University of Rennes. Rennes, France. February 2023

Bergman kernels in microlocal analysis and mathematical physics. CIRM. Marseille, France. November 2022.

Geometric Applications of Microlocal Analysis. Stanford. Palo Alto, CA. September 2022
Harmonic Analysis and Waves. University of Washington. Seattle, WA. August 2022

Aspects of the Physics with non-self-Adjoint Operators. Banff International Research Station. Banff, Canada. July 2022

International Workshop on Operator Theory and Applications. Virtual. Chapman University. Orange, CA. August 2021

Great Lakes Mathematical Physics Meeting. Virtual. Michigan State University. East Lansing, MI. June 2021

Days on Diffraction. Virtual. Steklov Mathematical Institute. St. Petersburg, Russia. June 2021

Recent developments in microlocal analysis. Mathematical Sciences Research Institute. Berkeley, CA. October 2019

Introductory Workshop: Microlocal Analysis. Mathematical Sciences Research Institute. Berkeley, CA. September 2019

Connections for Women: Microlocal Analysis. Mathematical Sciences Research Institute. Berkeley, CA. August 2019

Summer Northwestern Analysis Program. Northwestern University. Evanston, IL. August 2019

Microlocal Analysis and Applications. Fudan University. Shanghai, China. June 2019

Microlocal Analysis, Inverse Problems and Resonances: A Conference in Honor of Plamen Stefanov. Purdue University. West Lafayette, IN. March 2019

Non-Hermitian quantum mechanics and symplectic geometry. Workshop Note-taker. American Institute of Mathematics. San Jose, CA. July 2018

Great Lakes Mathematical Physics Meeting. Michigan State University. East Lansing, MI. June 2018

The $\overline{\partial}$-Problem in the Twenty-First Century. Mathematical Sciences Research Institute. Berkeley, CA. June 2018

Summer Northwestern Analysis Program. Northwestern University. Evanston, IL. August 2017