Curriculum Vitae

Alberto Takase

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Professional Preparation

Northwestern University, Evanston — Mathematics — B.A., 2016
with Departmental Honors and a minor in Chemistry

University of California, Irvine — Mathematics — Ph.D., 2022
advised by Anton Gorodetski

Awards

NSF Mathematical and Physical Sciences Ascending Postdoctoral Research Fellowship (2022)
https://www.nsf.gov/awardsearch/showAward?AWD_ID=2213277&HistoricalAwards=false

Publications

[1] S. Beckus and A. Takase, *Spectral estimates of dynamically-defined and amenable operator families*, (submitted, arXiv:2110.05763).

[2] A. Takase, *On the spectra of separable 2D almost Mathieu operators*, Springer, Annales Henri Poincaré, (2021), 1–15.

keywords: Spectral Theory, Dynamical Systems, Mathematical Physics

Appointments

Instructor [Calculus II] at Rice University
Spring 2024

Research Associate at Rice University
Summer 2023 – Summer 2025 (expected)

Instructor [Calculus II] at Michigan State University
Spring 2023

Research Associate at Michigan State University
Summer 2022 – Summer 2023

Instructor [Introduction to Abstract Mathematics] at University of California, Irvine
Summer 2022

Teaching Assistant at University of California, Irvine
Summer 2021 – Fall 2021

Visiting Researcher at University of Potsdam, Potsdam (Germany)
Fall 2020 – Fall 2021

Graduate Student Researcher at University of California, Irvine
Fall 2020 – Spring 2021

Teaching Assistant at University of California, Irvine
Fall 2016 – Summer 2020

Teaching Experience

Instructor [Calculus II] at Rice University
Spring 2024
Instructor [Calculus II] at Michigan State University
Spring 2023
Instructor [Introduction to Abstract Mathematics] at University of California, Irvine
Summer 2022
Teaching Assistant at University of California, Irvine
Fall 2016 – Fall 2021

Fall	2021	Graduate Real Analysis
Summer	2021	Linear Algebra
Summer	2020	Multi-Variable Real-Valued Calculus
Spring	2020	Linear Algebra
Winter	2020	Linear Algebra
Fall	2019	Real Analysis (grader)
Summer	2019	Real Analysis
Spring	2019	Real Analysis (grader)
Winter	2019	Real Analysis (grader)
Fall	2018	Graduate Real Analysis (grader)
Summer	2018	Multi-Variable Real-Valued Calculus
Spring	2018	Single-Variable Integral Calculus
Winter	2018	Single-Variable Integral Calculus
Fall	2017	Intro/Mathematical Logic
Summer	2017	Single-Variable Integral Calculus
Spring	2017	Intro/Abstract Mathematics
Winter	2017	Single-Variable Integral Calculus
Fall	2016	Single-Variable Differential Calculus

Mentorship Experience

Directed Reading Program at Rice University (2023 – 2025)

Summer	2024	Miles Gantcher	Real Algebraic Geometry: Semialgebraic sets
Summer	2024	Mike Guo	Real Algebraic Geometry: Semialgebraic sets
Summer	2024	William Volen	Real Algebraic Geometry: Semialgebraic sets
Fall	2023	Thomas Moore	Linear Algebra: Cramer's rule
Fall	2023	Mani Puram	Linear Algebra: Quadratic Forms

Website: `https://mathweb.rice.edu/directed-reading-program`

Professional Service

Referee Service for Journal of Spectral Theory (August 2022)
Website: `https://ems.press/journals/jst`

Presentations Organized

AMS San Antonio, TX 2024 Special Session (September 2024)
Host: University of Texas, San Antonio
Website: `https://www.ams.org/meetings/sectional/2319_program_ss7.html#title`

SIAM TX-LA 2023 Mini-Symposium MS12 (November 2023)
Host: University of Louisiana, Lafayette
Website: `https://userweb.ucs.louisiana.edu/~C00424602/SIAMTXLA2023/minisymposia.html`

Presentations

- Undergraduate Mathematics Colloquium (April 2024)
  Host: Rice University
  Talk: *Unveiling Quantum Mysteries: The spectrum, dynamics, and the Hofstadter butterfly*
- Special Session (January 2024)
  Host: Joint Mathematics Meetings
  Talk: *Spectral estimates of dynamically-defined and amenable operator families*
- Seminar (November 2023)
  Host: Texas State University
  Talk: *Spectral estimates of dynamically-defined and amenable operator families*
- Spectral Theory and Applications (October 2023)
  Host: Texas A&M University
  Talk: *Spectral estimates of dynamically-defined and amenable operator families*
- Seminar (September 2023)
  Host: University of Houston
  Talk: *Spectral estimates of dynamically-defined and amenable operator families*
- Postdoc Colloquium Talks (September 2023)
  Host: Rice University
  Talk: *Research interests and past projects*
- Great Lakes Mathematical Physics Meeting (June 2023)
  Host: Oberlin College
  Talk: *Spectral estimates of dynamically-defined and amenable operator families*
- Spring Southeastern Sectional Meeting (March 2023)
  Host: American Mathematical Society
  Theme: Quasi-periodic operators and quantum graphs
  Talk: *Spectral estimates of dynamically-defined and amenable operator families*
- Seminar (December 2022)
  Host: Michigan State University
  Talk: *The Gap Labeling Theorem*
- Seminar (September 2022)
  Host: Michigan State University
  Talk: *Spectral estimates of dynamically-defined and amenable operator families*
- Seminar (October 2021)
  Host: University of California, Irvine
  Talk: *Spectral estimates of dynamically-defined and amenable operator families*
- Society for Industrial and Applied Mathematics speaker series (September 2021)
  Host: Potsdam SIAM Student Chapter
  Talk: *On the spectra of separable 2D almost Mathieu operators*
- Seminar (September 2021)
  Host: Rice University
  Talk: *Spectral estimates of dynamically-defined and amenable operator families*

- International Congress on Mathematical Physics (August 2021)
  Host: International Association of Mathematical Physics
  Theme: S11 - Quantum Mechanics & Spectral Theory
  Poster: *On the spectra of separable 2D almost Mathieu operators*
- Mathematical Physics, Dynamical Systems, Infinite-Dimensional Analysis (July 2021)
  Host: Moscow Institute of Physics and Technology
  Talk: *On the spectra of separable 2D almost Mathieu operators*
- Great Lakes Mathematical Physics Meeting (June 2021)
  Host: Michigan State University
  Talk: *On the spectra of separable 2D almost Mathieu operators*
- Learning Seminar (May 2021)
  Host: University of California, Irvine
  Talk: *Explaining amenability and its potential application to spectral theory*
- Virtual Spring Western Sectional Meeting (May 2021)
  Host: American Mathematical Society
  Theme: Localization and delocalization in ergodic quantum systems, III
  Talk: *On the spectra of separable 2D almost Mathieu operators*
- Learning Seminar (March 2021)
  Host: Texas A&M University
  Talk: *Explaining a 1990 paper: theorem and proof*
- Learning Seminar (March 2021)
  Host: University of California, Irvine
  Talk: *Explaining a 2019 paper: theorem and proof*

Selected Coursework

• Ergodic Schrödinger Operators	instructor: Svetlana Jitomirskaya, Abel Klein
• Ergodic Theory	instructor: Anton Gorodetski
• Probability	instructor: Michael C. Cranston
• Functional Analysis	instructor: Svetlana Jitomirskaya
• Real Analysis	instructor: Svetlana Jitomirskaya