

Curriculum Vitae

Alberto Takase

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Professional Preparation

Northwestern University, Evanston	Mathematics	B.A., 2016
University of California, Irvine	Mathematics	Ph.D., 2022 (expected)

Appointments

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

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.

Synergistic Activities

- (1) Invited online speaker at Tennessee State University hosted by the math department on October 8, 2021. The first 30 minutes of the talk were spent on the experience of being a Ph.D. student while the remaining 20 minutes were spent on graduate school application tips.
- (2) Mentor at Math CEO in Fall 2016. Math CEO is a Community Educational Outreach program designed to increase the number of talented students who pursue higher education in STEM. The role of a mentor is to lead a group of 6–7 middle schoolers from diverse backgrounds with fun mathematics that progressively increases in difficulty. In addition to mentoring, attendance to the 2016–2017 Math CEO coaching seminars resulted in learning to work with youth with an emphasis on math content, inquiry-based pedagogy, and culturally sensitive practices.
- (3) Creator of upper-division review material for the Math Pre-requisite Review Materials Program. The program provides students a freely available online resource to more efficiently prepare for Winter 2020 courses as a response to COVID. Each module created consisted of 5–8 short videos, notes, practice problems, and solutions. To achieve the goal of providing only the pre-requisite content, consultation with numerous instructors was part of the process.
- (4) Mentor at the Directed Reading Program in Fall 2021. The program pairs undergraduates with graduate student mentors to participate in a reading course. The goal is to give students the opportunity to learn math while building skills such as communication, reading, and writing.

Presentations

- 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