



ALBERTO ACEVEDO

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[Click here for my Web Page](#)

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EDUCATION

Ph.D. <i>Applied Mathematics</i> (click for my dissertation) University of Arizona	Aug 2017 – November 2023 Tucson, Arizona, USA
Ph.D. Minor <i>Physics</i> University of Arizona	Aug 2017 – November 2023 Tucson, Arizona, USA
Masters of Science <i>Applied Mathematics</i> University of Arizona	August 2017– May 2020 Tucson, Arizona, USA
Bachelors of Science <i>Mathematics</i> California State University of San Bernardino	September 2011 – June 2015 San Bernardino, California, USA
Bachelors of Science <i>Physics</i> California State University of San Bernardino	September 2011 – June 2015 San Bernardino, California, USA

RESEARCH INTEREST

My interests lie primarily in Open Quantum Systems, Quantum Information and Computation, Quantum Optics, Quantum Foundations, Quantum Many-Body Physics, Operator Theory and Stochastic Processes.

PUBLICATIONS, PREPRINTS AND PH.D. DISSERTATION

- [1] A. Acevedo, J. Wehr, J. Korbicz. "[Spectrum Broad Cast Structures from von Neumann type interaction Hamiltonians](#)", Preprint (2023).
- [2] A. Acevedo, J. Wehr. "[Asymptotic Quantum State Discrimination for Mixtures of Unitarily Related States](#)", Preprint (2023).
- [3] A. Acevedo (Ph.D. Dissertation) "[Spectrum Broadcast Structures for Discrete and Continuous Variables in Open Quantum Systems](#)", Submitted to the University of Arizona's Mathematics Department In September of 2023, Defended on November 7th of 2023.
- [4] A. Acevedo, B. Leroux, M. Curry, N. Malaya and S H. Joshi "[Vandermonde Wave Function Ansatz for Improved Variational Monte Carlo](#)", in The 5th Deep Learning on Supercomputers Workshop: Proc. of the 2020 int Conf. for High-Performance Computing, Networking, Storage and Analysis [SC20](#) [Online].

AWARDS

The University of Arizona's GPSC Travel grant For participating in the SOLVAY 2019 workshop on Quantum Simulation (click for details)	Spring 2019 Brussels, Belgium
Graduate Access Fellowship Domestic Academic Scholarship (click for details)	Fall 2017 - Summer 2018 University of Arizona
Graduate College Fellowship Domestic Academic Scholarship (click for details)	Fall 2017 - Summer 2018 University of Arizona

FUNDED CONFERENCES, SUMMER SCHOOLS, AND WORKSHOPS

SOLVAY 2019 workshop on Quantum Simulation Université Libre de Bruxelles (Funded by GPSC Universtiy of Arizona)	February 18-20, 2019 Brussels, Belgium
First-Passage Percolation and Related Models International Centre for Theoretical Sciences Bangalore (Funded by The NSF)	July 11-29, 2022 Bangalore, India

Séminaire de Mathématiques Supérieures on Periodic and Ergodic Spectral Problems	July 11-29, 2023
Université de Montréal (Funded by The NSF)	Montréal, Canada
Advanced Studies Institute in Analysis on Fractal Spaces and Dynamical Systems	August 4-13, 2023
Urgench State University (Funded by The NSF)	Urgench, Uzbekistan
Potential Theory Workshop	September 28th- October 7th, 2023
Centro de Investigación en Matemáticas (Funded by The NSF)	Guanajuato, Mexico

TEACHING EXPERIENCE

Business Calculus Instructor (MATH 116 Online Course)	Summer 2023
The University of Arizona	Tucson, Arizona, USA
Business Calculus Instructor (MATH 116)	Spring 2023
The University of Arizona	Tucson, Arizona, USA
Precalculus Instructor (MATH 120R)	Fall 2022
The University of Arizona	Tucson, Arizona, USA
Differential Equations Discussion Session TA (MATH 254)	Fall 2020
The University of Arizona	Tucson, Arizona, USA
Exploring and Understanding Data TA (MATH107 Online Course)	Summer 2020
The University of Arizona	Tucson, Arizona, USA
Business Calculus Instructor (MATH 116)	Spring 2019
The University of Arizona	Tucson, Arizona, USA
College Algebra Instructor (MATH 112)	Fall 2018
The University of Arizona	Tucson, Arizona, USA
Exploring and Understanding Data TA (MATH107)	Spring 2018
The University of Arizona	Tucson, Arizona, USA
College Algebra Instructor (MATH 112)	Fall 2017
The University of Arizona	Tucson, Arizona, USA

PAST PROJECTS/INTERNSHIPS

Summer research intern <i>Topic : (Quantum Montecarlo methods for the N body problem)</i>	Summer 2020
IPAM/ AMD virtual internship (click for publication) (click for report)	
Summer research Aid <i>Topic : (Computational methods for Quantum Chemistry with Qiskit)</i>	Summer 2019
Argonne National Laboratory (click for presentation)	Illinois, USA
Internship <i>Topic : Differential Geometry: Linear dependencies of curvature tensors</i>	Summer 2014
California State University of San Bernardino (click for report)	San Bernardino, California, USA
Internship <i>Topic : Quantum dynamics project on Lie algebra methods</i>	Summer 2013
Brigham Young University	Provo, Utah, USA
Internship <i>Topic : Coloring problems in graph theory</i>	Summer 2012
California State University of San Bernardino (click for report)	San Bernardino, California, USA

TALKS

"Asymptotical Distinguishability of Quantum Mixtures" (click for slides)	Sept 20 (2023)
The University of Arizona Applied Math Student Seminar (announcement)	Tucson, Arizona, USA
"Machine Learning as an Alternative Wavefunction Ansatz to Improve Variational Monte Carlo"	Nov 11 (2020)
The International Conference for High-Performance Computing, Networking, Storage, and Analysis (click for slides) (announcement)	Virtual Conference, USA
"Open Quantum Systems" (click for slides)	April 24 (2020)
The University of Arizona Applied Math Student Seminar (announcement)	Tucson, Arizona, USA

"Decoherence and Spectrum Broadcast Structures"

The University of Arizona Applied Math Student Seminar ([announcement](#))

April 15 20 (2019)

Tucson, Arizona, USA

"Quantum, Lie Algebras and Dissipation" ([click for slides](#))

Colorado State University, APS Four Corners Conference ([announcement](#))

Oct 18 (2014)

Denver, Colorado, USA

GRADUATE COURSEWORK TAKEN DURING GRADUATE CAREER (UNIVERSITY OF ARIZONA)

Quantum Mechanics(2 semesters), Electrodynamics, Statistical Machine Learning, General Relativity, Partial Differential Equations (Three semesters), Stochastic Processes, Numerical Analysis (2 semesters), Analysis (2 Semesters), Mathematical Methods in Applied Mathematics(2 semesters), Complex Analysis, Probability Theory, Spectral Theory and Quantum Mechanics (Topics Course), Monte Carlo Methods.

SKILLS

Languages: English (Native), Spanish (Native), French (B2), Russian(A2), Japanese(N4)

Programming: Python (NumPy, SciPy, Matplotlib, Pandas, Pytorch, sklearn, Qutip, Qiskit), MATLAB, R

Document Creation: LaTeX