

Curriculum Vitae for Esteban Cárdenas

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Education

2019 - Present, Ph.D. in Mathematics, UT Austin. Advised by Thomas Chen.

2016 - 2019, B.S. in Mathematics, PUC Chile. Advised by Georgi Raikov.

2014 - 2018, B.S. in Physics, PUC Chile. Advised by Edgardo Stockmeyer.

Research articles

Preprints

- [1] E. CÁRDENAS AND D. MITROUSKAS. Radiative corrections to the dynamics of a tracer particle coupled to a fast scalar field, (2024).
- [2] E. CÁRDENAS, B. PAVEZ AND E. STOCKMEYER. Tunneling estimates for two-dimensional perturbed magnetic Dirac systems, (2023).
- [3] E. CÁRDENAS, J.K MILLER AND N. PAVLOVIĆ. On the effective dynamics of Bose-Fermi mixtures, (2023).
- [4] E. CÁRDENAS AND T. CHEN. Quantum Boltzmann dynamics and bosonized particle-hole interactions in fermion gases, (2023).

Published

- [5] E. CÁRDENAS, N. PAVLOVIĆ AND W. WARNER. Derivation of a Boltzmann equation with higher-order collisions from a generalized Kac model, to appear in *SIAM J. Math. Anal.* (2024).
- [6] E. CÁRDENAS. Norm convergence of confined fermionic systems at zero temperature, *Lett Math Phys* (114), 38 (2024).
- [7] E. CÁRDENAS. Tracer particles coupled to an interacting boson gas, *J. Funct. Anal.* 282 (8), 109403 (2022).
- [8] E. CÁRDENAS, D. HUNDERTMARK, E. STOCKMEYER AND S. VUGALTER. On the asymptotic dynamics of 2-D magnetic quantum systems, *Ann. Henri Poincaré* 22, 415-445, (2021).
- [9] E. CÁRDENAS, G. RAIKOV AND I. TEJEDA. Spectral properties of Landau Hamiltonians with non-local potentials, *Asympt. Anal.* 120, 227-371 (2020).
- [10] E. CÁRDENAS, AND M. C. DEPASSIER. Domain-wall dynamics for an in-plane magnetized thin film with a large perpendicular hard-axis anisotropy including the Dzyaloshinskii-Moriya interaction, *Phys. Rev. B* 98 (13), 134429 (2018).

Conference articles

- [1] E. CÁRDENAS. Pseudo-Differential Perturbations of the Landau Hamiltonian. In: Miranda, P., Popoff, N., Raikov, G. (eds) *Spectral Theory and Mathematical Physics. Latin American Mathematics Series*. Springer, Cham. (2020)

Distinction

Provost's Graduate Excellence Fellowship, UT Austin. August 2019 – July 2024.

Presentations

- 2023 *AG Seminar, Mathematische Physik*. Karlsruher Institut für Technologie.
Analysis and Math. Physics Seminar. Ludwig-Maximilian Universität München.
Mathphys Analysis Seminar. Institute of Science and Technology Austria.
Analysis Seminar. UT Austin.
- 2022 *Munich-Aarhus-Santiago Seminar in Mathematical Physics*.
- 2021 *AG Seminar, Mathematische Physik*. Karlsruher Institut für Technologie.
- 2018 *International Conference Spectral Theory and Mathematical Physics*. PUC.

Teaching Experience

- 2023 *Teaching Assistant*. Theory of Probability (graduate). UT Austin, Fall semester.
- 2022 *Teaching Assistant*. Calculus for Economics. UT Austin, Fall semester.
- 2021 *Teaching Assistant*. Real Analysis (undergraduate). UT Austin, Fall semester.
- 2015 *Teaching Assistant*. Electricity and Magnetism. PUC.
Teaching Assistant. Classical Mechanics for Engineering. PUC.

Service

Referee for *Kinetic and Related Models*.

Organizer of the Junior Analysis Seminar. UT Austin, 2022–2023.

Member of the Graduate Student Committee. UT Austin, 2021–2022.

Undergraduate Mentor for Grant Kupler. Directed Reading Program, UT Austin. Fall 2020.

Languages

Spanish (native), English (fluent), German (basic).