

Personal

Citizenship: Germany. Married.

Education

2016–2022 **PhD studies**, *The University of Texas at Austin*, Mathematics, Dissertation title: 'Emergent phenomena in an interacting Bose gas', expected graduation: August 2022.

2013–2016 **Master studies**, *Karlsruhe Institute of Technology*, Physics.

2013–2015 **Master studies**, *Karlsruhe Institute of Technology*, Mathematics.
Joint master's thesis: "Asymptotic behavior of the ground state energy of a Fermionic multipolaron"

2009–2013 **Bachelor studies**, *Karlsruhe Institute of Technology*, Physics.

2011–2013 **Bachelor studies**, *Karlsruhe Institute of Technology*, Mathematics.
Joint bachelor's thesis: "The solution of the 2D Ising Model"

Academic appointments

2015–2016 **Research Assistant**, *Karlsruhe Institute of Technology*, Department of Mathematics, Mentor: Dirk Hundertmark.

2022– **Postdoctoral Associate**, *University of Minnesota*, Department of Mathematics, Mentor: Mitch Luskin.

Teaching experience

2015–2016 **Teaching Assistant**, *Karlsruhe Institute of Technology*.

2018–2020 **Teaching Assistant**, *The University of Texas at Austin*.

Mentoring experience

2017– **Directed Reading Program**, *Brandon Whitely (current: Analytics and Modeling Associate at Fannie Mae), Jenson Stevens, Ethan Jana, Juan Antonio Artero Calvo*, UT Austin.

Publications

- 2021 **On the emergence of quantum Boltzmann fluctuation dynamics near a Bose-Einstein Condensate**, *with Thomas Chen*, arXiv:2106.03825, (submitted).
- 2021 **Convergence rate towards the fractional Hartree-equation with singular potentials in higher Sobolev norms**, *Rev. Math. Phys.* 33, 2150029.
- 2017 **Derivation of the Hartree equation for compound Bose gases in the mean field limit**, *with Ioannis Anapolitanos and Dirk Hundertmark*, *Rev. Math. Phys.* 29, 1750022.
- 2016 **A simple proof of convergence to the Hartree dynamics in Sobolev trace norms**, *with Ioannis Anapolitanos*, *Journal of Mathematical Physics* 57.12: 122108.

Presentations and talks

Invited talks

- 2022 **On quantum Boltzmann fluctuation dynamics in the presence of a BEC**, *PDE seminar*, University of Wisconsin-Madison, online. 02/28/2022
- 2022 **On quantum Boltzmann fluctuation dynamics in the presence of a BEC**, *GAuS seminar*, TU Braunschweig, Germany, online. 01/10/2022
- 2021 **On quantum Boltzmann fluctuation dynamics in the presence of a BEC**, *SIAM TX LA 4th Annual Conference*, South Padre Island/TX, USA. 11/07/2021
- 2021 **On quantum Boltzmann fluctuation dynamics in the presence of a BEC**, *Math physics seminar*, Karlsruhe Institute of Technology, online. 08/09/2021
- 2020 **Convergence rate towards the fractional Hartree-equation with singular potentials in higher Sobolev norms**, *Relativistic Fluids at the Intersection of Mathematics and Physics*, MFO, Oberwolfach, Germany, Online conference. 12/18/2020

2018 **A simple proof of convergence to the Hartree dynamics in Sobolev trace norms**, *Math physics seminar*, UTSA, San Antonio/TX, USA.
12/07/2018

Oral Presentations

2022 **Quantum Boltzmann corrections for a BEC excitation cloud**, *The Twelfth IMACS International Conference on Nonlinear Evolution Equations and Wave Phenomena: Computation and Theory*, University of Georgia, Athens/GA, USA.
04/01/2022

2021 **On quantum Boltzmann fluctuation dynamics in the presence of a BEC**, *Math physics seminar*, Rutgers University, Piscataway/NJ, USA (08/12/2021, online), Brown, Providence/RI, USA (10/08/2021, online), UBC, Vancouver, CA (11/16/2021, online), UMd, College Park/MD, USA (11/18/2021, online).

2018 **Derivation of the Hartree equation for compound Bose gases in the mean field limit**, *MCQM*, La Sapienza, Roma, Italy.
03/2018

2017 **A simple proof of convergence to the Hartree dynamics in Sobolev trace norms**, *TexAMP*, UT Austin, Austin/TX, USA.
11/04/2017

Poster Presentations

2018 **Derivation of the Hartree equation for compound Bose gases in the mean field limit**, *ICMP*, McGill, Montreal/QC, Canada.
08/2018

2018 **Derivation of the Hartree equation for compound Bose gases in the mean field limit**, *MNAQD*, UMD, College Park/Md, USA.
06/20/2018

2017 **A simple proof of convergence to the Hartree dynamics in Sobolev trace norms**, *Recent Advances on Particle Systems in Kinetic Theory; in honour of A. Bobylev*, UT Austin, Austin/TX, USA.
05/09/2017

Awards and Honors

2016–2021 **Provost Excellence Fellowship**, *The University of Texas at Austin*, USA.

2014–2015 **Deutschlandstipendium**, *Karlsruhe Institute of Technology*, Germany.

Community Service

2019– **Volunteer tutor**, *Saturday Morning Math Group*, Outreach program aimed at junior high and high school to introduce into extracurricular math topics.

Academic Service

2021– **Referee**, *Journal of Mathematical Physics*.

2017–2020 **Reviewer**, *MathSciNet*.