

Ryan Denlinger

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Contact Information

Ryan Denlinger
The University of Texas at Austin
Department of Mathematics, RLM 8.100
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Research Interests

Partial differential equations, kinetic theory, BBGKY hierarchies.

Education

New York University
Ph.D. in Mathematics (*May 2016*)

California Institute of Technology
B.S. in Applied & Computational Mathematics (*June 2011*)

Professional Experience

The University of Texas at Austin (August 2016 – present)
Instructor

New York University (May 2013 – May 2016)
Teaching Assistant

Honors, Awards and Fellowships

National Science Foundation GRFP *Honorable Mention* (2011, 2012)

Awarded by New York University
MacCracken fellowship, 2011-2016.

Awarded by California Institute of Technology
George W. Housner Student Discovery Fund (2010-2011), 6000USD.
Summer Undergraduate Research Fellowship (SURF), 2010.
Summer Undergraduate Research Fellowship (SURF), 2009.
McKinney writing prize in non-fiction, 2009.

Peer-Reviewed Publications (*accepted or published*)

T. Chen, R. Denlinger and N. Pavlović, *Local well-posedness for Boltzmann's equation and the Boltzmann hierarchy via Wigner transform*, provisionally accepted (minor revisions required) to *Communications in Mathematical Physics*. (2018) arXiv:1703.00751

R. Denlinger. *Virial estimates for hard spheres*, to appear in *Contemp. Math.*: AMS (2018). arXiv:1605.00607

R. Denlinger, *The propagation of chaos for a rarefied gas of hard spheres in the whole space*, *Archive for Rational Mechanics and Analysis*, vol. 229, no. 2, pp. 885–952, 2018. arXiv:1605.00589

R. Denlinger, *Structure of correlations for the Boltzmann-Grad limit of hard spheres*, *Journal of Mathematical Physics*, vol. 58, no. 12, 2017. arXiv:1707.02274

R. Denlinger, Z. Gimbutas, L. Greengard, & V. Rokhlin. *A fast summation method for oscillatory lattice sums*, *Journal of Mathematical Physics*, vol. 58, no. 2, 2017. arXiv:1609.08523

Articles submitted *to peer-reviewed journals*

T. Chen, R. Denlinger and N. Pavlović, *Moments and regularity for a Boltzmann equation via Wigner transform*. arXiv:1804.04019

Articles in Preparation

T. Chen, R. Denlinger and N. Pavlović, *On L^2 -critical Boltzmann equations in the plane.* (2018)

R. Denlinger, *Observables and strong one-sided chaos in the Boltzmann-Grad limit.* arXiv:1706.09961

Teaching Experience

UT Austin

Fall 2017, M427J (two sections), *Differential Equations with Linear Algebra*

Spring 2017, M341, *Linear Algebra and Matrix Theory*

Fall 2016, M328K, *Introduction to Number Theory*

New York University

Teaching Assistant: Spring 2015, Math-UA 282, *Complex Variables*

Teaching Assistant: Spring 2014, Math-UA 264, *Chaos and Dynamical Systems*

Teaching Assistant: Summer 2013, Math-UA 121, *Calculus I*

Additional teaching or mentorship activities

- *Fall 2018: Developed a portion of a sequence of Python-based learning modules for use in M340L-EE at UT Austin; joint collaboration with Professor John Gilbert.*
- *Spring 2018, Fall 2017, Spring 2017. Directed Reading Program (DRP) mentor at UT Austin Math dept.*

Invited Talks (*all non-contributed talks*)

Upcoming: October 20, 2018. University of Michigan (Ann Arbor, MI). *Special Session on Nonlocality in Models for Kinetic, Chemical, and Population Dynamics; AMS Fall Central Sectional Meeting 2018.*

July 6, 2018. (Taipei, Taiwan) *Special Session 111: Nonlinear Evolution Equations; 12th AIMS Conference on Dynamical Systems, Differential Equations and Applications.*

February 13, 2017. California Institute of Technology (Pasadena, CA). *35th Annual Western States Mathematical Physics Meeting.*

March 28, 2016. University of Wisconsin-Madison (Madison, WI). *PDE and Geometric Analysis Seminar*.

September 28, 2016. University of Texas (Austin, TX). *Analysis/Mathematical Physics Seminar*.

Contributed talks

Upcoming: October 27, 2018. Baylor University (Waco, TX). *Texas Analysis and Mathematical Physics Symposium*.

November 4, 2017. University of Texas (Austin, TX). *Texas Analysis and Mathematical Physics Symposium*.

November 21, 2011. 64th Annual Meeting of the APS Division of Fluid Dynamics (Baltimore, MD). Session L20: Interfacial/Thin Film Instability V, L20.00001

November 21, 2010. 63rd Annual Meeting of the APS Division of Fluid Dynamics (Long Beach, CA). Session AP: Nanofluids I, AP.00003