

Chanwoo Kim

CONTACT INFORMATION	Department of Mathematics University of Wisconsin-Madison Van Vleck 717 480 Lincoln Dr. Madison, WI 53706	<i>Office Phone:</i> +1 608 265 2494 <i>Email:</i> chanwoo.kim@wisc.edu http://math.wisc.edu/~ckim
ACADEMIC APPOINTMENTS	University of Wisconsin-Madison: tenure-track Assistant Professor (2014–) University of Cambridge: Herchel Smith Postdoctoral Fellow (2011–2014), Mentor: Clement Mouhot	
EDUCATION	Ph.D. in Mathematics, Brown University, Advisor: Yan Guo, 2011 B.Sc. in Mathematics and Minor in Physics (summa cum laude), Seoul National University, Korea, 2006	
RESEARCH INTERESTS	Nonlinear partial differential equations, Kinetic theory, Fluid dynamics	
PUBLICATIONS	<ul style="list-style-type: none">• Formation and propagation of discontinuity for Boltzmann equation in non-convex domains, <i>Comm.Math.Phys.</i> 308 (2011) 641-701 link• Boltzmann equation with large external potential, <i>Comm.PDE</i> 39 (2014) 1393-1423 link• (with S.Yun) The Boltzmann equation near a rotational local Maxwellian, <i>SIAM J.Math.Anal.</i> 44 (2012) 2560-2598 link• (with I.Tice; Y.Wang) The viscous surface-internal wave problem: global well-posedness and decay, <i>Arch.Rational Mech.Anal.</i> 212 (2014) 1-92 link• (with R.Esposito; Y.Guo; R.Marra) Non-isothermal Boundary in the Boltzmann theory and Fourier law, <i>Comm.Math.Phys.</i> 323 (2013) 177-239 link• (with Y.Guo; D.Tonon; A.Trescases) Regularity of the Boltzmann equation in convex domains, <i>Invent.Math.</i> 207 (2017) 115–290 link• (with Y.Guo; D.Tonon; A.Trescases) BV-regularity of the Boltzmann equation in Non-convex Domains, <i>Arch.Rational Mech.Anal.</i> 220 (2016) 1045-1093 link• (with R.Esposito; Y.Guo; R.Marra) Stationary solutions to the Boltzmann equation in the Hydrodynamic limit, 79 pages, (arXiv: 1502.05324) link• (with D.Lee) The Boltzmann equation with specular boundary condition in convex domains, <i>online published in Comm.Pure Appl.Math.</i> (arXiv: 1604.04342) link• (with I.Tice) Dynamics and stability surface waves with Surfactants, <i>SIAM J. Math. Anal.</i>, 49(2), 1295–1332 link• (with D.Lee) Decay of the Boltzmann equation with the specular boundary condition in non-convex cylindrical domains, 49 pages, (arXiv: 1702.03475) link	

GRANT

- NSF: 2015–2018 (USD 177,992);
- Herchel Smith Foundation, 2011–2014 (GBP 30,000)
- Korea Foundation for Advanced Studies, 2006–2011

TEACHING

University of Wisconsin, Madison, WI

- Topics in PDE (Math 821); Tech.ODE (Math 319), Fall 2017
- Graduate PDE 2 (Math 820), Spring 2017
- Tech.ODE (Math 319), Spring 2016
- Graduate PDE 1 (Math 819); Calculus (Math 211), Fall 2015
- Graduate PDE 2 (Math 820); Tech.ODE (Math 319), Spring 2015
- Tech.ODE (Math 319), Fall 2014

University of Cambridge, Cambridge, UK

- Topics in Kinetic Theory, Co-Instructor, Lent term, 2014
- Topics in Kinetic Theory, Co-Instructor, Michaelmas term, 2012

Brown University, Providence, RI

- Introductory Calculus II, Instructor, Fall 2008
- Introductory Calculus II, TA, Spring 2008
- Introductory Calculus I, TA, Fall 2007

TALKS

- Mid-west PDE workshop, UIC, Sep/2017 (scheduled)
- 6-hour intensive lectures, Summer school at USC, May/2017
- Workshop talk, Boundary value problems and multi-scale coupling methods for kinetic equations, Madison, April/2016
- 3-hour intensive lectures, KAIST, Dec/2015
- Session talk, SIAM Conference on Analysis of Partial Differential Equations, Scottsdale, Arizona, Dec 7 - Dec 10, 2015
- Kinetic theory with applications in physical sciences, University of Maryland, College Park, Nov 9 - Nov 13, 2015 (canceled)
- International Conference on Nonlinear Analysis, Institute of Mathematics, Academia Sinica, Taiwan, Oct 30 - Nov 3, 2015 (canceled)
- PDE seminar, Minnesota, Minneapolis, Sep/2015
- PDE session talk, International Congress of Mathematical Physics, Santiago Chile, July/2015
- CNA seminar, CMU, March/2015
- Analysis seminar, UW-Madison, Feb/2015

- Plasma Theory Seminar, UW-Madison, Dec/2014
- PDE seminar, UIUC, Oct/2014 (canceled)
- PDE seminar, UW-Madison, Oct/2014
- PDE seminars (2 hours), Postech, Aug/2014
- National Taiwan University, June/2014
- Analysis seminar, Edinburgh, March/2014
- Workshop talk, Cambridge, March/2014
- Colloquium, Wisconsin, Madison, Dec/2013
- Conference talk, Oberwolfach, Dec/2013
- Colloquium, SNU, Nov/2013
- PDE seminar, Brown Univ., Nov/2013
- Session talk, AMS sectional meeting, Nov/2013
- Colloquium, UC Riverside, Nov/2013
- PDE seminar, Lyon, Oct/2013
- Conference Talk, Cambridge, June/2013
- Workshop Talk, Academia Sinica, April/2013
- Informal Lectures(2 hours), Academia Sinica, April/2013
- Working Kinetic Seminar, University of Cambridge, Feb/2013
- Workshop Talk, SNU, Jan/2013
- PDE Seminar, POSTECH, Dec/2012
- 4-hour intensive lectures, KAIST, Dec/2012
- PDE Seminar, SNU, Dec/2012
- PDE Seminar, Chung-Ang Univ., Dec/2012
- Fluid Dynamic Seminar, ICMAT (Madrid), Nov/2012
- Conference Talk, BIRS (Banff), Nov/2012
- PDE Seminar, Brown Univ., Nov/2012
- Analysis Seminar, Princeton Univ., Nov/2012
- Working Seminar, Univ. of Cambridge, May/2012
- Contribution Talk, SIAM conference on analysis of PDE, Nov/2011
- Conference Talk, Boltzmann models in kinetic theory, ICERM, Nov/2011
- PDE Seminar, SKKU, Aug/2011
- PDE Seminar, POSTECH, Aug/2011
- PDE Seminar, Univ. of Cambridge, May/2011
- PDE Seminar, Brown Univ., Oct/2010
- Conference Talk, Workshop in Kinetic theory, Stanford Univ., June/2010
- Conference Talk, Kinetic FRG Workshop, Brown Univ., May/2010

INVITED
CONFERENCES

- Oberwolfach Workshop, Dec/2017 (scheduled)
- Mid-west PDE workshop, UIC, Sep/2017 (scheduled)
- Summer school at USC, May/2017
- Boundary value problems and multi-scale coupling methods for kinetic equations, Madison, April/2016
- SIAM Conference on Analysis of Partial Differential Equations, Scottsdale, Arizona, Dec 7 - Dec 10, 2015
- Ki-net conference on kinetic theory, University of Maryland, College Park, Nov 9 - Nov 13, 2015 (canceled)
- International Conference on Nonlinear Analysis, Institute of Mathematics, Academia Sinica, Taiwan, Oct 30 - Nov 3, 2015 (canceled)
- International Congress of Mathematical Physics, Santiago Chile, July 27- August 1, 2015
- Kinetic and Related Equations, BIRS, July/2015 (declined)
- Workshop on Kinetic Theory and Boundary Behavior, National Taiwan Univ., Taiwan, Jun 25, 2014
- Oxbridge PDE conference, Cambridge, March/2014
- Classical and Quantum Mechanical Models of Many-Particle Systems, Oberwolfach, Dec/2013
- AMS Section Meeting, Riverside, Nov/2013
- Mathematical topics in Kinetic Theory, Cambridge, June/2013
- Boundary Phenomena for Evolutionary Partial Differential Equations, Academia Sinica, Taipei, April/2013
- PARC-SINICA Joint Workshop, SNU, Jan/2013
- Nonequilibrium Statistical Mechanics: Mathematical Understanding and Numerical Simulation, BIRS, Nov/2012
- Kinetic theory and Fluid mechanics, Lyon, Mar/2012
- Boltzmann models in kinetic theory, ICERM, Nov/2011
- Equadiff conference, Loughborough, UK, Aug/2011 (declined)
- Workshop on Kinetic theory, Stanford Univ., June/2010
- Kinetic FRG workshop, Brown Univ. May/2010
- Kinetic FRG workshop, Univ. of Maryland, March/2009

VISITING
POSITIONS

KAIST Center for Mathematical Challenges: Visiting Member (2015–)

SERVICES

- Organizer of the Partial Differential Equations seminar and Geometric Analysis, University of Wisconsin-Madison, 2014–
- Co-organizer of the Geometric Analysis and Partial Differential Equations seminar, University of Cambridge, 2011–2014
- Department Committees: Graduate Admission (2014–2016), Colloquium (2014–2016), Graduate Advising (2014–2017), Undergraduate Scholarships & Awards (2016–), Graduate Program (2017–)
- Committee member of dissertation defense: Lei Li (June 2015), Jongchon Kim (April 2017), Tau Shean Lim (May 2017); Committee member of speciality exams: Jingrui Cheng (April 2015), Tau Shean Lim (April 2015), Liu Liu (April 2016), Yuhua Zhu (Oct 2016), Hanqing Lu (Nov 2016), Ruiwen Shu (April 2017), Di Fang (May 2017), Hong Jin Jun (June 2017, Dept. of Civil and Environmental Engineering)
- Journal Referee: *Comm. Pure Appl. Math.*; *Arch. Rat. Mech. Anal.*; *Commun. Math. Phys.*; *SIMA*; *J. Differential Equations*; *J. Stat. Phys.*; *Kinet. Relat. Models*; *Nonlinearity*; *Nonlinear Anal.*; *Comm. Pure Appl. Anal.*, etc.

ADVISING

- Postdocs: Donghyun Lee (UW-Madison, 2015–2018)
- Ph.D students: Yunbai Cao (UW-Madison)
- Undergraduate: Hangyu Pi (UW-Madison, 2017)

updated June/2017