KENTARO HARA

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RESEARCH INTERESTS

Computational fluid and plasma dynamics; kinetic theory and simulations; space propulsion; rarefied gas dynamics; low temperature plasmas; plasma sources (capacitively coupled plasmas); atmospheric-pressure plasmas; plasma physics (oscillations, instabilities, plasma-wall interactions, plasma-wave interactions); light-particle interaction; electromagnetics; numerical algorithm development; high performance computing; data-driven modeling; state estimation

EDUCATION

May 2015	Ph.D. in Aerospace Engineering (PhD Defense on March 9, 2015) Graduate Certificate in Plasma Science and Engineering University of Michigan, Ann Arbor
Mar 2010	M.Eng. in Aeronautics and Astronautics University of Tokyo, Japan
Mar 2008	B.S. in Aeronautics and Astronautics University of Tokyo, Japan

EMPLOYMENT HISTORY

Sep 2019 -	Assistant Professor Plasma Dynamics Modeling Laboratory Department of Aeronautics and Astronautics, Stanford University
Sep 2019 -	Adjunct Assistant Professor Department of Aerospace Engineering, Texas A&M University
Jul 2016 - Aug 2019	Assistant Professor Plasma Dynamics Modeling Laboratory Department of Aerospace Engineering, Texas A&M University
Aug 2015 - Jul 2016	Visiting Research Physicist, JSPS Postdoctoral Fellow Laboratory for Plasma Nanosynthesis & Theory Department Princeton Plasma Physics Laboratory, Princeton University
May 2015 - Jul 2015	Postdoctoral Research Fellow Nonequilibrium Gas and Plasma Dynamics Laboratory Department of Aerospace Engineering, University of Michigan
Aug 2010 - May 2015	Graduate Student Research Assistant

	Nonequilibrium Gas and Plasma Dynamics Laboratory Department of Aerospace Engineering, University of Michigan
May 2014 - Aug 2014	Computation Summer Intern Institute for Scientific Computing Research Lawrence Livermore National Laboratory
May 2010 - Aug 2010	Research Assistant Global COE Program, Mechanical Systems Innovation, University of Tokyo

AWARDS AND HONORS

September 2023	AIAA Associate Fellow
April 2023	IEEE Nuclear and Plasma Sciences Society (NPSS) Early Achievement Award
February 2023	Hershkowitz Early Career Award, Plasma Sources Science and Technology
May 2021	Office of Naval Research Young Investigator Program (YIP) Award
September 2019	Kuriki Award for Young Professionals, Electric Rocket Propulsion Society
June 2018	Department of Energy Early Career Research Program Award
October 2017	Air Force Young Investigator Research Program (YIP) Award
Summer 2017	JPL Summer Faculty Research Program, NASA Jet Propulsion Laboratory
2015 - 2016	Japan Society for the Promotion of Science (JSPS) Postdoctoral Fellowship
May 2015	AIAA Foundation John Leland Atwood Graduate Award (Declined)
March 2015	IEEE Nuclear and Plasma Sciences Society (NPSS) Graduate Scholarship Award
May 2014	Outstanding Student Paper Award, 41st IEEE International Conference on Plasma Science (ICOPS) and the 20th International Conference on High-Power Particle Beams
February 2013	Richard F. and Eleanor A. Towner Prize for Distinguished Academic Achievement, College of Engineering, University of Michigan
October 2012	Best Presentation Award, 3rd Graduate Symposium of Michigan Institute for Plasma Science and Engineering
2011 - 2012	Michigan Institute for Plasma Science and Engineering Fellowship
2010 - 2013	Japan Student Services Organization Fellowship
April 2010	Best Student Award, 41st Annual Meeting of Japan Society for Aeronautical and Space Sciences (JSASS)
2009 - 2010	Honor Scholarship, Japan Student Services Organization

TEACHING EXPERIENCE

Fall 2021, Fall 2022, Winter 2024	Fundamentals of Compressible Flows (AA 210A), Stanford University
Winter 2023	Aircraft and Rocket Propulsion (AA 283), Stanford University
Spring 2021, Spring 2023	Advanced Plasma Science and Engineering (AA 244B), Stanford University
Winter 2021	Rarefied and Ionized Gases (AA 205 / ME 362C), Stanford University
Spring 2020, Spring 2022, Spring 2024	Spacecraft Electric Propulsion (AA 204), Stanford University

Winter 2020, Autumn 2020, Winter 2022	Introduction to Aeronautics and Astronautics (AA 100), Stanford University
Spring 2018	Basics of Plasma Engineering and Applications (AERO 489, MEEN 417, NUEN 417), Special Topics in Plasma Engineering and Applications (AERO 689, MEEN 689), Texas A&M University
Spring 2017	Aerospace Electric Propulsion (AERO 489/689), Texas A&M University
Fall 2016, Fall 2017, Fall 2018, Spring 2019, Fall 2019	Introduction to Aerothermodynamics (AERO 212), Texas A&M University

STUDENTS, POSTDOCS, AND VISITORS

Graduate students

Adnan Mansour	Ph.D. 2019-; M.S. 2018 - 2019
Andres Castillo	Ph.D. 2021-; M.S. 2019 - 2021
Andrew Denig	Ph.D. 2021-; M.S. 2019 - 2021
Shigemitsu Suzuki	Ph.D. 2022 -; M.S. 2020 - 2022
Derek Kuldinow	Ph.D. 2021- ; M.S. 2021-2023
Daniel Troyetsky	Ph.D. 2021- M.S. 2021-2023
Vedanth Sharma	M.S. 2022-
Mathieu Cerepi	M.S. 2022-
Theo Zivre	M.S. 2022-

Researcher

Mikhail Mokrov	Research Engineer; December 2022 -

Postdocs

Yusuke Yamashita	Postdoc; April 2022 -; JSPS Overseas Fellowship (April 2023-March 2025)
Anubhav Dwivedi	Postdoc; August 2023 -
Luca Vialetto	Postdoc; September 2023 -; Stanford Energy Postdoctoral Fellowship

Undergraduate students

Brandon Bullock	AACRE 2023, Community College of San Mateo
Alison Anthonella Fajardo	SUPER 2023, Stanford University
Will Nida	REU 2022, Stanford University
David Nevarez-Saenz	SURF 2022, Wichita State University
Peng Yin	UGVR 2022, Tsinghua University
Gabe Larot	AACRE 2022, De Anza College
Timmy Robertson	Summer 2021, AA190, Stanford University
Zehua Liu	UGVR 2021, Tsinghua University
Sean Sewell	REU 2021 (AeroAstro), AA190, Stanford University
Jacob Mukobi	AA 199, Summer 2021, Stanford University
Kaitao (David) Tang	USRG 2021, Tsinghua University

Chris Osgood	REU 2020 (AeroAstro), AA190, Stanford University
Annika Thomas	SURF, Columbia University
Sophia Bergmann	REU 2019, University of Florida
Derek Kuldinow	REU 2019, Yale University
Atharva Tandale	REIS 2019, Indian Institute of Technology, Gandhinagar
Keaton Dodd	REU 2018, Texas A&M University
Ian DesJardin	REU 2018, SUNY Buffalo
Benjamin Simpson	REU 2018, Texas A&M University
Emilio Jimenez	REU 2018, Texas A&M University
Michael Fennema	REU 2017, Texas A&M University
Kareem Ramadan	REU 2017, Ohio State University
Brian Puckett	REU 2017, Hastings College

Alumni (first job after PDML)

Christine Greve	Ph.D. 2019-2022; M.S. 2017 - 2019; NDSEG (Air Force Research Laboratory, NRC fellowship)
Mohamad Menati	Postdoc; September 2021 - December 2022 (Auburn University)
Prabhat Kumar	Postdoc; July 2020 - August 2021 (Lawrence Berkeley National Laboratory)
Rupali Sahu	Graduate student; Sep 2017 - Aug 2020 (PhD, Texas A&M University)
Cameron Treece	M.S. 2017 - 2019 (Lockheed Martin)
Emanuele Cazzola	Postdoc; Jan 2019 - Dec 2019 (Ecole Polytechnique)
Carlos Gonzalez	Postdoc; Oct 2018 - Sep 2019 (University of Texas Austin)
Hisaichi Shibata	Postdoc; Apr 2018 - Aug 2018 (Japan Aerospace Exploration Agency)

Visitors

Stefano Boccelli	Post-Doctoral Fellow, University of Ottawa; May-June 2023
Louis Reboul	Ph.D. Student, Ecole Polytechnique (Visiting Student Researcher Fellowship, France-Stanford Center); Feb-Mar 2023
Satoki Shimamune	UGVR 2022 (University of Cambridge; Masason Foundation Fellowship)
Ronald Chen	Post-Doctoral Fellow, University of Colorado Boulder (CTR Summer School); July-Aug 2022
Alejandro Alvarez-Laguna	Research Scientist, Ecole Polytechnique (Visiting Junior Scholar Fellowship, France-Stanford Center); Mar-May 2022
Willca Villafana	PhD student visitor, Cerfacs (Visiting Student Researcher Fellowship, France-Stanford Center); Oct-Dec 2020
Alex Vazsonyi	PhD student visitor, Michigan / CU Boulder; Jan 2020
Yusuke Yamashita	PhD student visitor, University of Tokyo; May-July 2019
Ryota Sano	MS student visitor, University of Tokyo; Sep 2018 - Mar 2019
Akira Kawasaki	Postdoc visitor from JAXA (JSPS fellowship); Oct-Nov 2016

Thesis committee

Adura Jibodu	PhD; Advisor: M. Cappelli, Stanford ME
Peter Finch	PhD; Advisor: R. Hanson, Stanford ME
Jesse Rodriguez	PhD; Advisor: M. Cappelli, Stanford ME
David Jovel	PhD; Advisor: M. Walker, Georgia Institute of Technology

Martin Lindsey	PhD; Advisor: S. Glenzer, Stanford ICME
Wally Maier	PhD; Advisor: J. Alosno, Stanford AA
Andrea Marcovati	PhD; Advisor: M. Cappelli, Stanford ME
Tal Schwartz	PhD; Advisor: R. Hanson, Stanford AA
Ben Wang	PhD; Advisor: M. Cappelli, Stanford ME; 2022
Willca Villafana	PhD Advisor: B. Cuenot and O. Vermorel; Universite Federale Toulouse Midi-Pryenees; 2021
Kanishk Ganga	MSc; Advisor: A. Knoll, Imperial College London; 2021
Ben Estacio	PhD; Advisor: S. Close, Stanford AA; 2021
Astrid Raisanen	PhD; Advisor: I. D. Boyd, University of Michigan, AERO; 2020
Fabio Righetti	PhD; Advisor: M. Cappelli, Stanford ME; 2020
Xin Tang	PhD; Advisor: D. Staack, TAMU MEEN; 2020
Will McKinney	MS; Advisor: S. Ryu, TAMU MEEN; 2019
Raymond Fontenot	PhD; Advisor: P. Cizmas, TAMU AERO; 2018
Abismael Diaz	MS; Advisor: D. Staack, TAMU MEEN; 2018
Steven Anderson	PhD; Advisor: S. S. Girimaji, TAMU AERO; 2017

THESES

1. PhD: Christine Greve, Real-Time State Estimation in Plasma Modeling Applications, Texas A&M University, 2022
2. MS: Christine Greve, The Development of a Data-Driven Model Calibration Method for Plasma Physics Applications, Texas A&M University, 2019
3. MS: Adnan Mansour, Low Temperature Plasma Modelling Techniques for Arc Discharge and Hall-Effect Thrusters, Texas A&M University, 2019
4. MS: Cameron Treece, Vlasov Simulation of Current-Driven Instabilities Relevant to High-Current Hollow Cathode Plumes, Texas A&M University, 2019

PUBLICATIONS AND PRESENTATIONS

Journal Articles

1. D. Troyetsky, C. M. Greve, S. Tsikata, and K. Hara, "Estimation of the dynamic behavior of plasma properties in a Hall effect thruster discharge plasma", Journal of Physics D: Applied Physics (Special Issue on Data Driven Plasma Science) **56**, 444001 (2023)
2. Y. Yamashita, R. Lau, and K. Hara, "Inertial and anisotropic pressure effects on cross-field electron transport in low-temperature magnetized plasmas", Journal of Physics D: Applied Physics (Special Issue: Emerging Leaders) **56**, 384003 (2023)
3. Z. Liu, K. Hara, and M. Shneider, "Dynamics of electrified liquid metal surface using shallow water model", Physics of Fluids **35**, 042101 (2023) (Featured Article)
4. A. C. Denig and K. Hara, "Three-Dimensional Coupling of Electron Cyclotron Drift Instability and Ion-Ion Two Stream Instability", Physics of Plasmas **30**, 032108 (2023)
5. K. Hara, T. Robertson, J. Kenney, and S. Rauf, "Effects of macroparticle weighting in axisymmetric particle-in-cell Monte Carlo collision simulations", Plasma Sources Science and Technology **32**, 015008 (2023)

6. S. T. Sewell, P. Kumar, and K. Hara, "Effects of the wavelength of the plasma waves on cross-field electron transport in partially magnetized plasmas", IEEE Transactions on Plasma Science **50**, 3498 (2022)
7. K. Hara, A. R. Mansour, and S. Tsikata, "Theory of gradient drift instabilities in low-temperature, partially magnetized plasmas", Journal of Plasma Physics **88**, 905880408 (2022)
8. A. R. Mansour and K. Hara, "Full Fluid Moment Modeling of Rotating Spokes in Penning-type Configuration", Plasma Sources Science and Technology **31**, 055012 (2022)
9. A. M. Castillo, P. Kumar, C. Limbach, and K. Hara, "Mutually Guided Light and Particle Beam Propagation", Scientific Reports **12**, 4810 (2022)
10. C. M. Greve and K. Hara, "Estimation of Plasma Properties Using an Extended Kalman Filter with Plasma Global Models", Journal of Physics D: Applied Physics **55**, 255201 (2022)
11. S. Tsikata, K. Hara, and S. Mazouffre, "Characterization of hollow cathode plasma turbulence using coherent Thomson scattering", Journal of Applied Physics **130**, 243304 (2021)
12. P. Kumar, K. Hara, and S. Tsikata, "Effects of multiply charged ions on microturbulence-driven electron transport in partially magnetized plasmas", Journal of Applied Physics **130**, 173307 (2021)
13. C. M. Greve, M. Majji, and K. Hara, "Real-time state estimation of low-frequency plasma oscillations in Hall effect thrusters", Physics of Plasmas **28**, 093509 (2021)
14. W. Villafana, F. Petronio, A. C. Denig, M. Jimenez, A. Tavant, F. Taccogna, A. Smolyakov, K. Hara, A. Bourdon, P. Chabert, O. Vermorel, B. Cuenot, "2D radial-azimuthal particle-In-cell benchmark for E×B discharges", Plasma Sources Science and Technology **30**, 075002 (2021)
15. P. Kumar, D. Kuldinow, A. M. Castillo, A. Gerakis, and K. Hara, "Nonlinear dynamics of coupled light and particle beam propagation", Physical Review A **103**, 043502 (2021)
16. R. Sahu, A. R. Mansour and K. Hara, "A full fluid moment model for low temperature magnetized plasmas", Physics of Plasmas **27**, 113505 (2020)
17. A. R. Vazsonyi, K. Hara, and I. D. Boyd, "Non-monotonic double layers and electron two-stream instabilities resulting from intermittent ion acoustic wave growth", Physics of Plasmas **27**, 112303 (2020)
18. K. Hara and S. Tsikata, "Cross-field electron diffusion due to the coupling of drift-driven microinstabilities", Physical Review E **102**, 023202 (2020)
19. I. D. Kaganovich, A. Smolyakov, Y. Raitses, E. Ahedo, I. G. Mikellides, B. Jorns, F. Taccogna, R. Gueroult, S. Tsikata, A. Bourdon, J.-P. Boeuf, M. Keidar, A. T. Powis, M. Merino, M. Cappelli, K. Hara, J. A. Carlsson, N. J. Fisch, P. Chabert, I. Schweigert, T. Lafleur, K. Matyash, A. V. Khrabrov, R. W. Boswell, and A. Fruchtman, "Perspectives on Physics of $E \times B$ Discharges Relevant to Plasma Propulsion and Similar Technologies" Physics of Plasmas **27**, 120601 (2020)
20. A. L. Raisanen, K. Hara, and I. D. Boyd, "Two-dimensional hybrid-direct kinetic simulation of a Hall thruster discharge plasma", Physics of Plasmas **26**, 123515 (2019)
21. I. M. DesJardin, K. Hara, and S. Tsikata, "Self-organized standing waves generated by AC-driven electron cyclotron drift instabilities", Applied Physics Letters **115**, 234103 (2019)
22. T. Charoy, J-P. Boeuf, A. Bourdon, P. Chabert, D. Eremin, L. Garrigues, K. Hara, I. Kaganovich, A. Powis, A. Smolyakov, D. Sydorenko, A. Tavant, and W. Villafana, "2D axial-azimuthal Particle-In-Cell benchmark for E×B discharges", Plasma Sources Science and Technology **28**, 105010 (2019)
23. C. M. Greve, K. Hara, R. S. Martin, D. Q. Eckhardt, and J. W. Koo, "A data-driven approach to model calibration for nonlinear dynamical systems", Journal of Applied Physics **125**, 244901 (2019)

24. K. Hara and C. Treece, "Ion kinetics and nonlinear saturation of current-carrying instabilities relevant to hollow cathode plasmas", Plasma Sources Science and Technology **28**, 055013 (2019)
25. K. Hara, "An overview of discharge plasma modeling for Hall effect thrusters", Plasma Sources Science and Technology **28**, 044001 (2019)
26. D. Q. Eckhardt, J. W. Koo, R. S. Martin, M. Holms, and K. Hara, "Spatiotemporal data fusion and manifold reconstruction in Hall thrusters", Plasma Sources Science and Technology **28**, 045005 (2019)
27. A. R. Mansour and K. Hara, "Multispecies plasma fluid modeling of carbon arc discharge", Journal Physics D: Applied Physics **52**, 105204 (2019)
28. K. Hara, "Non-oscillatory quasineutral fluid model of cross-field discharge plasmas", Physics of Plasmas **25**, 123508 (2018)
29. K. Hara and K. M. Hanquist, "Test Cases for Grid-Based Direct Kinetic Modeling of Plasma Flows", Plasma Sources Science and Technology **27**, 065004 (2018)
30. K. Hara, "Progress of Theory and Simulation on Ionization Oscillations in Hall Effect Thrusters (*in Japanese*)", J. Plasma Fusion Res. **94**, 475–481 (2018)
31. E. K. Tokluoglu, I. D. Kaganovich, J. A. Carlsson, K. Hara, and E. A. Startsev, "Amplification of Self-Electric and Magnetic Fields of an Ion Beam Propagating in Background Plasma due to Two-Stream Instability", Physics of Plasmas **25**, 052122 (2018)
32. R. Kawashima, K. Hara, and K. Komurasaki, "Numerical analysis of azimuthal rotating spokes in a crossed-field discharge plasma", Plasma Sources Science and Technology **27**, 035010 (2018)
33. I. Romadanov, Y. Raitses, A. Diallo, K. Hara, I. D. Kaganovich, and A. Smolyakov, "On limitations of laser-induced fluorescence diagnostics for xenon ion velocity distribution function measurements in Hall thrusters", Physics of Plasmas **25**, 033501 (2018)
34. K. Hara, I. D. Kaganovich, and E. A. Startsev, "Generation of forerunner electron beam during interaction of ion beam pulse with plasma", Physics of Plasmas **25**, 011609 (2018)
35. K. Hara, I. Barth, E. Kaminski, I. Y. Dodin, and N. J. Fisch, "Kinetic simulations of ladder climbing' by electron plasma waves", Physical Review E **95**, 053212 (2017)
36. K. M. Hanquist, K. Hara, and I. D. Boyd, "Detailed Modeling of Electron Emission for Transpiration Cooling of Hypersonic Vehicles," Journal of Applied Physics **121**, 053302 (2017)
37. K. Hara, T. Chapman, J. W. Banks, S. Brunner, I. Joseph, R. L. Berger, and I. D. Boyd, "Quantitative study of trapped particle bunching instability in Langmuir waves", Physics of Plasmas **22**, 022104 (2015)
38. K. Hara, M. J. Sekerak, I. D. Boyd, and A. D. Gallimore, "Perturbation analysis of ionization oscillations in Hall effect thrusters", Physics of Plasmas **21**, 122103 (2014)
39. K. Hara, M. J. Sekerak, I. D. Boyd, and A. D. Gallimore, "Mode transition of a Hall thruster discharge plasma", Journal of Applied Physics **115**, 203304 (2014)
40. K. Hara, I. D. Boyd, and V. I. Kolobov, "One-dimensional hybrid-direct kinetic simulation of the discharge plasma in a Hall thruster", Physics of Plasmas **19**, 113508 (2012)
41. S. Cho, S. Yokota, K. Hara, D. Takahashi, Y. Arakawa, K. Komurasaki, and A. Kobayashi, "A Development of Lifetime Evaluation Method Using Multilayer Coating Chip", Transaction of the Japan Society for Aeronautics and Space Science, Aerospace Technology Japan, Japan Society for Aeronautics and Space Science **8**, Pb_51-Pb_54 (2010)

42. S. Cho, S. Yokota, Y. Fukushima, K. Hara, Y. Arakawa, K. Komurasaki, and A. Kobayashi, "Application of lifetime evaluation method using multilayer coated chips", Plasma Application and Hybrid Functionally Materials, Institute of Applied Plasma Science **18**, 84 (2009)
43. M. Lempke, S. Yokota, M. Matsui, K. Hara, K. Komurasaki, and Y. Arakawa, "LIF Spectroscopy of a Hall thruster plasma plume", Plasma Application and Hybrid Functionally Materials **17** (2008)

Journal Articles Submitted / in Preparation

1. D. A. Kuldinow, Y. Yamashita, A. R. Mansour, and K. Hara, "Solution of Gasdynamic Flows using a Self-Consistent 10-Moment Fluid Model with Heat Flux Closure" (*in review*)
2. W. H. R. Chan, K. Hara, and I. D. Boyd, "Effects of multi-dimensionality and energy exchange on electrostatic current-driven plasma instabilities and turbulence" (*submitted*)
3. A. R. Mansour, Y. Yamashita, and K. Hara, "Fluid Moment and Particle Modeling of Direct-Current Breakdown" (*submitted*)
4. K. Hara and Y. Yamashita, "Bohm condition for cylindrical and spherical plasma sheaths" (*submitted*)
5. M. Cerepi and K. Hara, "Data-driven state estimation of 1D partial differential equations" (*in preparation*)
6. A. M. Castillo and K. Hara, "Loss cone effects and monotonic sheath conditions of a partially magnetized plasma sheath" (*in preparation*)
7. S. Suzuki and K. Hara, "The effect of the chirp rate on Single-shot coherent Rayleigh Brillouin scattering" (*in preparation*)
8. A. Alvarez-Laguna and K. Hara, "On the validity of the two-term Boltzmann equation: Non-dimensional analysis, asymptotic theory, and finite-Mach effects of the electron Boltzmann equation" (*in preparation*)
9. K. Hara and A. Alvarez-Laguna, "Runaway electrons in partially ionized plasmas" (*in preparation*)
10. Y. Yamashita, S. Gimelshein, and K. Hara, "Validity and verification of orbital motion limited theory" (*in preparation*)
11. Y. Yamashita, K. Hara, and S. Sriraman, "Plasma sustention condition for direct-current gas breakdown"(*in preparation*)
12. K. Hara and S. Tsikata, "Review of plasma instabilities in partially magnetized plasmas" (*in preparation*)
13. R. Lau, K. Hara, J. Kenney, and S. Rauf, "Low-frequency Oscillations in the Near Breakdown Regime Dual-frequency Capacitively Coupled Plasmas" (*in preparation*)

Conferences

1. H. Wang, J. LI, A. Dwivedi, K. Hara, T. Wu, "BENO: Boundary-embedded Neural Operators for Elliptic PDEs", 37th Conference on Neural Information Processing Systems (NeurIPS), AI for Science workshop, New Orleans, LA, December 2023. (peer-reviewed for oral presentation)
2. K. Hara and Y. Yamashita, "Particle-in-Cell Monte Carlo Collision Modeling of Low-Pressure Plasma Discharges", AVS 69th International Symposium & Exhibition, Portland, OR, November 2023.
3. A. Castillo and K. Hara, "Monotonic sheath conditions of partially magnetized plasma sheaths", 65th Annual Meeting of the APS Division of Plasma Physics, Denver, CO, November 2023.
4. A. Denig and K. Hara, "Finite Ion Temperature Effects on Three-Dimensional Kinetic Instabilities in Partially Magnetized Plasmas", 65th Annual Meeting of the APS Division of Plasma Physics, Denver, CO, November 2023. (poster)

5. K. Hara, A. R. Mansour, and S. Tsikata, "Gradient-drift instability in partially ionized, partially magnetized plasmas", 65th Annual Meeting of the APS Division of Plasma Physics, Denver, CO, November 2023.
6. D. Kuldinow Y. Yamashita, and K. Hara, "A 10-moment multi-fluid model for partially ionized, partially magnetized plasmas", 65th Annual Meeting of the APS Division of Plasma Physics, Denver, CO, November 2023. (poster)
7. D. Kuldinow, W. Taitano, and K. Hara, "Development of a charge- and energy-conserving implicit moment-acceleration method for the Vlasov-Darwin Particle-in-Cell System", 65th Annual Meeting of the APS Division of Plasma Physics, Denver, CO, November 2023. (poster)
8. M. Cerepi and K. Hara, "Data-driven state estimation of 1D partial differential equation for plasma applications", 65th Annual Meeting of the APS Division of Plasma Physics, Denver, CO, November 2023. (poster)
9. V. Sharma, A. M. Castillo, Y. Yamashita, and K. Hara, "Modeling of plasma formation and expansion in a high-voltage anode-cathode gap", 65th Annual Meeting of the APS Division of Plasma Physics, Denver, CO, November 2023.
10. Y. Yamashita, K. Hara, and S. Sriraman, "One-dimensional and two-dimensional particle-based kinetic simulations of DC and RF gas breakdown", 76th Annual Gaseous Electronics Conference, Ann Arbor, MI, October 2023.
11. M. Lee, K.-J. Chung, K. Hara, and J.-Y. Kim, "Characteristics of Mode Transition of Partially Magnetized Plasmas in a E×B Penning discharge", 76th Annual Gaseous Electronics Conference, Ann Arbor, MI, October 2023. (poster)
12. S. Suzuki, A. Gerakis, and K. Hara, "Direct simulation Monte Carlo of single-shot coherent Rayleigh-Brillouin scattering", 76th Annual Gaseous Electronics Conference, Ann Arbor, MI, October 2023. (poster)
13. T. Zivre and K. Hara, "Data-Driven Estimation of Background Pressure Effect on Thrust in Hall Effect Thrusters", 76th Annual Gaseous Electronics Conference, Ann Arbor, MI, October 2023.
14. D. E. Troyetsky and K. Hara, "Two-dimensional full-fluid moment simulations of partially magnetized ExB plasmas ", 76th Annual Gaseous Electronics Conference, Ann Arbor, MI, October 2023. (poster)
15. D. Kuldinow Y. Yamashita, and K. Hara, "A 10-Moment Multi-Fluid Model for Low-Temperature Partially Magnetized Plasmas", 76th Annual Gaseous Electronics Conference, Ann Arbor, MI, October 2023.
16. A. R. Mansour, Y. Yamashita, and K. Hara, "Revisiting Paschen Theory for DC Breakdown", 76th Annual Gaseous Electronics Conference, Ann Arbor, MI, October 2023.
17. A. R. Mansour, A. Alvarez-Laguna, and K. Hara, "Improved Closure Models for Fluid Moment Modeling of Capacitively Coupled Plasmas", 76th Annual Gaseous Electronics Conference, Ann Arbor, MI, October 2023.
18. A. Alvarez-Laguna and K. Hara, "Collisional closures for high-order moment partially-ionized plasma models with the electron inertial terms", 76th Annual Gaseous Electronics Conference, Ann Arbor, MI, October 2023.
19. K. Hara, Y. Yamashita, and S. Rauf, "Theory and simulations of cylindrical plasma sheaths", 76th Annual Gaseous Electronics Conference, Ann Arbor, MI, October 2023.
20. K. Hara and A. Alvarez-Laguna, "Effects of runaway electrons in partially ionized plasmas", 76th Annual Gaseous Electronics Conference, Ann Arbor, MI, October 2023. (poster)

21. M. S. Mokrov, K. Hara, and M. N. Shneider, "Dynamics of charged liquid surface using a shallow water approach", 76th Annual Gaseous Electronics Conference, Ann Arbor, MI, October 2023.
22. R. Randolf, S. Suzuki, K. Hara, and A. Gerakis, "Single shot, non-resonant, four-wave mixing laser diagnostics for low temperature plasmas", 76th Annual Gaseous Electronics Conference, Ann Arbor, MI, October 2023. (poster)
23. A. M. Castillo, M. Hopkins, A. Lietz, and K. Hara, "Plasma chemistry modelling of SF6 replacement gas for high voltage switches", 76th Annual Gaseous Electronics Conference, Ann Arbor, MI, October 2023.
24. R. Randolf, S. Suzuki, K. Hara, and A. Gerakis, "Single shot, non-resonant, four-wave mixing laser diagnostics of heavy species in low temperature plasmas, XXXV ICPIG, Egmond aan Zee, Netherlands, July 2023.
25. S. Suzuki, A. Gerakis, and K. Hara, "Direct Simulation Monte Carlo of single-shot coherent Rayleigh Brillouin scattering", XXXV ICPIG, Egmond aan Zee, Netherlands, July 2023. (poster)
26. A. M. Castillo, A. Lietz, M. Hopkins, and K. Hara, "Plasma global model of Novec 4710/CO2 mixture for high voltage switches", IEEE Pulsed Power Conference 2023, San Antonio, TX, June 2023.
27. V. Sharma, Y. Yamashita, A. M. Castillo, and K. Hara, "1D PIC-MCC modeling of cathode plasma formation and expansion in vacuum diodes", IEEE Pulsed Power Conference 2023, San Antonio, TX, June 2023
28. Y. Yamashita, S. Gimelshein, and K. Hara, "Cylindrical Particle-in-Cell Simulation and Orbital Motion Limited Theory for Langmuir Probe", 50th IEEE ICOPS, Santa Fe, NM, May 2023
29. V. Sharma, Y. Yamashita, A. M. Castillo, and K. Hara, "Towards self-consistent modeling of cathode plasma formation and expansion", 50th IEEE ICOPS, Santa Fe, NM, May 2023
30. A. C. Denig and K. Hara, "Finite Ion Temperature Effects on Three-Dimensional Coupled Kinetic Instabilities in Partially Magnetized Plasmas", 50th IEEE ICOPS, Santa Fe, NM, May 2023
31. M. Cerepi and K. Hara, "Estimating 1D Dynamical Plasma Parameters Using Data-driven Techniques", 50th IEEE ICOPS, Santa Fe, NM, May 2023
32. S. Suzuki, A. Gerakis, and K. Hara, "Computational modeling of coherent Rayleigh-Brillouin scattering (CRBS) for partially ionized plasmas", 50th IEEE ICOPS, Santa Fe, NM, May 2023
33. D. E. Troyetsky, C. M. Greve, S. Tsikata, and K. Hara, "State estimation of anomalous electron transport in a Hall-effect thruster discharge", 50th IEEE ICOPS, Santa Fe, NM, May 2023
34. A. R. Mansour and K. Hara, "Two-dimensional Axisymmetric Fluid Modeling for Low-Temperature Plasma Applications", 50th IEEE ICOPS, Santa Fe, NM, May 2023
35. A. M. Castillo and K. Hara, "Particle-in-cell simulation of magnetized plasma sheath", 50th IEEE ICOPS, Santa Fe, NM, May 2023
36. D. A. Kuldinow and K. Hara, "10-moment fluid simulation of cross-field plasmas", 50th IEEE ICOPS, Santa Fe, NM, May 2023
37. W. H. R. Chan, K. Hara, and I. D. Boyd, "Energy exchange in multidimensional current-driven instabilities in hollow cathode plumes", 50th IEEE ICOPS, Santa Fe, NM, May 2023
38. W. H. R. Chan, K. Hara, J. M. Wang, S. S. Jain, K. P. Griffin, and I. D. Boyd, "Spectral analysis of current-driven instabilities relevant to anomalous transport in hollow cathode plumes", 64th Annual Meeting of the APS Division of Plasma Physics, Spokane, WA, October 2022

39. A. M. Castillo and K. Hara, "Kinetic simulation of magnetized plasma sheaths with oblique magnetic fields", APS Far West Section Fall 2022 Meeting, Honolulu, HI, October 2022
40. A. Alvarez-Laguna, A. R. Mansour, Y. Yamashita, A. Bourdon, P. Chabert, and K. Hara, "Simulation of an inductively coupled RF discharge using fluid moment models" DR1.00001, 75th Annual Gaseous Electronics Conference, Sendai, Japan, October 2022
41. D. E. Troyetsky, C. M. Greve, S. Tsikata, and K. Hara, "Data-Driven Estimation of Electrical Facility Effects on Anomalous Electron Transport in Hall Effect Thrusters", DR4.00001, 75th Annual Gaseous Electronics Conference, Sendai, Japan, October 2022
42. Y. Yamashita, R. Lau, and K. Hara, "Investigation of cross-field electron transport in Hall Effect Thrusters using 1D axial PIC/MCC simulation", DR4.00005, 75th Annual Gaseous Electronics Conference, Sendai, Japan, October 2022
43. Y. Yamashita, K. Hara, and S. Sriraman, "One-dimensional Particle-based Kinetic Simulations of DC and RF gas breakdown", FF4.00003, 75th Annual Gaseous Electronics Conference, Sendai, Japan, October 2022
44. A. Alvarez-Laguna and K. Hara, "High-order moment closure for partially-ionized plasmas", GR4.00001, 75th Annual Gaseous Electronics Conference, Sendai, Japan, October 2022
45. D. Kuldinow, A. R. Mansour, A. Alvarez-Laguna, and K. Hara, "Development of a 10-Moment Multi-Fluid Model for Low-Temperature Magnetized Plasmas", GR4.00002, 75th Annual Gaseous Electronics Conference, Sendai, Japan, October 2022
46. S. Suzuki, R. Randolph, A. Gerakis, and K. Hara, "Fluid modeling and coherent Rayleigh-Brillouin scattering measurements of gas temperature in a xenon DC glow discharge plasma", IF2.00008, 75th Annual Gaseous Electronics Conference, Sendai, Japan, October 2022
47. D. Kuldinow and K. Hara, "Application of a 10-Moment Fluid Model to Transition Neutral and Plasma Flows", 32nd International Symposium on Rarefied Gas Dynamics, Seoul, South Korea, July 2022
48. C. M. Greve and K. Hara, "Real-time State Estimation for Plasma Chemistry Applications", 32nd International Symposium on Rarefied Gas Dynamics, Seoul, South Korea, July 2022
49. S. Tsikata and K. Hara, "Coexistence of small-scale instabilities in Hall thrusters and hollow cathodes", IEPC-2022-127, 37th International Electric Propulsion Conference, Cambridge, MA, June 2022
50. D. Kuldinow and K. Hara, "Ten-Moment Fluid Model for low temperature magnetized plasmas", IEPC-2022-327, 37th International Electric Propulsion Conference, Cambridge, MA, June 2022
51. D. Troyetsky, C. M. Greve, and K. Hara, "State estimation for real-time analysis of dynamic plasma properties and electrical facility effects in Hall effect thrusters", IEPC-2022-323, 37th International Electric Propulsion Conference, Cambridge, MA, June 2022
52. C. M. Greve, D. Troyetsky, and K. Hara, "Real-Time Estimation of Electron Mobility in Hall Effect Thruster Models", IEPC-2022-342, 37th International Electric Propulsion Conference, Cambridge, MA, June 2022
53. Y. Yamashita, R. Lau, and K. Hara, "Kinetic Effects of Cross-Field Plasma Discharge in Hall Effect Thrusters Using 1D Axial and 2D Axisymmetric Particle-in-Cell Models", IEPC-2022-351, 37th International Electric Propulsion Conference, Cambridge, MA, June 2022
54. A. C. Denig and K. Hara, "Kinetic Model of Plasma Sheath Near a Dielectric-Coated Metal Wall", IEPC-2022-345, 37th International Electric Propulsion Conference, Cambridge, MA, June 2022

55. A. M. Castillo and K. Hara, "Kinetic modeling of plasma-wall interactions with magnetic field and secondary emission effects", IEPC-2022-382, 37th International Electric Propulsion Conference, Cambridge, MA, June 2022
56. K. Hara, A. R. Mansour, A. C. Denig, and S. Tsikata, "Fluid and kinetic plasma instabilities in Hall effect thrusters", IEPC-2022-333, 37th International Electric Propulsion Conference, Cambridge, MA, June 2022
57. S. Sewell, A. Sam, and K. Hara, "Theoretical Characterization of Fluctuation-Induced Electron Transport Across Magnetic Fields", IEPC-2022-383, 37th International Electric Propulsion Conference, Cambridge, MA, June 2022
58. A. R. Mansour and K. Hara, "Full-Fluid Moment Modeling of Rotating Spokes", IEPC-2022-348, 37th International Electric Propulsion Conference, Cambridge, MA, June 2022
59. A. R. Mansour and K. Hara, "Axisymmetric Full-Fluid Moment Model for Cylindrical Plasmas", IEPC-2022-390, 37th International Electric Propulsion Conference, Cambridge, MA, June 2022
60. K. Tang and K. Hara, "Quasi-1D Fluid Model for Hybrid Chemical-Plasma Propulsion Systems", IEPC-2022-441, 37th International Electric Propulsion Conference, Cambridge, MA, June 2022
61. A. C. Denig and K. Hara, "Three-Dimensional Kinetic Dispersion Relation of Partially Magnetized Plasma", 49th IEEE ICOPS 2022, Seattle, WA, May 2022
62. A. M. Castillo and K. Hara, "Kinetic simulation of plasma sheath relevant to cross-field diodes", 49th IEEE ICOPS 2022, Seattle, WA, May 2022
63. A. R. Mansour and K. Hara, "Two-Dimensional Full-Fluid Simulations for Low Temperature Rotating Spokes", 49th IEEE ICOPS 2022, Seattle, WA, May 2022
64. C. M. Greve and K. Hara, "Real-Time State Estimation of Plasma Parameters in Hall Effect Thruster Models", 2022 AIAA SciTech Forum, AIAA 2022-1563, San Diego, CA, January 2022
65. P. Kumar, S. T. Sewell and K. Hara, "Cross-field electron transport due to coupling of drift-driven microinstabilities in the presence of singly, doubly, and triply charged ion streams", 2022 AIAA SciTech Forum, AIAA 2022-2192, San Diego, CA, January 2022
66. A. M. Castillo, P. Kumar and K. Hara, "Computational modeling of a coupled light-particle beam propagation", 2022 AIAA SciTech Forum, AIAA 2022-2261, San Diego, CA, January 2022
67. D. Kuldinow, A. R. Mansour, and K. Hara, "Development of 10-moment Fluid Model for Plasma Simulations", 2022 AIAA SciTech Forum, AIAA 2022-1564, San Diego, CA, January 2022
68. C. M. Greve, K. Hara and M. Majji, "Application of State Estimation Methods to Low-Temperature Plasma Dynamics", 60th Conference on Decision and Control, December 2021 (virtual)
69. S. Tsikata, K. Hara, and T. Dubois, "Features of emissive cathode microturbulence", the 74th Annual Meeting of Gaseous Electronics Conference, October 2021 (virtual)
70. A. R. Mansour and K. Hara, "Two-Dimensional Full-Fluid Moment Model for Low-Temperature Magnetized Plasmas",the 74th Annual Meeting of Gaseous Electronics Conference, October 2021 (virtual)
71. K. Hara, T. Robertson, R. Lau, J. Kenney, and S. Rauf, "Development of a radial-axial particle-in-cell Monte Carlo collision model for capacitively coupled plasmas", 74th Annual Meeting of Gaseous Electronics Conference, October 2021 (virtual)
72. P. Kumar, S. Tsikata, and K. Hara, "Cross-field electron transport due to coupling of drift-driven microinstabilities in the presence of singly, doubly, and triply charged ion streams", 74th Annual Meeting of Gaseous Electronics Conference, October 2021 (virtual)

73. P. Kumar, A. M. Castillo, A. Gerakis, and K. Hara, "Computational modeling of a nonlinearly coupled light and particle beam propagation", 74th Annual Meeting of Gaseous Electronics Conference, October 2021 (virtual)
74. R. Lau, K. Hara, J. Kenney, and S. Rauf, "Instability-Induced Breakdown in Dual-Frequency Capacitively Coupled Plasmas", the 74th Annual Meeting of Gaseous Electronics Conference, October 2021 (virtual, poster)
75. A. C. Denig, P. Kumar, S. Tsikata, and K. Hara, "Mutual Coupling of Electron Cyclotron Instability and Ion-Ion Two Stream Instability", 74th Annual Meeting of Gaseous Electronics Conference, October 2021 (virtual, poster)
76. C. M. Greve and K. Hara, "Real-time Estimation of Plasma Parameters using an Iterated Extended Kalman Filter", 74th Gaseous Electronics Conference, October 2021 (virtual)
77. A. R. Mansour and K. Hara, "Two-Dimensional Full-Fluid Moment Model for Hall-Effect Thrusters", 48th IEEE International Conference on Plasma Science, September 2021 (virtual)
78. C. M. Greve and K. Hara, "Real-Time Estimation of Discharge Current Oscillations Using an Iterated Extended Kalman Filter", 48th IEEE International Conference on Plasma Science, September 2021 (virtual).
79. C. M. Greve and K. Hara, "Real-time Estimation of Plasma Dynamics Using an Extended Kalman Filter", in 2021 Joint Propulsion Conference, AIAA Propulsion and Energy Forum, Aug 9-11, 2021, AIAA 2021-3425 (virtual).
80. A. R. Mansour and K. Hara, "Development of 2D Full-Fluid Moment Model for Partially-Magnetized Low-Temperature Plasmas", AIAA-2021-3412, 2021 AIAA Propulsion and Energy Forum, August 2021 (virtual)
81. R. Lau, A. R. Mansour K. Hara, "A Comparison of 1D Particle-in-Cell and Fluid Models for Hall Effect Thrusters", AIAA-2021-3414, AIAA Propulsion and Energy Forum, August 2021 (virtual).
82. A. C. Denig, K. Hara and S. Tsikata, "Three-Dimensional Coupling of Electron Cyclotron Drift Instability and Ion-Ion Two Stream Instability", AIAA 2021-3397, 2021 AIAA Propulsion and Energy Forum, August 2021 (virtual).
83. R. Lau, A. R. Mansour and K. Hara, "A Comparison of 1D Particle-in-Cell and Fluid Models for Hall Effect Thrusters", AIAA-2021-3414, 2021 AIAA Propulsion and Energy Forum, August 2021 (virtual)
84. A. M. Castillo, P. Kumar, and K. Hara, "Laser and Particle Coupled Beam Propagation for Deep Space Propulsion", AIAA 2021-3249, AIAA Propulsion and Energy Forum, August 2021.
85. K. Tang and K. Hara, "Numerical Study of Ionized Nozzle Flows with Electromagnetic Propulsion Enhancement", AIAA 2021-3111, AIAA Aviation 2021 Forum, August 2021 (virtual).
86. P. Kumar and K. Hara, "Dynamics of nonlinearly coupled light and particle beam propagation", K-07, Pre RGD32 workshop, virtual, July 2021 (virtual).
87. C. M. Greve and K. Hara, "Real-Time State Estimation of Dynamic Plasma Processes", 3rd International Conference on Data-Driven Plasma Science, March 2021 (virtual).
88. C. M. Greve and K. Hara, "State Estimation of a Global Plasma Chemistry Model Using an Extended Kalman Filter", Scientific Connections Conference, March 2021 (virtual).
89. D. Andrienko, R. Sahu, A. Tropina, R. B. Miles and K. Hara, "Computational fluid dynamic model of electron transpiration cooling in weakly ionized air flows", AIAA-2021-0684, AIAA Scitech 2021 Forum, January 2021.

90. K. Hara and S. Tsikata, "Cross-field anomalous electron transport due to multidimensional plasma instabilities", 47th IEEE International Conference on Plasma Science (ICOPS-2020), December 2020 (virtual)
91. C. M. Greve, A. Thomas, M. Majji, and K. Hara, "Data-Driven Global Model for Low Temperature Plasma Dynamics", 73rd Gaseous Electronics Conference, October 2020 (virtual).
92. W. Villafana, F. Petronio, M. Jimenez, A. Tavant, F. Taccogna, A. Smolyakov, A. Denig, K. Hara, A. Bourdon, P. Chabert, O. Vermorel, B. Cuenot."2D Radial-Azimuthal Particle-In-Cell Benchmark for E×B Discharges", 73rd Annual Gaseous Electronics Virtual Conference, October 2020 (virtual).
93. A. R. Mansour, C. L. Osgood, R. Sahu and K. Hara, "A Full-Fluid Model for Low-Temperature Magnetized Plasmas", the 73rd Annual Gaseous Electronics Conference, October 2020 (virtual).
94. K. Hara and S. Tsikata, "Enhanced cross-field electron transport due to multidimensional plasma turbulence", 73rd Annual Gaseous Electronics Virtual Conference, October 2020 (virtual).
95. A. L. Raisanen, K. Hara, and I. D. Boyd, "Modeling a Two-Dimensional Plasma Sheath Using a Direct Kinetic Method", 73rd Annual Gaseous Electronics Virtual Conference, October 2020 (virtual).
96. A. R. Mansour, C. Osgood, R. Sahu, and K. Hara, "Development of a one-dimensional full-fluid moment model for Hall effect thrusters", AIAA 2020-3623, 2020 AIAA Propulsion and Energy Forum, August 2020 (virtual).
97. A. M. Castillo, D. Kuldinow, and K. Hara, "Collisional effects in a laser and particle coupled beam", AIAA-2020-3519, 2020 AIAA Propulsion and Energy Forum, August 2020 (virtual).
98. C. M. Greve, A. Thomas, M. Majji, and K. Hara, "Real-time Estimation of Electron Dynamics in Hall Effect Thrusters using an Extended Kalman Filter", AIAA 2020-3621, 2020 AIAA Propulsion and Energy Forum, August 2020 (virtual).
99. A. Gerakis, M. Shneider, and K. Hara, "Velocity distribution function measurement of heavy species in weakly ionized plasma flows via coherent Rayleigh-Brillouin scattering", PR3.00002, the 72nd Annual Meeting of Gaseous Electronics Conference, College Station, TX, October 2019.
100. A. R. Mansour and K. Hara,"A hydrodynamic model of ablating arc discharge in atmospheric pressure", NR2.00004, the 72nd Annual Meeting of Gaseous Electronics Conference, College Station, TX, October 2019.
101. E. Cazzola and K. Hara,"Fully Implicit Particle-in-Cell Simulations of the Electron Cyclotron Drift Instability", MW1.00025, the 72nd Annual Meeting of Gaseous Electronics Conference, College Station, TX, October 2019. (poster)
102. C. M. Greve and K. Hara,"A Data-Driven Approach to Model Calibration for Nonlinear Plasma Behavior", MW1.00026, the 72nd Annual Meeting of Gaseous Electronics Conference, College Station, TX, October 2019. (poster)
103. R. Sahu and K. Hara,"Development of a Two Fluid Model for Low-Temperature Magnetized Plasmas", UF3.00001, the 72nd Annual Meeting of Gaseous Electronics Conference, College Station, TX, October 2019.
104. K. Hara and S. Tsikata,"Plasma instabilities and cross-field electron transport in low-temperature magnetized plasmas", the 72nd Annual Meeting of Gaseous Electronics Conference, College Station, TX, October 2019.
105. T. Charoy, J-P. Boeuf, A. Bourdon, P. Chabert, D. Eremin, L. Garrigues, K. Hara, A. Powis, A. Smolyakov, D. Sydorenko, A. Tavant, and W. Villafana,"2D axial-azimuthal Particle-In-Cell benchmark for low-temperature

magnetized plasmas", MW1.00028, the 72nd Annual Meeting of Gaseous Electronics Conference, College Station, TX, October 2019. (poster).

106. S. Tsikata and K. Hara, "Plasma instabilities in cross-field configuration: an analysis of the relevance of different modes for electron transport", IEPC-2019-758, the 36th International Electric Propulsion Conference, Vienna, Austria, September 2019.

107. T. Charoy, J-P. Boeuf, A. Bourdon, P. Chabert, D. Eremin, L. Garrigues, K. Hara, I. Kaganovich, A. Powis, A. Smolyakov, D. Sydorenko, A. Tavant, and W. Villafana, "2D (axial-azimuthal) Particle-In-Cell benchmark for E×B discharges", IEPC-2019-674, the 36th International Electric Propulsion Conference, Vienna, Austria, September 2019 (poster) **Best poster award**.

108. K. Hara, Y. Yamashita, S. Tsikata, B. Vincent, and S. Cho "New insights into electron transport due to azimuthal drift in a Hall effect thruster", IEPC-2019-691, the 36th International Electric Propulsion Conference, Vienna, Austria, September 2019.

109. S. Cho, K. Kubota, H. Watanabe, K. Hara, and Y. Yamashita, "Investigation of cross-field electron transport in a 100-W class Hall Thruster using a full particle-in-cell simulation", IEPC-2019-718, the 36th International Electric Propulsion Conference, Vienna, Austria, September 2019.

110. Y. Yamashita, C. Gonzalez, K. Hara, S. Cho, and K. Nishiyama, "Study of the electron anomalous transport in a Hall effect thruster using a 2D multi-fluid simulation", IEPC-2019-716, the 36th International Electric Propulsion Conference, Vienna, Austria, September 2019 (poster).

111. R. Sahu, C. Gonzalez, and K. Hara, "Development of 1D Magnetostatic Two-Fluid Plasma Simulation of a Hall Effect Thruster", IEPC-2019-726, the 36th International Electric Propulsion Conference, Vienna, Austria, September 2019.

112. C. M. Greve, K. Hara, and R. Martin, "Data-Driven Modeling for Nonlinear Dynamics of Physical Phenomena in Hall Effect Thrusters", IEPC-2019-732, the 36th International Electric Propulsion Conference, Vienna, Austria, September 2019.

113. C. Limbach and K. Hara, "A Combined Particle and Laser Beam Propulsion Concept Based on Opto-Mechanical Coupling ", AIAA-2019-3800, AIAA Propulsion and Energy Forum and Exposition, Indianapolis, IN, August 2019.

114. D. Kuldinow, K. Hara, D. Morales, and C. Limbach, "Numerical Simulation of Laser and Particle Coupled Beam Propagation", AIAA 2019-3803, AIAA Propulsion and Energy Forum and Exposition, Indianapolis, IN, August 2019.

115. K. Hara, M. Majji, and C. M. Greve, "Unknown Input and State Estimation in Plasma Dynamical Systems for Data-Driven Modeling Applications", AIAA-2019-3994, AIAA Propulsion and Energy Forum and Exposition, Indianapolis, IN, August 2019.

116. K. Hara, "High-energy ion generation due to the plasma wave driven by current-carrying instabilities", AIAA-2019-4249, AIAA Propulsion and Energy Forum and Exposition, Indianapolis, IN, August 2019.

117. K. Hara, "Vlasov-Poisson simulation of current-carrying ion acoustic instability: nonlinear saturation and ion kinetics", 2019 IEEE Pulsed Power and Plasma Science Conference, Paper #1249, Orlando, FL, June 2019.

118. A. Mansour and K. Hara, "Multispecies Nonequilibrium Plasma Fluid Simulation of an Ablating Arc Discharge in Atmospheric Pressure", 2019 IEEE Pulsed Power and Plasma Science Conference, Paper #1250, Orlando, FL, June 2019.

119. K. Hara, "Overview and challenges of partially magnetized plasma modeling", 2019 IEEE Pulsed Power and Plasma Science Conference, Paper #1251, Orlando, FL, June 2019.

120. C. Treece and K. Hara, "Ion kinetics and nonlinear saturation of current-carrying instabilities", 71st Annual Gaseous Electronics Conference, Portland OR, November 2018 (poster).

121. J.-P. Boeuf, A. Smolyakov, G. Hagelaar, and K. Hara, "Benchmark test cases for low temperature magnetized plasma modeling", 71st Annual Gaseous Electronics Conference, Portland OR, November 2018 (poster).

122. K. Hara and I. G. Mikellides, "Characterization of low frequency ionization oscillations in Hall thrusters using a one-dimensional fluid model", AIAA-2018-4904, AIAA/SAE/ASEE Joint Propulsion Conference, Cincinnati, OH, July 2018.

123. A. L. Raisanen, K. Hara, and I. D. Boyd, "Two-dimensional Hybrid-Direct Kinetic Simulation of a Hall Thruster", AIAA/SAE/ASEE Joint Propulsion Conference, Cincinnati, OH, July 2018.

124. K. Hara and R. Kawashima, "Low-frequency ionization oscillations due to azimuthally rotating spokes in cross-field configurations", QR1.00003, 70th Annual Gaseous Electronics Conference, Pittsburgh, PA, November 2017.

125. A. Khrabry, A. Khodak, K. Hara, V. Nemchinsky, and I. D. Kaganovich, "Self-consistent numerical simulation of carbon transport in the arc discharge for carbon nanotube synthesis", VF1.00004, 70th Annual Gaseous Electronics Conference, Pittsburgh, PA, November 2017.

126. K. Hara, I. Barth, E. Kaminski, I. Dodin, and N. Fisch, "Grid-based kinetic simulations of ladder climbing by electron plasma waves", NW1.00058, 70th Annual Gaseous Electronics Conference, Pittsburgh, PA, November 2017. (poster)

127. K. Hara and S. Cho, "Background pressure effects on Hall thruster discharge plasma using a full particle simulation", GT1.00071, 70th Annual Gaseous Electronics Conference, Pittsburgh, PA, November 2017. (poster)

128. E. T. Dale, B. Jorns, and K. Hara, "Numerical investigation of the stability criteria for the breathing mode in Hall Effect Thrusters", IEPC-2017-265, 35th International Electric Propulsion Conference, Atlanta, GA, October 2017.

129. J. W. Koo, J. Tran, R. S. Martin, and K. Hara, "Role of Ion Dynamics in Anomalous Electron Transport", IEPC-2017-009, 35th International Electric Propulsion Conference, Atlanta, GA, October 2017.

130. R. Kawashima, J. Bak, K. Hara, K. Komurasaki, and H. Koizumi, "Effects of Azimuthal Non-uniformity on the Hall Thruster Discharge", IEPC-2017-527, 35th International Electric Propulsion Conference, Atlanta, GA, October 2017.

131. A. Kawasaki and K. Hara, "Development of 1D, time-dependent, multi-fluid model for Hall thruster discharge plasma", IEPC-2017-508, 35th International Electric Propulsion Conference, Atlanta, GA, October 2017.

132. K. Hara and K. Kubota, "Direct kinetic simulation of ion acoustic turbulence in cathode plume", IEPC-2017-496, 35th International Electric Propulsion Conference, Atlanta, GA, October 2017.

133. K. Hara and S. Cho, "Radial-azimuthal particle-in-cell simulation of a Hall effect thruster", IEPC-2017-495, 35th International Electric Propulsion Conference, Atlanta, GA, October 2017.

134. I. Romadanov, A. Smolyakov, A. Diallo, Y. Raitses, and K. Hara, "Time-resolved measurements of modulated breathing oscillations in Hall Thruster", IEPC-2017-267, 35th International Electric Propulsion Conference, Atlanta, GA, October 2017.

135. H. C., Dragnea, K. Hara, and I. D. Boyd, "Development of a 2D Axisymmetric Electron Fluid Model in Hall Thrusters", AIAA Propulsion and Energy Forum and Exposition, AIAA Paper 2017-4632, July 2017.
136. A. Raisanen, K. Hara and I. D. Boyd, "Assessment of a Two-Dimensional Hybrid-Direct Kinetic Simulation of a Hall Thruster", AIAA Propulsion and Energy Forum and Exposition, AIAA Paper 2017-4727, Atlanta, GA, July 2017.
137. S. E. Anderson, K. Hara, and S. S. Girimaji, "Advanced Magneto-gas-kinetic scheme for MHD: Analysis and comparison to existing models", IEEE International Conference on Plasma Science., Atlantic City, NJ, May 2017.
138. R. Kawashima and K. Hara, "Numerical modeling of rotating spokes in Hall thruster discharge plasma", IEEE International Conference on Plasma Science, Paper #1566, Atlantic City, NJ, May 2017.
139. K. Hara and I. D. Kaganovich, "Electron acceleration due to the interaction between a neutralized ion beam and background plasma", IEEE International Conference on Plasma Science, Paper #1539, Atlantic City, NJ, May 2017.
140. K. Hara, I. Barth, E. Kaminski, I. Dodin, and N. Fisch, "Vlasov simulations of ladder climbing and autoresonant acceleration of Langmuir waves", 58th Annual Meeting of the APS Division of Plasma Physics, San Jose, CA, October 2016. (poster)
141. K. Hara, I. D. Kaganovich and Y. Raitses, "Fluid simulation of carbon arc plasma", 69th Annual Gaseous Electronics Conference, Bochum, Germany, October 2016.
142. K. Hara, S. Keller, and Y. Raitses, "Measurements and theory of driven breathing oscillations in a Hall effect thruster", AIAA Propulsion and Energy Forum and Exposition 2016, AIAA-2016-4532, Salt Lake City, UT, July 2016.
143. K. Hara and S. Cho, "Development of a hybrid particle-continuum kinetic method for Hall thruster discharge plasmas", AIAA Propulsion and Energy Forum and Exposition 2016, AIAA-2016-4621, Salt Lake City, UT, July 2016.
144. A. Raisanen, K. Hara and I. D. Boyd, "Comparing Two-Dimensional, Axisymmetric, Hybrid-Direct Kinetic and Hybrid-Particle-in-Cell Simulations of the Discharge Plasma in a Hall Thruster", AIAA Propulsion and Energy Forum and Exposition 2016, AIAA-2016-4620, Salt Lake City, UT, July 2016.
145. R. Kawashima, K. Hara, K. Komurasaki, and H. Koizumi, "A Unified Model for Axial-Radial and Axial-Azimuthal Hall Thruster Simulations", AIAA Propulsion and Energy Forum and Exposition 2016, AIAA-2016-4726, Salt Lake City, UT, July 2016.
146. K. M. Hanquist, K. Hara, and I. D. Boyd, "Modeling of Electron Transpiration Cooling for Hypersonic Vehicles", 46th AIAA Thermophysics Conference, AIAA Paper 2016-4433, June 2016.
147. K. Hara and I. D. Kaganovich, "Electron Acceleration due to Ion Beam Driven Instability", 57th Annual Meeting of APS Division of Plasma Physics, Savannah, GA, November 2015 (Poster)
148. H. Dragnea, K. Hara and I. D. Boyd, "A 9-Point Finite Volume Potential Solver", 68th Annual Gaseous Electronics Conference, Honolulu, HI, October 2015
149. K. Hara and I. D. Boyd, "Axial-azimuthal hybrid-direct kinetic simulation of Hall effect thrusters", IEPC-2015-286, 34th International Electric Propulsion Conference, Kobe, Japan, July 2015
150. K. Hara, M. J. Sekerak, A. D. Gallimore, and I. D. Boyd, "Breathing mode in Hall effect thrusters", IEPC-2015-283, 34th International Electric Propulsion Conference, Kobe, Japan, July 2015

151. H. C. Dragnea, K. Hara, and I.D. Boyd, "Fully 2D Numerical Simulation of a Nested Channel Hall Thruster", 5th Space Propulsion Conference, Paper SP2016_3124969, Rome, Italy, May 2016.
152. K. Hara, T. Chapman, J. W. Banks, S. Brunner, I. Joseph, R. L. Berger, and I. D. Boyd, "Vlasov simulations of negative mass instability of Langmuir waves", 56th Annual Meeting of APS Division of Plasma Physics, New Orleans, LA, November 2014 (Poster) **(Student travel grant)**
153. K. Hara, I. D. Boyd, M. J. Sekerak, and A. D. Gallimore, "Discharge oscillation mode transition of a Hall thruster", 41st IEEE International Conference on Plasma Science and the 20th International Conference on High-Power Particle Beams, Washington D.C., May 2014. **(Awarded)**
154. K. Hara and I. D. Boyd, "Front tracking scheme for direct kinetic simulations", 41st IEEE International Conference on Plasma Science and the 20th International Conference on High-Power Particle Beams, Washington D.C., May 2014.
155. K. Hara, I. D. Boyd, and I. D. Kaganovich, "A direct Vlasov simulation of nonlinear plasma waves", 55th Annual Meeting of APS Division of Plasma Physics, Denver, CO, November 2013. (Poster)
156. K. Hara and I. D. Boyd, "Low Frequency Oscillation Analysis of a Hall Thruster Using a One-Dimensional Hybrid-Direct Kinetic Simulation", IEPC Paper 2013-266, 33rd International Electric Propulsion Conference, Washington DC, October 2013.
157. K. Hara and I. D. Boyd, "Analysis of Secondary Electron Emission of Dielectric Materials Using a Direct Kinetic Simulation", IEEE Pulsed Power and Plasma Science Conference (40th IEEE International Conference on Plasma Science) , San Francisco, CA, June 2013.
158. K. Hara, I. D. Boyd, and V. I. Kolobov, "Investigation of Presheath and Sheath Using a Full-Vlasov Simulation", 65th Annual Gaseous Electronics Conference, Austin, TX, October 2012.
159. K. Hara, I. D. Boyd, and V. I. Kolobov, "One-dimensional hybrid-Vlasov simulation of Hall thrusters", 48th AIAA Joint Propulsion Conference, Atlanta, GA, AIAA-2012-4313, August 2012.
160. S. Varadan, K. Hara, B. Van Leer, and E. Johnsen, "Development of Discontinuous Galerkin Method for Supersonic flows", 1st High-Order CFD Workshop, 50th AIAA Aerospace Sciences Meeting, Nashville, TN, January 2012.
161. K. Hara, S. Yokota, S. Cho, D. Takahashi, K. Komurasaki, and Y. Arakawa, "Boundary Conditions in a Hall thruster Ion Trajectory Simulation" *(in Japanese)*, 41st Annual Meeting of Japan Society for Aeronautical and Space Sciences, Tokyo, Japan, April 2010. **(Awarded)**
162. Y. Fukushima, S. Yokota, D. Takahashi, K. Hara, S. Cho, K. Komurasaki, and Y. Arakawa, "Discharge Stabilization Method of an Anode Layer Type Hall Thruster by Non-uniform Propellant Flow", IEPC-2009-148, the 31st International Electric Propulsion Conference, Ann Arbor, MI, September 2009.
163. S. Yokota, K. Hara, S. Cho, D. Takahashi, K. Komurasaki, and Y. Arakawa, "Measurement of Ion Number Density and Velocity Distribution in an Anode-layer Type Hall Thruster by Laser Induced Florescence Method", IEPC-2009-149, the 31st International Electric Propulsion Conference, Ann Arbor, MI, September 2009.

Symposiums and Talks

1. K. Hara, TBD, Department of Mechanical and Aerospace Engineering, Princeton University, April 2024
2. K. Hara, TBD, School of Aerospace Engineering, Georgia Institute of Technology, November 2023

3. K. Hara, "Instabilities and non-classical transport in partially-ionized, partially-magnetized plasmas", Interfaces and Mixing in Fluids, Plasmas, Materials, the Kavli Institute for Theoretical Physics, Santa Barbara, October 2023
4. K. Hara, "Modeling of partially ionized, partially magnetized plasmas: fluid moment, particle, and data-driven models", Accelerator Technology and Applied Physics seminar, Lawrence Berkeley National Laboratory, August 2023
5. K. Hara, "Magnetized plasmas and wave interactions", 2nd US Low Temperature Plasma Summer School, University of Michigan, June 2023
6. K. Hara, "Plasma instabilities and turbulent processes in partially magnetized plasmas", Plasma Science Seminar, University of Washington, April 2023 (remote)
7. K. Hara, "Physics-based and data-driven models of partially ionized gases", Departmental Seminar, Mechanical Engineering, University of Minnesota, February 2023
8. K. Hara, "Physics-based and data-driven models of partially ionized gases for spacecraft electric propulsion", Fluid Mechanics Seminar, Aerospace Engineering, University of Texas Austin, November 2022
9. K. Hara, "Instabilities and turbulent processes in low-temperature magnetized plasmas", FR2.00001, 75th Annual Gaseous Electronics Conference, Sendai, Japan, October 2022 (**Invited**)
10. K. Hara, "Development of computational models of plasma formation relevant in high power microwaves and other low temperature plasma applications", Plasma Physics Branch, Naval Research Laboratory, Washington DC, September 2022.
11. K. Hara, "Physics-based and data-driven models of low-temperature plasmas for aerospace applications", 32nd International Symposium on Rarefied Gas Dynamics, Seoul, South Korea, July 2022 (**Invited**)
12. K. Hara, 'Electron transport in partially magnetized plasmas", Workshop on E×B plasma, XXV Europhysics Sectional Conference on the Atomic and Molecular Physics of Ionized Gases (ESCAMPIG), Paris, France, July 2022. (**Invited**)
13. K. Hara, "Computational modeling of low-temperature magnetized plasmas for space propulsion applications", Minicourse on Plasmas for Space Propulsion, 49th International Conference on Plasma Science, Seattle, WA, May 2022.
14. K. Hara, "Challenges and opportunities for industrial low-temperature plasmas", Thermofluids Seminar, Mechanical Engineering, Stanford University, May 2022.
15. K. Hara, "Dynamics of Low Temperature Magnetized Plasmas: Self-Organization and Anomalous Electron Transport", Michigan Institute of Plasma Science and Engineering, December 2021.
16. K. Hara, "Cross-field electron diffusion due to the coupling of drift-driven microinstabilities", International Online Plasma Seminar, April 2021.
17. K. Hara, "Computational models of ionized gases for aerospace applications", CTO Seminar Series, Lam Research Corporation, Virtual, September 2020
18. K. Hara, "Computational models of ionized gases for aerospace applications", ET Guest Lecture Series, Applied Materials, Santa Clara, CA, February 2020
19. K. Hara, "Kinetic and fluid modeling of plasma flows in electric propulsion devices", Fluid Mechanics Seminar, Stanford University, Stanford, CA, January 2020
20. K. Hara, "Computational plasma dynamics for space propulsion and low temperature plasmas", NASA Ames Research Center, Mountain View, CA, November 2019.

21. K. Hara, "Verification, validation, and benchmarking of plasma models", Workshop on Modeling and Validation, 72nd Annual Meeting of Gaseous Electronics Conference, College Station, TX, October 2019.
22. K. Hara, "Computational plasma dynamics for space propulsion and low temperature plasmas", Department of Physics, Baylor University, Waco, TX, July 2019.
23. K. Hara, "Computational plasma dynamics for space propulsion and low temperature plasmas", Department of Aeronautics and Astronautics, Stanford University, Stanford, CA, April 2019.
24. K. Hara, "Computational Methods for Kinetic Models of Gases and Plasmas", SIAM CSE Meeting, Spokane, WA, February 2019. (**Invited**)
25. K. Hara, "Computational and theoretical modeling of plasma dynamics for space propulsion and other applications", Department of Aeronautics and Astronautics, Massachusetts Institute of Technology, Cambridge, MA, February 2019.
26. K. Hara, "Toward predictive modeling of plasma flows in low-temperature magnetized plasmas and arc discharge", Institut de Combustion Aérothermique Réactivité et Environnement (ICARE), Centre National de la Recherche Scientifique (CNRS), Orleans, France, January 2019.
27. K. Hara, "Quasineutral plasma modeling of low-frequency oscillations in cross-field discharge plasmas: breathing mode and rotating spokes", 71st Gaseous Electronics Conference, Portland, OR, November 2018. (**Invited**)
28. K. Hara, "Multispecies plasma fluid simulation of carbon arc discharge", 9th International Symposium on Plasma Nanoscience and Nanotechnology (iPlasmaNano-IX), New Buffalo, MI, August 2018. (**Invited**)
29. K. Hara, I. DesJardin, and R Martin, "More on 1D Azimuthal and 2D r-theta simulations", E×B Workshop, Princeton, NJ, November 2018
30. K. Hara, "Computational models for the plasma flows of in-space electric propulsion devices", Air Force Science and Technology 2030 Forum, College Station, TX, June 2018 (poster).
31. K. Hara, "Direct kinetic simulation of nonlinear plasma waves and Hall thruster discharge plasmas", International Conference on Phenomena in Ionized Gases (ICPIG), Lisbon, Portugal, July 2017. (**Invited**)
32. K. Hara, "Modeling of the Plasma Flows in Electric Propulsion Devices and Arc Plasmas", Research Seminar at Department of Mechanical and Aerospace Engineering, University of Alabama Huntsville, June 2017. (**Invited**)
33. K. Hara, "Plasma Dynamics of Electric Propulsion for In-Space Missions", 1st RIKEN Interdisciplinary Symposium for Young Scientists, RIKEN, Yokohama, Japan, March 2017. (**Invited**)
34. K. Hara, "Modeling of the Plasma Flows in Electric Propulsion Devices", Aerospace Engineering Seminar Series, Texas A&M University, College Station, TX, January 2017.
35. K. Hara, "Hybrid and full kinetic simulation of Hall thruster discharge plasma", Electric Propulsion and Power Group, NASA Glenn Research Center, January 2017.
36. K. Hara, "Development of grid-based direct kinetic method for nonlinear plasma waves and Hall Thruster discharge plasma", Center for Large-Scale Scientific Simulations (CLASS), Texas A&M University, Dec 2016.
37. K. Hara, "Kinetic simulations of Nonlinear plasma waves", 7th Annual meeting of DOE Plasma Science Center, Baltimore, MD, May 2016.
38. K. Hara, "Stabilization of Hall thruster discharge oscillation", Space Transport Symposium, Sagamihara, Japan, January 2016. (in Japanese)

39. K. Hara, "Vlasov simulations: Numerical and Physical Aspects", Computations Group, Japan Aerospace Exploration Agency, Chofu, Tokyo, January 2016. (Informal seminar; in Japanese)
40. K. Hara, "Breathing mode oscillations: Numerical simulations and theory", Electric Propulsion Group, Jet Propulsion Laboratory, January 2016. (Informal seminar)
41. I. D. Kagaonovich and K. Hara, "Electron Acceleration due to Ion Beam Driven Instability", Theory Department Seminar, Princeton Plasma Physics Laboratory, December 2015.
42. K. Hara, "Hybrid-Direct Kinetic Simulation of Hall Thruster Discharge Plasmas", 6th Annual meeting of DOE Plasma Science Center, Baltimore, MD, June, 2015.
43. K. Hara, "Direct kinetic simulation of the discharge plasma for electric propulsion and nonlinear plasma waves", Engineering Graduate Symposium, University of Michigan, Ann Arbor, MI, October 2014.
44. K. Hara and I. D. Boyd, "Kinetic simulation of trapped particle bunching instability in nonlinear plasma waves", 5th Graduate Symposium of Michigan Institute for Plasma Science and Engineering, Ann Arbor, MI, October 2014.
45. K. Hara and I. D. Boyd, "Direct Kinetic Simulation of the Discharge Plasma in a Hall Effect Thruster", 5th Annual meeting of DOE Plasma Science Center, Baltimore, MD, May 2014.
46. I. D. Boyd, K. Hara and C. Galitzine, "Kinetic Simulations of Distribution Functions in Rarefied Plasmas", 4th Annual meeting of DOE Plasma Science Center, Baltimore, MD, May 2013.
47. K. Hara, I. D. Boyd, V. I. Kolobov, and R. R. Arslanbekov, "Collisionless Sheath Problem for Testing Vlasov Solvers", Algorithm and Model Verification and Validation for Kinetic Plasma Simulation Codes", East Lansing, MI, November 2012.
48. K. Hara, I. D. Boyd, and V. I. Kolobov, "Kinetic Simulations of Partially Magnetized Plasmas in a Hall Thruster", 3rd Graduate Symposium of Michigan Institute for Plasma Science and Engineering, East Lansing, MI, October 2012. (poster) **(Awarded)**
49. K. Hara, I. D. Boyd, and V. I. Kolobov, "Development of a fully-kinetic Vlasov simulation for partially magnetized plasma", 3rd Annual meeting of DOE Plasma Science Center, Princeton, NJ, May 2012. (poster)
50. K. Hara, I. D. Boyd, and V. I. Kolobov, "1D hybrid-Vlasov simulation for Hall thrusters", 2nd Graduate Symposium of Michigan Institute for Plasma Science and Engineering, Ann Arbor, MI, September 2011. (poster)
51. K. Hara, I. D. Boyd, and V. I. Kolobov, "Development of a Vlasov simulation for partially magnetized plasma", 2nd Annual meeting of DOE Plasma Science Center, Ann Arbor, MI, May 2011. (poster)

Ph.D. Dissertation

- "Development of Grid-Based Direct Kinetic Method and Hybrid Kinetic-Continuum Modeling of Hall Thruster Discharge Plasmas." Advisor: Iain D. Boyd; Committee Members: Alec D. Gallimore, Mark J. Kushner, and Igor D. Kaganovich

OTHER ACTIVITIES

Affiliation:

- Associate Fellow (2024-); Senior Member (2018-2023), American Institute of Aeronautics and Astronautics (AIAA)
- Member, American Physical Society (APS)

- Senior Member (2022-), Institute of Electrical and Electronics Engineers (IEEE)
- Member, IEEE Nuclear and Plasma Science Society (NPSS)
- Member, Electric Rocket Propulsion Society (ERPS)
- Member, Society for Industrial and Applied Mathematics (SIAM)

Services:

1. International
   - Editorial Board, Plasma Sources Science and Technology, IOP Publishing (2023-)
   - Executive Committee, Plasma Sciences and Applications (PSAC), Nuclear and Plasma Sciences Society, IEEE (2021-2024)
   - Member, AIAA Electric Propulsion Technical Committee: 2017- (Continuing Education: 2018-2022)
   - Technical Chair (ICOPS/APCOPTC 2024)
   - Co-organizer, Low-temperature magnetized plasma benchmarks (LANDMARK) project: 2018
   - Session Technical Committee (ICOPS 2017, APS DPP 2020, ICOPS 2023, APS DPP 2023)
   - Local Organizing Committee (APS GEC 2019)
2. University
   - Graduate Admissions Committee, Aeronautics and Astronautics, Stanford University (2020-Present)
   - Examiner, Aerospace Engineering Fundamentals Qualifying Exam (AFQE), Texas A&M University (2018)
   - Organizing committee, Aerospace Engineering Seminar Series (AESS), Texas A&M University (2017-2019)
   - Research Council, College of Engineering, Texas A&M University(2017 - 2018)
3. Reviewer
   - *Journal*: IEEE Transaction on Plasma Science; AIAA Journal of Propulsion and Power; Journal of Applied Physics; Physics of Plasmas (Top Referee, 2017, 2018); Physics Letters A; Review of Scientific Instruments; Contributions to Plasma Physics; Plasma Sources Science and Technology (IOP Trusted Reviewer 2021, 2022); AIP Advances; Plasma Science and Technology; European Physical Journal D; Acta Astronautica; Applied Physics Letters; Journal of Vacuum Science and Technology B; Aerospace Science and Technology; Review of Modern Plasma Physics; New Journal of Physics; Plasma Research Express; Journal of Fluid Mechanics; AIAA Journal of Spacecraft and Rockets; AIAA Journal of Thermophysics and Heat Transfer; Chaos; Journal of Computational Physics; Physical Review Fluids; Journal Physics D: Applied Physics; Frontiers in Physics; Nature Communications; Physical Review E; Journal of Electric Propulsion; Physica Scripta; Physical Review Accelerators and Beams; Applied Optics; Plasmas; Physics of Fluids
   - *Agencies*: NSF ECosystem for Leading Innovation in Plasma Science and Engineering (ECLIPSE); NSF/DOE Partnership in Basic Plasma Science and Engineering (2016, 2017; 2021); Lockheed Martin (2018); NASA Science and Technology Research Fellowship (2019, 2022); Army Research Office (2019); Netherlands Organization for Scientific Research (2020); Air Force Office of Scientific Research (2020, 2021, 2022); Department of Energy Office of Fusion Energy Science (2020, 2021); Princeton Plasma Research Facility (2022); Department of Energy Advanced Scientific Computing Research (2022).

4. Consultation: Lynntech Inc. (2018-2019)
5. Advisory Board: Luxembourg Institute of Science and Technology (2022-2026)

Languages: English (Fluent), Japanese (Native)