

Guy M. Parsey

parseygu@umich.edu

EECS - Rm 2233
University of Michigan
1301 Beal Avenue
Ann Arbor, MI 48109

Education

2013–2017	PhD in Physics, Colleges of Natural Science and Engineering, Michigan State University, USA.
2011–2013	MSc in Physics, College of Natural Science, MSU, USA.
2007–2011	BSc in Physics, College of Creative Studies, UC Santa Barbara, USA.

Professional Experience

2017 –	Postdoctoral Research Assistant at University of Michigan Researcher for Dr. Mark Kushner in the Computational Plasma Science and Engineering Group. Present projects include extending functionality and optimization of solvers for CPSEG codes, development of chemistry mechanisms for etching processes, and modeling of repetitively pulsed atmospheric pressure plasma jets onto liquid surfaces.
2011–2017	Graduate Research Assistant at Michigan State University RA for Dr. John Verboncoeur in the Plasma Theory Simulation Group. Thesis work consisting of an open-source python framework for developing an understanding of plasma chemistry reaction kinetics and performing uncertainty analysis of source data. Framework is applied to multiple phenomena, ranging from single-species low-pressure discharges to plasma-assisted combustion of hydrocarbons and optically-pumped rare gas lasers. Unofficial system administrator for the research group.
2009–2010 Summers	SULI at Lawrence Berkeley National Lab DOE program, Science Undergraduate Laboratory Internships, under Dr. Steve Lund in the Accelerator and Fusion Research Division. First summer: Linear field model of stacked washer Einzel lens systems. Second summer: PIC simulations (WARP framework) of beams with intense space-charge in Einzel lens transport.
Sum. 2008	Internship with Northrop Grumman Space Technologies Implemented a video-based "real-time" tracking algorithm in MATLAB.
2006–2007	Rock climbing instructor and youth team coach

Languages and Software

Human	English (native), French (fluent)
Computer	Python, Fortran, C/C++, CUDA, Bash, MATLAB, and Mathematica L ^A T _E X and MS Office Linux, OSX, and Windows

Publications and Presentations

pending pubs.	S. A. Norberg, G. M. Parsey, A. M. Lietz, E. Johnsen, M. J. Kushner, “Multiple Pulses of an Atmospheric Pressure Plasma Jet onto a Reactive Liquid Layer” - J. Phys. D (accepted) G. M. Parsey, Y. Güçlü, J.P. Verboncoeur, A. J. Christlieb, “KGMf: Kinetic Global Modeling framework for Plasma and Gas-Phase Systems” - CPC CPiP (in progress) G. M. Parsey, J. P. Verboncoeur, “Uncertainty analysis and V&V with global model simulations” - (in progress)
2018	Y. Fu, J. Krek, G. M. Parsey, J. P. Verboncoeur, “Characterizing the dominant ions in low-temperature argon plasmas in the range of 1–800 Torr” - Phys. Plasmas 25, 033505 (2018) GRC PPS: G. M. Parsey, A. M. Lietz, J. Kruszelnicki, M. J. Kushner, “Operational Variability of an APPJ for Medical Applications onto a Reactive Liquid Layer” (poster) 7th ICPM: G. M. Parsey, S. A. Norberg, A. M. Lietz, J. Kruszelnicki, M. J. Kushner, “Multi-pulse Atmospheric Pressure Plasma Jets onto a Reactive Liquid Layer” (oral presentation)
2017	Y. Fu, G. M. Parsey, J. P. Verboncoeur, A. J. Christlieb “Investigation on the effect of nonlinear processes on similarity law in high-pressure argon discharges” - Phys. Plasmas 24, 113518 (2017) 70th GEC: S. A. Norberg (<i>absentia</i>), G. M. Parsey, S. Daudlin, A. M. Lietz, E. Johnsen, M. J. Kushner “Multi-pulse Operation of an Atmospheric Pressure Plasma Jet Onto a Reactive Liquid Layer” (oral presentation) 44th ICOPS: G. M. Parsey, J. P. Verboncoeur, A. J. Christlieb, “Uncertainty Quantification in Global Modeling of Plasma Assisted Combustion” (poster) 44th ICOPS: Y. Fu, G. M. Parsey, J. Krek, J. P. Verboncoeur, A. J. Christlieb, X. Wang, “Investigation of the Similarity Law in Gas Discharge at High Pressure using a Kinetic Global Model” (poster) 8th PSC Annual Meeting: J. P. Verboncoeur, G. M. Parsey, Y. Fu, J. Krek, “Dynamics in Strongly Driven High Pressure Reactive Plasmas” 8th PSC Annual Meeting: Y. Fu, G. M. Parsey, J. P. Verboncoeur, A. J. Christlieb, “Investigation on the Effect of Forbidden Processes on Similarity Law in Gas Discharges at High Pressure Based on a Kinetic Global Model”

Publications and Presentations cont.

2017	DOE PSC Center for Control of Plasma Kinetics July Highlight: Y. Fu, J. Krek, G. M. Parsey , J. P. Verboncoeur, "Identifying the Dominant Ions in Argon Plasmas: DEI, DAI, and Ar ₂ ⁺ "
2016	58 th DPP: G. M. Parsey , J. P. Verboncoeur, A. J. Christlieb, "Kinetic Global Modeling of Rare Gas Laser Reaction Networks" (poster) GRC PPS: G. M. Parsey , J. P. Verboncoeur, A. J. Christlieb, "Kinetic Global Modeling Framework" (poster)
2015	68 th GEC: G. M. Parsey , Y. Güçlü, J. P. Verboncoeur, A. J. Christlieb, "A Kinetic Plasma-Pumped Rare Gas Laser" (poster) 42 nd ICOPS: G. M. Parsey , Y. Güçlü, J. P. Verboncoeur, A. J. Christlieb, "Global Model Capability Study of EEDF Modification of Rare Gas Metastable Laser Reaction Kinetics" (poster)
2014	67 th GEC: G. M. Parsey , Y. Güçlü, J. P. Verboncoeur, A. J. Christlieb, "Feasibility Study of an EEDF Driven Rare Gas Metastable Laser" (poster) 41 st ICOPS: G. M. Parsey , Y. Güçlü, J. P. Verboncoeur, A. J. Christlieb, "General-Purpose Kinetic Global Modeling Framework for Multi-Phase Chemistry" (poster)
2013	66 th GEC: G. M. Parsey , Y. Güçlü, J. P. Verboncoeur, A. J. Christlieb, "Non-equilibrium Reaction Kinetics of an Atmospheric Pressure Microwave-Driven Plasma Torch: A Kinetic Global Model" (poster) PPPS-2013: G. M. Parsey , Y. Güçlü, J. P. Verboncoeur, A. J. Christlieb, "Non-equilibrium Kinetics of a Microwave-Assisted Jet Flame: Global Model and Comparison with Experiment" (poster)
2012	65 th GEC: G. M. Parsey , Y. Güçlü, J. P. Verboncoeur, "Kinetic Modeling of Electronically Enhanced Reaction Pathways in Plasma Assisted Combustion" (poster)

Awards

2015	Michigan Institute of Plasma Science and Engineering "Best Presentation Award" - Graduate Symposium
2007	Regional winners of ExploraVision Science competition

Personal Information

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| <ul style="list-style-type: none"> • D.O.B: October 3rd, 1989 • Dual citizenship: USA and UK | <ul style="list-style-type: none"> • Interests: rock climbing, cycling, hiking, DIY electronics, and cooking |
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* References available upon request