Cyril Galitzine

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EDUCATION

University of Michigan **Ann Arbor, MI**

Ph.D. in Aerospace Engineering; GPA: 4.0/4.0 August 2014

- Research Group: Nonequilibrium Gas and Plasma Dynamics Laboratory (Prof. Iain Boyd)
- Dissertation: On the Accuracy and Efficiency of the Direct Simulation Monte Carlo Method

Purdue University **West Lafayette, IN**

M.S. in Aeronautics and Astronautics; GPA: 4.0/4.0 May 2008

Ecole Polytechnique Fédérale de Lausanne (EPFL) **Lausanne, Switzerland**

M.Sc. in Mechanical Engineering; GPA: 5.78/6.0; Rank: 1/39 April 2006

RESEARCH EXPERIENCE

Northeastern University, College of Computer and Information Science **Boston, MA**

Postdoctoral Research Fellow in the Vitek Lab March 2015 - Present

- Developed a novel Bayesian inference method for the rates governing peroxisome abundance in human cells based on a stochastic model.
- Authored a paper that will be presented at the RECOMB 2018 conference (15% acceptance rate)
- Developed a new method to estimate the limit of blank (LOB) and detection (LOD) in mass spectrometric assays; implemented this method in a publicly available R package: MSStats.
- Authored a journal article in Molecular and Cell Proteomics.

University of Michigan, Department of Aerospace Engineering **Ann Arbor, MI**

Postdoctoral Research Fellow in the Nonequilibrium Gas Dynamics Laboratory September 2014 - March 2015

- Conducted simulations for the design of a Mach 7 scramjet (funded by industry).
- Wrote research reports and presented results to industrial partners.

University of Michigan, Department of Aerospace Engineering **Ann Arbor, MI**

Graduate Research Assistant in the Nonequilibrium Gas Dynamics Laboratory May 2008 - August 2014

- Developed numerical techniques to improve the efficiency of the simulation of high speed reentry flows around space capsules via Direct Simulation Monte Carlo (DSMC).
- Extensively modified and improved a parallel Monte Carlo simulation code in C++ and MPI.
- Authored two articles in the leading computational physics journal.
- Presented results at 3 international conferences (including 1 invited talk) and 4 funding reviews.

Purdue University, School of Aeronautics and Astronautics **West Lafayette, IN**

Graduate Researcher September 2007 - May 2008

- Conducted research on the numerical solution of the Boltzmann equation (a partial differential equation commonly used in physics) using a finite element method.
- Coauthored a journal article.

AWARDS AND RECOGNITIONS

Burroughs Wellcome Collaborative Travel Grant ($12,000, PI)	June 2017
College of Engineering Graduate Distinguished Achievement Award	May 2011
Michigan Institute for Plasma Science and Engineering Fellowship	2010 - 2012
University of Michigan College of Engineering Dean's Fellowship	2008 - 2010
Rhyming Prize for best M.Sc. thesis in Fluid Mechanics	April 2006
Bombardier Transportation Award for top graduating GPA	April 2006

PROFESSIONAL ACTIVITIES

Reviewer for PLOS Computational Biology, Molecular and Cell Proteomics, ISMB

PUBLICATIONS

Journal articles:

C. Galitzine et al., Nonlinear regression improves accuracy of characterization of multiplexed mass spectrometric assays, *Molecular and Cell Proteomics* 17 (2018)

C. Galitzine and I.D. Boyd, An analysis of the convergence of the direct simulation Monte Carlo method, *Journal of Computational Physics,* 289 (2015), pp. 196-223

C. Galitzine and I.D. Boyd, An adaptive procedure for the numerical parameters of a particle simulation, *Journal of Computational Physics*, 281 (2015), pp. 449-472

Conference proceedings:

C. Galitzine, P.J. Beltran, I. Cristea and O. Vitek, Statistical inference of peroxisome dynamics, to be presented in April 2018 at the RECOMB conference

C. Galitzine and I.D. Boyd, Development of an adaptive weighting scheme for DSMC and its application to an axisymmetric jet, Proceedings of the 28th International Symposium on Rarefied Gas Dynamics, AIP 2012.

C. Galitzine and I.D. Boyd, Simulation of the interaction between two counter flowing rarefied jets, Proceedings of the 27th International Symposium on Rarefied Gas Dynamics, AIP 2010

A. Alexeenko, **C. Galitzine,** and A. M. Alekseenko, High-order discontinuous Galerkin method for Boltzmann model equations, AIAA Paper 2008-4256, June 2008.

M. Terracol and **C. Galitzine**, On the use of high-order filtered schemes for large eddy simulation, AIAA paper 2008-0753, January 2008.