IVAN MITEVSKI

im2527@columbia.edu ◇ Website ◇ LinkedIn ◇ GitHub ◇ Google Scholar

EDUCATION

Columbia Universtiy, NYC *Sept 2018 - May 2023*
Ph.D. Applied Mathematics & Atmospheric Science, GPA: 4.05
Advisors: Lorenzo Polvani (Columbia) and Clara Orbe (NASA GISS)

New Jersey Institute of Technology (NJIT) *May 2018*
B.S. Applied Mathematics & B.S. Electrical Engineering (RF track), GPA: 4.0/4.0

FELLOWSHIPS, HONORS, AND AWARDS

- Graduate Research Fellowship: Future Investigators in NASA Earth and Space Science and Technology (FINESST) - *September 2020 - May 2023*
- Oustanding Student Presentation Award, AGU 2020 (San Francisco, CA / online) - *December 2020*
- Oustanding Poster Award, JMM 2019 (Baltimore, MD) - *January 2019*
- President's Medal for Academic Excellence at NJIT - *May 2018*
- 1st Place on ECE Senior Design Showcase at NJIT - *May 2018*
- Newark College of Engineering Outstanding Senior Award from Electrical Engineering and the Entire College of Engineering at NJIT - *March 2018*
- 1st Place for Best Undergraduate Research Project at Dana Knox Research Showcase at NJIT - *April 2017*
- 2nd Place at 18th Annual Philadelphia AMP Research Symposium Conference at Drexel University, Philadelphia, PA - *October 2016*
- Undergraduate Research and Innovation Grant of $9,000 from NJIT to investigate efficient energy system for NJIT Solar Car project - *November 2017*
- Ronald E. McNair Scholar
- Scholarships at NJIT: Albert Dorman Honors, John C. Hartmann, Chamberlain, Pelson
- Participated in IPHO (International Physics Olympiad) in Bangkok, Thailand - *July 2011*

RESEARCH AND TEACHING EXPERIENCE

Columbia University, NYC *May 2019 - Present*
Doctoral Research

- Designed and performed numerical experiments with CESM-LE climate models to explore Earth's climate system non-linearity to CO_2 perturbations from $0.125\times$ to $8\times CO_2$ values than year 1850
- Modified numerical radiation scheme in Fortran in CESM-LE model to enable atmospheric experiments at higher CO2
- Conducted extensive statistical analysis on experimental data sets (320TB) with python
- Discovered asymmetric response (35%) in climate sensitivity due to non-log CO2 radiative forcing and a minimum at 3xCO2 using regression analysis
- Discovered asymmetric response (35%) in climate sensitivity due to non-log CO2 radiative forcing and a non-monotonic response with a minimum at $3\times CO_2$ using regression analysis
- Discovered non-linear response in southern hemisphere eddy kinetic energy (storm tracks) using spectral analysis

Columbia University, NYC *Aug 2018 - December 2019*
Graduate Teaching Assistant

- Taught students, graded homework and exams for Geophysical Fluid Dynamics and Numerical Methods
- Initiated a machine learning reading group with 6 other Ph.D. students

Mathematical Institute, University of Oxford, UK *Jul 2018 - Aug 2018*
Undergraduate Researcher

- Simulated stochastic filtering with randomly scattered pores and connections in 3D to model asymmetric multilayered membrane filters with network models in MATLAB as a member of a 3-person team

Mathematics Department, NJIT *Jan 2017 - May 2018*
Undergraduate Researcher, NSF Grant EXTREEMS-QED

- Implemented Gauss-Seidel iterative method with V-cycle multigrid in MATLAB to solve the Monge-Ampere nonlinear partial differential equation as a member of a 3-person team

Electrical Engineering Department, NJIT *Mar 2017 - May 2018*
Co-Founder & Project Director, NJIT Solar Car

- Co-founded the NJIT solar car project, raised around $95,000, and recruited over 30 active members
- Oversaw and managed all stages of design and manufacturing of a solar car for the American Solar Challenge 2018

Electrical Engineering Department, NJIT *May 2016 - May 2018*
Undergraduate Electronics Researcher

- Conducted experiments in the Reliability of High-K Dielectrics
- Data Analysis of experimental data and comparison with theoretical models
- Discovered effects caused by defects not captured in existing models

New Jersey Governor's STEM Scholars *Sep 2017 - May 2018*
Mentoring High School Students

- Built "Micromouse" Robot that can self-navigate in a maze for student use
- Mentored students to develop search algorithm that finds the fastest path to the center of a maze

WORK EXPERIENCE

AllianceBernstein *Jun 2022 - Aug 2022*
Climate Finance Intern

- Established a framework and created a database to quantify and price avoided CO2e emissions from 58 climate products
- Found 14 optimal solutions to maximize decarbonization at a lower price than carbon credits
- Assessed decarbonization impact of all 58 products in 2021 and forecasted for 2030

New Jersey Institute of Technology *Aug 2017 - May 2018*
Resident Assistant

- Promoted academic excellence, addressed student needs and encouraged involvement among residents

Mak Group LLC – Clifton, NJ *May 2013 - Jan 2017*
Project Estimator/Manager, General Construction

- Estimated, scheduled, and coordinated trades at building projects up to $5,000,000
- Communicated conflicts and issues to designers and architects, and contributed to the solution
- Reviewed contracts and supervised, tracked, and evaluated day-to-day activities of accounting

- Oversaw financial objectives by preparing annual budgets, scheduling expenditures, analyzing variances, and initiating corrective actions

PEER-REVIEWED ARTICLES

- **I. Mitevski**, L.M. Polvani, and C. Orbe, *Asymmetric Warming/Cooling Response to CO2 Increase/Decrease Mainly Due to Non-Logarithmic Forcing, not Feedbacks*, `https://doi.org/10.1029/2021GL097133`, Geophysical Research Letters, 2022
- Y-C. Liang, L.M. Polvani, and **I. Mitevski**, *Arctic Amplification, and its Seasonal Migration, Over a Wide Range of CO2 Forcing*, `https://doi.org/10.1038/s41612-022-00228-8`, NPJ Climate and Atmospheric Science, 2022
- **I. Mitevski**, C. Orbe, R. Chemke, L.Nazarenko and L.M. Polvani, Non-Monotonic Response of the Climate System to Abrupt CO2 Forcing, `https://doi.org/10.1029/2020GL090861`, Geophysical Research Letters, 2021
- I. M. Griffiths, **I. Mitevski**, I. Vujkovac, M. R. Illingworth, P. S. Stewart, *The Role of Tortuosity in Filtration Efficiency: a General Network Model for Filtration*, `https://doi.org/10.1016/j.memsci.2019.117664`, Journal of Membrane Science, 2019
- **I. Mitevski**, D. Misra, M. N. Bhuyian, Y. Ding, *Frequency and Area Dependence of High-K/Ge MOS Capacitors*, `https://doi.org/10.1149/07711.1977ecst`, ECS Transactions, 77 (11) 1977-1984, 2017

CONFERENCE TALKS

- *Asymmetric and Non-monotonic Response of the Climate System to Idealized CO2 Forcing*, Model Hierarchy Workshop, Stanford University, CA *August 29, 2022*
- *Non-monotonic feedback dependence on CO2 due to a North Atlantic pattern effect*, CFMIP, Seattle, WA, *July 19, 2022*
- *Asymmetric Climate System Response to CO2 Induced Warming and Cooling*, American Geophysical Union, New Orleans, LA, *December 16, 2021*
- *Non-monotonic Response of the Climate System to Abrupt CO2 Forcing*, ECS & cloud feedback virtual symposia, Virtual, *June 8, 2021*
- *Non-monotonic Response of the Climate System to Abrupt CO2 Forcing*, ECS & cloud feedback virtual symposia, Virtual, *June 8, 2021*
- *Non-monotonic Response of the Climate System to Abrupt CO2 Forcing*, NASA GISS Seminar series, Virtual, *May 26, 2021*
- *The Role of Tortuosity in Filtration Efficiency*, Joint Mathematics Meeting, Baltimore, MD, *January 17, 2019*
- *Integrated Power Management System for Solar Cars*, ECE Department Senior Design Showcase at NJIT, Newark, NJ, *May 1, 2018*
- *Numerical Methods for Solving Monge-Ampere Equation*, JMM, San Diego, CA, *January 13, 2018*
- *Integrated Power Management System for Solar Cars*, NJIT URI Student Expo 2017 at Rangam Consultants, Somerset, NJ, *December 6, 2017*
- *Frequency and Area Dependence of High-K/Ge MOS Capacitors*, SHPE, Kansas City, MO, *November 13, 2017*
- *Frequency and Area Dependence of High-K/Ge MOS Capacitors*, 231st ECS Meeting, New Orleans, LA, *May 31, 2017*
- *Frequency and Area Dependence of High-K/Ge MOS Capacitors*, NJ Tech Council, Lincoln Technical Institute, Paramus, NJ, *October 20, 2016*

CONFERENCE POSTERS

- *Non-monotonic feedback dependence on CO2 due to a North Atlantic pattern effect*, US CLIVAR Pattern Effect Workshop, Boulder, CO, May 6, 2022

- *Southern Hemisphere Winter Storms Respond Differently to Low and High CO_2 forcing*, American Geophysical Union, New Orleans, LA, *December 17, 2021*
- *Non-monotonic Response of the Climate System to Abrupt CO_2 Forcing*, American Geophysical Union, New Orleans, LA, *December 15, 2021*
- *Non-monotonic Response of the Climate System to Abrupt CO_2 Forcing*, American Geophysical Union, San Francisco, CA / online, *December 11, 2020*
- *Dynamical Sensitivity to Abrupt Changes in CO_2 as Represented in NASA Goddard Institute for Space Studies (GISS) ModelE E2.1*, American Geophysical Union, San Francisco, CA, *December 10, 2019*
- *The Role of Tortuosity in Filtration Efficiency*, Joint Mathematics Meeting, Baltimore, MD, *January 18, 2019*
- *Numerical Methods for Solving Monge-Ampere Equation*, JMM, San Diego, CA, *January 12, 2018*
- *Numerical Methods for Solving Monge-Ampere Equation*, 10th International Undergraduate Symposium at NJIT, Newark, NJ, *July 28, 2017*
- *Frequency and Area Dependence of High-K/Ge MOS Capacitors*, The 2017 Dana Knox Student Research Showcase, Newark, NJ, *April 19, 2017*
- *Frequency and Area Dependence of High-K/Ge MOS Capacitors*, 18th Annual Philadelphia AMP Research Symposium and Mentoring Conference, Drexel University, Philadelphia, PA, *October 29, 2016*
- *Frequency and Area Dependence of High-K/Ge MOS Capacitors*, 9th International Undergraduate Symposium at NJIT, Newark, NJ, *July 27, 2016*

SKILLS

- Tools: Python, MATLAB, Linux, SQL (beginner)
- Packages: XArray, NumPy, Matplotlib, Jupiter Notebook, SciPy, Scikit-Learn, Pandas
- Languages: English, Macedonian (Native)