Curriculum Vitæ

Agnit Mukhopadhyay

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Education

Doctor of Philosophy in Space Sciences & Scientific Computing | University of Michigan — 2017 - 21
Topic: Sources of Ionospheric Conductance - Balance and Impact
Advisors: Prof. Daniel T. Welling & Prof. Michael W. Liemohn
Present Status: Candidate

Master of Science in Aerospace Engineering | University of Michigan — 2016 - 18
Specialization: Gas Dynamics

Bachelor of Technology in Aerospace Engineering | Punjab Engineering College — 2012 - 16
Specialization: Aerodynamics & Gas Propulsion

Research Experience

Graduate Student Research Assistant, University of Michigan, Ann Arbor — 2017 - Present
Funded through the *NASA Earth and Space Sciences Fellowship (2018 - 21).*

Visiting Research Scholar, University of Texas at Arlington — Summer 2019
Funded through the *Rackham Research Grant Fellowship (2019).*

Research Assistant, Punjab Engineering College, Chandigarh — 2013 - 16

Visiting Summer Scholar, Indian Institute of Science, Bangalore — Spring 2015

Exchange Research Student, Indian Institute of Technology, Kanpur — Winter 2015

Summer Intern, Indian Institute of Technology, Madras — Spring 2014

Research Intern, Indian Institute of Technology, Bombay — 2013 - 14

Teaching Experience

Grading Assistant, University of Michigan, Ann Arbor — 2017 - 2018
Gas Dynamics (225) | Aerospace Engineering | *Course Instructor*: Prof. Mirko Gamba (Winter 2017)
Adv. Fluid Mechanics (551) | Climate & Space Sciences | *Course Instructor*: Prof. R Paul Drake (Fall 2018)
Adv. Fluid Mechanics (551) | Climate & Space Sciences | *Course Instructor*: Prof. Jeremy Bassis (Fall 2019)

Teaching Assistant, Punjab Engineering College, Chandigarh — 2015 - 2016
Aerospace Propulsion (215) | Aerospace Engineering | *Course Instructor*: Prof. T. K. Jindal (Winter)
Propulsion & Materials Lab (217) | Aerospace Engineering | *Course Instructor*: Prof. T. K. Jindal (Fall)

Teaching Aide, Indian Institute of Technology, Bombay — Winter 2015
Introduction to Aircraft Design | Aerospace Engineering | *Course Instructor*: Prof. R. S. Pant

Honours, Fellowships & Awards

NASA Earth and Space Sciences Fellowship — 2018 - 21
Rackham Research Grant Fellowship (Pre-Candidate) — 2019
Michigan Institute of Plasma Sciences and Engineering Fellowship — 2018
UCAR/NASA-LWS Heliophysics Summer School Scholarship — 2018
NASA CCMC Student Research Contest Winner — 2017
Silver Medalist *in Aerospace Engineering (equiv. to summa cum laude)* — 2016
Institute Colour of Punjab Engineering College — 2016
ICICI Trinity Award Certificate of Appreciation — 2014

Outreach & Service

Leadership & Service

2019 - Present	Student Representative for NSF Geospace Environment Modeling (GEM) Workshop
2019 - Present	Graduate Employee Organization (GEO) Steward for Climate & Space, University of Michigan.
2018 - Present	Peer Mentorship Organizing Committee Member, Climate & Space, University of Michigan.
2019 - 20	Campus Lead of University of Michigan to the Indian Embassy in the USA.
2017 - 18	Secretary of the Indian Student Association (ISA) at the University of Michigan.

Affiliations

2017 - Present	American Geophysical Union
2013 - Present	American Institute of Aeronautics and Astronautics
2012 - Present	Aeronautical Society of India

Technical Skills

Languages	Python 2/3, FORTRAN 90, C/C++, LaTeX, MATLAB
Operating Systems	Linux, Windows, Mac
Software	IDL, TecPlot, ANSYS, CATIA, Gambit, FLUENT, Microsoft Office, SWMF

Publications

Mukhopadhyay, A. et al. (2020) "Global Driving of Auroral Conductance Balance of Sources", in prep, *Journal of Geophysical Research - Space Physics*.

Liemohn et al. (**Mukhopadhyay, A.**), (2020) "RMSE is Not Enough: Guidelines to Robust Data-Model Comparisons for Magnetospheric Physics", under review in *Journal of Atmospheric and Solar-Terrestrial Physics*.

Mukhopadhyay, A., Welling, D. T., Liemohn, M. W., Ridley, A. J., Chakrabarty S. and Anderson, B. J., (2020) "Conductance Model for Extreme Events - Impact of Auroral Conductance on Space Weather Forecasts", under review in *Space Weather*. DOI:10.1002/essoar.10503207.1. arXiv:abs/2008.12276

Mukhopadhyay, A., Welling, D. T., Liemohn, M. W. and Jia, X., (2020) "Statistical Comparison of Magnetopause Distances and CPCP Estimations from Global MHD Models", to be submitted in *Frontiers of Astronomy and Space Physics*. Preprint available: DOI:doi:10.1002/essoar.10502157.1.

Mukhopadhyay, A., van der Holst, B. and Landi, E., (2017) "Numerical Modeling of the Lower Corona during the Total Solar Eclipse of 2010 July 11", *Master's Directive Study Report*. DOI:10.5281/zenodo.4003116.

Sharma, N., **Mukhopadhyay, A.**, Sharma, V., Mukund, M. and Pant, R. S., (2014) "Design and Field Trials of Payload Recovery Device for Tethered Aerostats", *Innovative Design, Analysis and Development Practices in Aerospace and Automotive Engineering Proceedings*, 79 - 84. Springer AG. DOI:10.1007/978-81-322-1871-5_12

Selected Talks & Poster Presentations

Mukhopadhyay, A., Welling, D. T., Burleigh, M., Liemohn, M. W., Ridley, A., Zou, S., Anderson, B., Vandegriff, E., Connor, H., and Gjerloev, J., (2020) "Global Driving of Auroral Conductance - Impacts and Numerical Considerations", IEMIT Focus Group Session, *Virtual Geospace Environment Modeling (V-GEM) Workshop* (Held Online due to COVID-19; Link).

Mukhopadhyay, A., Welling, D. T., Liemohn, M. W. and Ridley, A. (2020) "A Study in Skill: Improving dB/dt Forecasts with Advanced Conductance Models", *17th Space Weather Conference* at *Annual Meeting of American Meteorological Society*, Boston, MA. Awarded Best Student Talk.

Mukhopadhyay, A., Welling, D. T., Burleigh, M., Liemohn, M. W. and Ridley, A. (2019) "Estimating Auroral Conductance in Global MHD Models", *Monday Science Telecon* (online), hosted by NASA Goddard Space Flight Center, Greenbelt, MD. Invited Talk.

Mukhopadhyay, A., Welling, D. T., Ridley, A., Liemohn, M. W. and Burleigh, M., (2019) "Identifying Sources of Auroral Conductance in Global MHD Models", *Geospace Environment Modeling Conference*, Santa Fe, NM. Awarded Best Poster.