

Graduate Student, Indian Institute of Science

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I am a Graduate Student at the Indian Institute of Science (IISc), Bengaluru, India. My research interests are in astrophysical fluid dynamics using computational techniques and cosmological simulations of galaxy formation. I am presently working on idealized simulations to understand the environmental influences on various components of the galaxy undergoing ram-pressure stripping.



Experience

2021-08 - Present	Senior Research Fellow Indian Institute of Science, Bengaluru, India
2019-08 - 2021-07	Junior Research Fellow Indian Institute of Science, Bengaluru, India



Education

2015-06 - 2017-05	Master of Science, Physics University of Calcutta, Kolkata, India
2012-06 - 2015-05	Bachelor of Science, Physics Bethune College, Kolkata, India



Publications

Ram pressure stripping in clusters: Gravity can bind the ISM but not the CGM, 2024
Monthly Notices of the Royal Astronomical Society ([doi:10.1093/mnras/stae1345](https://doi.org/10.1093/mnras/stae1345))

[Ritali Ghosh](#), Alankar Dutta, Prateek Sharma

Beyond profiles: Using log-normal distributions to model the multiphase circumgalactic medium, 2024

Accepted for publication in *Monthly Notices of the Royal Astronomical Society*
([doi:10.1093/mnras/stae977](https://doi.org/10.1093/mnras/stae977))

Alankar Dutta, Mukesh Singh Bisht, Prateek Sharma, [Ritali Ghosh](#), Manami Roy and Biman B. Nath



Talks and Research Visits

Conference Talk, Observe Local Think Global: What Solar Observations can teach us about Multiphase Plasmas across Astrophysical Scales, 2025

13 – 17 May 2025

organized International Space Science Institute at Bern, Switzerland

Conference Talk, Astronomical Society of India Meeting, ASI 2024

01– 04 February 2024

organized by the Astronomical Society of India (ASI) at IISc Bangalore, India

Seminar Talk, Universitäts-Sternwarte München, Germany

November 2023

at Weekly CAST Meeting, USM, München, Germany



Contact

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Technical Profile

- Proficient in C/C++, Python, Fortran, LATEX
- Tools/Codes used: PLUTO, ParaView, Cloudy, yt
- Ability to Work in a Team
- Critical thinking and problem solving



Languages

English (proficient)

Hindi (native speaker)

Bengali

German (A1 level)

Seminar Talk, European Southern Observatory, Garching, Germany

November 2023

at CGM Meeting, ESO, Garching, Germany

Seminar Talk, In-house Symposium, Department of Physics, IISc, India

November 2023

At the Department of Physical Science, Indian Institute of Science, Bengaluru, India

Seminar Talk, Max Planck Institute for Astrophysics, Garching, Germany

June 2023

MPA Galaxy Group Meeting, Garching, Germany

Conference Talk, Modelling of Multiphase Astrophysical Media, Aspenstein Castle at Lake Kochel, Bavaria

30 May - 02 June 2023

organized by Max Planck Institute for Astrophysics, Garching, Germany

Conference Talk, GALFLOWS 2023: A National Workshop on Galactic inflows and outflows on all Scales

02 - 05 February 2023

organized by Inter University Campus of Astronomy and Astrophysics (IUCAA), Pune

Poster Presentation, In-house Symposium, Department of Physics, IISc, India

February 2023

At the Department of Physical Science, Indian Institute of Science, Bengaluru, India

Seminar Talk, Max Planck Institute for Astrophysics, Garching, Germany

September 2022

MPA Cosmology Seminar, Garching, Germany

Seminar Talk, Dipartimento di Fisica e Astronomia, INAF, Italy

September 2022

at INAF, the Italian National Institute for Astrophysics, Padua, Italy

Conference Talk, What matter(s) around galaxies 2022: Connecting the dots between the CGM and the larger-scale environment

12 - 16 September 2022

organized by Università Milano-Bicocca at Champoluc, Aosta Valley, Italy

Poster Presentation, Astronomical Society of India Meeting, ASI 2022

March 2022

organized by the Astronomical Society of India (ASI) at IIT Roorkee, India

KITP Program: Fundamentals of Gaseous Halos (Online Attendee)

January 2022

organized by Kavli Institute for Theoretical Physics, Santa Barbara, California, USA



Academic Awards

National Level Qualified Examinations

- Qualified GATE Fellowship 2019
- Qualified UGC-JRF NET December 2018
- Qualified JEST 2019

Academic Achievements and Scholarships

- Ranked 5th in University of Calcutta, M.Sc. Batch 2015-17
- DST-INSPIRE Scholarship 2012-2017
- Mamraj Agarwal Rashtriya Puraskar, 2012 (*felicitated for scoring 96.6% in CBSE Class XII Exams, 2012 by the then Governor of West Bengal, India*)
- Certificate of Merit in Mathematics 2012 (*for being in top 0.1% of All India Senior School Certificate Exam, 2012 in Mathematics (Score: 100%)*)



Teaching Experience

Teaching Assistantship, PH 365, Galaxies and the Interstellar Medium, Joint Astronomy and Astrophysics Program (JAP), IISc
January 2023 — May 2023

Teaching Assistantship, PH 363, Introduction to Fluid Mechanics and Plasma Physics, Joint Astronomy and Astrophysics Program (JAP), IISc
August 2021 — December 2021



Professional services and outreach

Hands-on Sessions in the Workshop on Computational MHD with the PLUTO (May 2023)

Organized hands-on sessions on basics of MPI parallel computation to about 60 beginning Ph.D. and advanced master's students in the Workshop on Computational MHD with the PLUTO code, IISc Bangalore, India.

Volunteer for Open Day, IISc (Feb 2020, Mar 2023, Feb 2024)

Actively participated in popular science lectures and hands-on demonstrations to around 50,000 people at the annual Open Day event at the Indian Institute of Science.

Astronomy Outreach Volunteer, International Astronomical Union (IAU) (2019)

Engaged with approximately 600 primary and high school students at Kendriya Vidyalaya IISc, Bangalore, India as a part of the International Astronomical Union (IAU) global project 'Astronomy Day in school'.



References

Prof. Prateek Sharma, Indian Institute of Science, Bangalore, India

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Dr. Max Gronke, Max Planck Institute for Astrophysics, Garching, Germany

 maxbg@mpa-garching.mpg.de