



RAJSEKHAR MOHAPATRA

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- Education** PhD Candidate, Research School of Astronomy and Astrophysics (RSAA), Australian National University (ANU), Canberra, 2018–present.
B.Sc.(Research), Indian Institute of Science (IISc), Bengaluru, 2014–2018.
Major Subject: *Physics*.
- Research Interests** Galaxies and galaxy clusters, physics of fluids and plasma, turbulence in astrophysical scales.
- Research projects** *Turbulence, buoyancy and cooling in the intracluster medium*, October 2018–present.
Primary supervisor: *A/Prof. Christoph Federrath, RSAA, ANU*.
Studying turbulence in the intracluster medium., May 2017–June 2018.
Supervisor: *A/Prof. Prateek Sharma, Dept of Physics, IISc*.
- Publications** *Velocity structure functions in multiphase turbulence: interpreting kinematics of $H\alpha$ filaments in cool core clusters*, **Mohapatra, R**, Jetti, M, Sharma, P and Federrath, C, submitted to MNRAS, 2021.
Characterising the turbulent multiphase halos with periodic box simulations, **Mohapatra, R**, Jetti, M, Sharma, P and Federrath, C, submitted to MNRAS, 2021.
Turbulent density and pressure fluctuations in the stratified intracluster medium, **Mohapatra, R**, Federrath, C and Sharma, P, MNRAS, 2021.
Turbulence in stratified atmospheres: implications for the intracluster medium, **Mohapatra, R**, Federrath, C and Sharma, P, MNRAS, 2020.
Turbulence in the intracluster medium: simulations, observables & thermodynamics, **Mohapatra, R** and Sharma, P, MNRAS, 2019.
- Conferences and seminars** *National Astronomy Meeting 2021*, online, 19-23 July 2021.
European Astronomical Society, annual meeting, online, 28 June-2 July 2021.
Fundamentals of Gaseous halos, online, 11 January-5 March 2021.
43rd COSPAR Scientific Assembly, online, 28 January-4 February 2021.
Astronomy seminar, Indian Institute of Science, Bangalore, India, 16 January 2020.
Seminar, SISSA, Trieste, Italy, 13 November 2019.
Cosmic turbulence and magnetic fields: physics of baryonic matter across time and scales, at Cargese Institute, Cargese, France, 4-8 November 2019.
High energy seminar, MPA, Garching, Germany, 19 July 2019.

Tracing Cosmic Evolution with Clusters of Galaxies, at Sexten Center for Astrophysics, Sesto, Italy, 8-12 July 2019.

ANITA 2019, at Swinburne University, Melbourne, Australia, 7–8 February 2019.

Presision undergraduate physics symposium, at Presidency University, Kolkata, India, 4–5 August 2018.

Bubbles big and small, at Indian Institute of Science, Bangalore, India, 13–16 June 2018.

Turbulence from Angstroms to light years, at the International Centre for Theoretical Sciences, Bangalore, 20–25 January 2018.

Journal of Fluid Mechanics Symposia, at Indian Institute of Science, Bangalore, 13–14 December 2017.

Fluids Day Symposium, at Indian Institute of Science, Bangalore, 12 December 2017.

Programming languages	C, C++, FORTRAN, Python, L ^A T _E X, Shell scripting, Matlab, Mathematica.
Advanced code	FLASH, PLUTO.
Languages	<i>Odia</i> : Native Language (speaking, reading, writing). <i>English</i> : Fluent (speaking, reading, writing). <i>Hindi</i> : Fluent (speaking, reading, writing).
Mentoring	Co-mentored Mrinal Jetti during his Masters thesis, July 2020–August 2021. Mentored high school students in Astronomy projects at Mount Stromlo observatory through <i>MSATT</i> , February 2019–September 2020.
Tutoring	Tutor for <i>Advanced Electromagnetism</i> , with the ANU Tjabl centre, February–June 2021. Tutor for <i>Physics of Materials</i> , February–June 2020.
Outreach activities	Mount Stromlo outreach assistant, November 2018–present. Open day presentations at Indian Institute of Science, Bangalore, 2015–2018.
Other activities	Member of the <i>Inclusion, Diversity, Equity and Access (IDEA) committee</i> , RSAA, ANU, September 2020–present. Member of the <i>Mount Stromlo student seminars organising committee</i> , May–November 2019. Part of the IISc undergraduate peer support group <i>Misfit elves</i> , Aug 2017–June 2018. Organiser of the IISc undergraduate physics club meetings, Aug 2015–April 2016.
Hobbies & sports	Cycling, football.