

Rajesh Mondal

CONTACT INFORMATION	Department of Physics Centre for Theoretical Studies Indian Institute of Technology Kharagpur Kharagpur, West Bengal, India – 721302	+91 7797 575 301 rm@phy.iitkgp.ernet.in , rajeshmondal18@gmail.com http://www.cts.iitkgp.ernet.in/rajesh
ACADEMIC POSITION	Research Fellow , Indian Institute of Technology Kharagpur, India	June 2012 to present
PHD SUPERVISOR	Prof. Somnath Bharadwaj Department of Physics Indian Institute of Technology Kharagpur Kharagpur, West Bengal, India – 721302	+91 3222 283 806 somnath@phy.iitkgp.ernet.in somnathbharadwaj@gmail.com www.iitkgp.ac.in/fac-profiles/somnath
EDUCATION	Master of Science, Physics, Indian Institute of Technology Kharagpur, WB, India Performance: 1st Class	June 2012
	Bachelor of Science, Physics, Scottish Church College, University of Calcutta, Kolkata, WB, India Performance: 1st Class	June 2010
FELLOWSHIPS, AWARDS AND MEMBERSHIPS	Member of the “ SKA India EoR ” science working group	September 2015 to present
	Senior Research Fellowship (SRF) , IIT Kharagpur	June 2014 to present
	Junior Research Fellowship (JRF) , IIT Kharagpur	June 2012 to June 2014
	Joint Council of Scientific & Industrial Research (CSIR) – University Grants Commission (UGC) test for JRF and Eligibility for Lectureship	June 2012
	Graduate Aptitude Test (GATE)	2012
	Joint Admission test for M.Sc. (JAM)	2010
RESEARCH INTERESTS	Epoch of Reionization, Simulations of Epoch of Reionization 21-cm signal, Cosmological N -body Simulations, Statistics of non-Gaussian cosmological signal, Large Scale Structure Formation, Low Frequency Radio Interferometry	
FIRST OR SECOND AUTHOR PUBLICATIONS	<ol style="list-style-type: none">4. Rajesh Mondal, Somnath Bharadwaj, Suman Majumdar, 2016, <i>Statistics of the epoch of reionization (EoR) 21-cm signal – II. The evolution of the power spectrum error-covariance</i>, submitted to MNRAS, arXiv:1606.038743. Abir Sarkar, Rajesh Mondal, Subinoy Das, Shiv.K.Sethi, Somnath Bharadwaj, David J. E. Marsh, 2016, <i>The effects of the small-scale DM power on the cosmological neutral hydrogen (HI) distribution at high redshifts</i>, JCAP, 04, 012, arXiv:1512.033252. Rajesh Mondal, Somnath Bharadwaj, Suman Majumdar, 2016, <i>Statistics of the epoch of reionization 21-cm signal – I. Power spectrum error-covariance</i>, MNRAS, 456, 1936, arXiv:1508.008961. Rajesh Mondal, Somnath Bharadwaj, Suman Majumdar, Apurba Bera, Ayan Acharyya, 2015, <i>The effect of non-Gaussianity on error predictions for the Epoch of Reionization (EoR) 21-cm power spectrum</i>, MNRAS Letters, 449, L41, arXiv:1409.4420	

PUBLICATIONS AS A
MEMBER OF CORE
SCIENCE TEAM

2. S. Majumdar, K. Datta, R. Ghara, **R. Mondal**, T. Roy Choudhury, S. Bharadwaj, Sk. S. Ali, A. Datta, 2016, *Line of sight anisotropies in the Cosmic Dawn and EoR 21-cm power spectrum*, [Journal of Astrophysics and Astronomy](#) accepted
1. T. Roy Choudhury, K. Datta, S. Majumdar, R. Ghara, A. Paranjape, **R. Mondal**, S. Bharadwaj, S. Samui, 2016, *Modelling the 21 cm Signal From the Epoch of Reionization and Cosmic Dawn*, [Journal of Astrophysics and Astronomy](#) accepted

COMPUTING SKILL **Operating Systems:** Linux, WINDOWS

Programming Language: C, Python

Particle-Mesh (PM) Parallelized *N*-Body Simulation

Semi-numerical Simulation of the Epoch of Reionization (EoR) signal

Application Packages:

Scientific Packages: Numerical Recipes in C, OpenMP, FFTW, GSL, NumPy, MATLAB, LabVIEW

Text Processing: LaTeX, MS Office, Open Office

Graphics: GNUplot, matplotlib, Origin, Xfig

Markup Language: HTML

TEACHING AND
RELATED
EXPERIENCES

9. M.Sc. Integrated 3rd year and M.Sc. 1st year **Computational Physics Lab** (Course no. PH39002 and PH45006), Spring semester **2016**, IIT Kharagpur
8. B.Tech. 1st year, **Physics-I Tutorial**, Autumn semester **2015**, IIT Kharagpur
7. M.Sc. Integrated 3rd year and M.Sc. 1st year **Computational Physics Lab** (Course no. PH39002 and PH45006), Spring semester **2015**, IIT Kharagpur
6. B.Tech. 1st year, **Physics-I Tutorial**, Autumn semester **2014**, IIT Kharagpur
5. B.Tech. 1st year **Physics Lab** (Course no. PH19001), Spring semester **2014**, IIT Kharagpur
4. M.Sc. Integrated 3rd year and M.Sc. 1st year **Computational Physics Lab** (Course no. PH39002 and PH45006), Spring semester **2014**, IIT Kharagpur
3. B.Tech 1st year **Physics Lab** (Course no. PH19001), Autumn semester **2013**, IIT Kharagpur
2. M.Sc. Integrated 4th year and M.Sc. 2nd year **Statistical Physics I** (Course no. PH41007 and PH53007) Tutorial, Autumn semester **2013**, IIT Kharagpur
1. B.Tech. 1st year **Physics Lab** (Course no. PH19001), Spring semester **2013**, IIT Kharagpur

STUDENTS
MENTORED

M.Sc. Student

Apurba Bera, Department of Physics, IIT Kharagpur **2014 to 2015**

Ayan Acharyya, Department of Physics, IIT Kharagpur **2014 to 2015**

Sampath Mukherjee, Department of Physics, IIT Kharagpur **2013 to 2014**

COLLABORATORS

Somnath Bharadwaj (IIT Kharagpur, India), Suman Majumdar (Imperial College, London), Shiv. K. Sethi (Raman Research Institute, India), Subinoy Das (Indian Institute of Science, India), Tirthankar Roy Choudhury (NCRA-TIFR, India), Kanan K. Datta (Presidency University, India)

ACADEMIC VISITS

2. **Scuola Normale Superiore**, Pisa, Italy **May 31 – June 5, 2016**

1. **Raman Research Institute**, Bangalore, India **June 15–22, 2015**

TALKS AND
PRESENTATIONS

7. **Workshop on Cosmology with Next Generation Radio Surveys**, ICTP, Italy (6 – 17 June 2016): *Statistics of the epoch of reionization (EoR) 21-cm signal: The evolution of the power spectrum error-covariance*
6. **Scuola Normale Superiore**, Pisa, Italy (1st June 2016): *Statistics of the epoch of reionization 21-cm signal: Power spectrum error-covariance*
5. **A National Workshop: Cosmology with the HI 21-cm Line**, RRI, Bangalore (23 – 26 June 2015): *EoR 21-cm Power Spectrum Error Covariance*
4. **The Olympian Symposium 2015: Cosmology and the Epoch of Reionization**, Mount Olympus, Greece (18 – 22 May 2015): *The effect of non-Gaussianity on error predictions for the Epoch of Reionization (EoR) 21-cm power spectrum*
3. **Saha Theory Workshop: Cosmology at the Interface**, SINP, Kolkata (18 – 22 May 2015): *Non-Gaussian error predictions for the EoR 21-cm power spectrum*
2. **5th Research Scholars' Day**, IIT Kharagpur (21st March 2015): *The 21-cm signal from the epoch of reionization*
1. **Topical Conference on Gravity and Cosmology**, Presidency University (9th Aug 2014): *Semi-numerical Simulation of the EoR signal*

OTHER
EXPERIENCES

Website designer
[Workshop on Epoch of Reionization](#), IIT Kharagpur, India **18 – 22 July 2016**

Local Organizing Committee
The Topical Conference on Gravity and Cosmology, IIT Kharagpur **28th Feb 2015**

EXTRACURRICULAR
ACTIVITIES

General Secretary Social and Cultural, Vidyasagar Hall of Residence, IIT Kharagpur for the session **2013 – 2014**

Tabla player

REFERENCES

Prof. Somnath Bharadwaj, Department of Physics, IIT Kharagpur, Kharagpur, West Bengal, India – 721302, somnath@phy.iitkgp.ernet.in, somnathbharadwaj@gmail.com, +91 3222 283 806

Prof. Shiv. K. Sethi, Raman Research Institute, Bangalore, India – 560080, sethi@rri.res.in

Prof. Subinoy Das, Indian Institute of Science, Bangalore, India – 560034, subinoy@iiap.res.in

Prof. Tirthankar Roy Choudhury, NCRA-TIFR, Pune University Campus, Post Bag 3, Ganeshkhind, Pune, India – 411007, tirth@ncra.tifr.res.in, +91 2025 719 270

Prof. Kanan Kumar Datta, Department of Physics, Presidency University, 86/1 College Street, Kolkata, West Bengal, India – 700073, kanan.physics@presiuniv.ac.in, +91 8697 653 659

Prof Sk. Saiyad Ali, Department of Physics, Jadavpur University, 7/6 Kalitala Road, Kalitala, Kolkata, India – 700078, saiyad@phys.jdvu.ac.in

Dr. Suman Majumdar, Department of Physics, Room No. 1012, Blackett Laboratory, Imperial College, London SW7 2AZ, UK, s.majumdar@imperial.ac.uk, +44 7840 036 051

Prof. Sayan Kar, Department of Physics, IIT Kharagpur, Kharagpur, West Bengal, India – 721302, sayan@phy.iitkgp.ernet.in

Prof. Sugata Pratik Khastgir, Department of Physics, IIT Kharagpur, Kharagpur, West Bengal, India – 721302, pratik@phy.iitkgp.ernet.in, +91 3222 283 858