

Mudit Garg

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EDUCATION

08/2021 – 07/2025	PhD in Gravitational Waves Astrophysics University of Zurich	Advisor: Prof. Lucio Mayer
09/2018 – 12/2020	Master of Science in Physics with distinction ETH Zurich	GPA: 5.87/6 Advisor: Prof. Lavinia Heisenberg <i>Relativistic, ghost-free, and covariant hybrid model for MOND: $f(Q)$</i>
07/2014 – 06/2018	Bachelor of Technology in Engineering Physics IIT Delhi	GPA: 8.15/10 Advisor: Prof. Ajit Kumar <i>Geodesics near a charged black hole in $(R \pm \mu^4/R)$ gravity</i>

PUBLICATIONS

2024	En-Kun Li, [19 authors], MG , [31 authors] <i>Gravitational Wave Astronomy With TianQin</i>	arXiv
2024	MG , Christopher Tiede, Daniel J. D’Orazio <i>Accretion mediated spin-eccentricity correlations in LISA MBHBs</i>	Submitted to MNRAS
2024	MG , Andrea Derdzinski, Shubhanshu Tiwari, Jonathan Gair, Lucio Mayer, MNRAS , <i>Measuring eccentricity and gas-induced perturbation from GWs of LISA MBHBs</i>	
2024	MG , Shubhanshu Tiwari, Andrea Derdzinski, John G. Baker, Sylvain Marsat, Lucio Mayer, MNRAS , <i>The minimum measurable eccentricity from GWs of LISA MBHBs</i>	
2022	MG , Andrea Derdzinski, Lorenz Zwick, Pedro R. Capelo, Lucio Mayer <i>The imprint of gas on GWs from LISA intermediate-mass BHBs</i>	MNRAS
2022	Lorenz Zwick, Andrea Derdzinski, MG , Pedro R. Capelo, Lucio Mayer <i>Dirty waveforms: multiband harmonic content of gas-embedded GW sources</i>	MNRAS
2020	Fabio D’Ambrosio, MG , Lavinia Heisenberg [‡] <i>Non-linear extension of non-metricity scalar for MOND</i>	PLB
2020	Fabio D’Ambrosio, MG , Lavinia Heisenberg, Stefan Zentarra [‡] <i>ADM formulation and Hamiltonian analysis of Coincident General Relativity</i>	arXiv

‡ Alphabetical order

SELECTED TALKS/PRESENTATIONS

11/2023	Meeting: LISA Astrophysics Working Group at MPA <i>TBD</i> [‡]	Garching
10/2024	CIERA theory group meeting at Northwestern University <i>Decoding Astrophysics from inspiraling LISA MBHBs</i>	Evanston
10/2024	CTC Theory Seminar at University of Maryland <i>Decoding Astrophysics from inspiraling LISA MBHBs</i>	College Park
09/2024	Astrophysics Seminar at JHU <i>Decoding Astrophysics from inspiraling LISA MBHBs</i>	Baltimore

09/2024	Branch Lunch at NASA Goddard <i>Decoding Astrophysics from inspiraling LISA MBHBs</i>	Greenbelt
09/2024	Astro Coffee at Institute of Advanced Study <i>Measuring eccentricity and gas-induced perturbation from GWs of LISA MBHBs</i>	Princeton
09/2024	Astro Seminar at Columbia University <i>Decoding Astrophysics from inspiraling LISA MBHBs</i>	NYC
09/2024	Monday Afternoon Talks at MIT Kavli Institute <i>Decoding Astrophysics from inspiraling LISA MBHBs</i>	Boston
09/2024	Meeting: The Swiss Physical Society at ETH Zurich <i>Decoding Astrophysics from inspiraling LISA MBHBs</i>	Zurich
08/2024	Conference (Invited): New ideas on the origin of BH mergers Niels Bohr Institute <i>Astrophysical signatures on the LISA data stream from MBHBs</i>	Copenhagen
07/2024	15th LISA Symposium at University College Dublin <i>Poster: Astrophysical signatures on the LISA data stream from MBHBs</i>	Dublin
06/2024	GRAPPA Seminar at University of Amsterdam <i>Astrophysical signatures on the LISA data stream from MBHBs</i>	Amsterdam
06/2024	LISA community Call <i>Measuring eccentricity and gas from GWs of LISA MBHBs</i>	Online
05/2024	Cosmology Seminar at Max Planck institute for Astrophysics <i>Astrophysical signatures on GWs from LISA MBHBs</i>	Garching
02/2024	DAMTP GR Seminar at University of Cambridge <i>Astrophysical signatures on the LISA data stream from MBHBs</i>	Cambridge
09/2023	Meeting: LISA Astrophysics Working Group at University of Milano-Bicocca <i>The minimum measurable eccentricity from GWs of LISA MBHBs</i>	Milan
09/2023	Meeting: The Swiss-Austrian joint Physical Society at University of Basel <i>The minimum measurable eccentricity from GWs of LISA MBHBs</i>	Basel
07/2023	Conference: GW populations: what's next? at University of Milano-Bicocca <i>The measurability of gas and eccentricity from GWs of LISA MBHBs</i>	Milan
07/2023	Call: LISA data challenge working group <i>Measuring eccentricity from GWs of LISA MBHBs</i>	Online
11/2022	Conference: LISA data analysis: classical methods to machine learning CNRS, L2IT, APC, CEA, and CNES <i>The imprint of Gas on GWs from LISA IMBH Binaries</i>	Toulouse
09/2022	Conference: Origin, growth and feedback of black holes in dwarf galaxies Donostia International Physics Center <i>The imprint of Gas on GWs from LISA IMBH Binaries</i>	San Sebastian
05/2022	Conference: IMBHs: New Science from Stellar Evolution to Cosmology CIERA, Northwestern University <i>Gas impact on GWs from LISA IMBH Binaries</i>	San Juan

† Will participate

RESEARCH VISITS

10/2024	Center for Interdisciplinary Exploration and Research in Astrophysics (CIERA) <i>Host: Prof. Shane Larson</i>	Evanston
09/2024	Center for Computational Astrophysics (CCA), Flatiron Institute <i>Host: Prof. Will Farr, Dr. Yan-Fei Jiang, and Dr. Matteo Cantiello</i>	NYC
02/2024	Institute of Gravitational Wave Astronomy <i>Host: Prof. Dr. Alberto Vecchio</i>	Birmingham
02/2024	Institute of Cosmology and Gravitation <i>Host: Prof. Dr. Ian Harry</i>	Portsmouth
11/2023	Max Planck institute for Gravitational Physics (Albert Einstein Institute) <i>Host: Dr. Jonathan Gair</i>	Potsdam

† Will participate

PROGRAMS/SCHOOLS

09/2024	Workshop: Fundamental Physics Meets Waveforms With LISA <i>Max Planck institute for Gravitational Physics (Albert Einstein Institute)</i>	Potsdam
09/2023	Kavli-Villum School: Gravitational Waves <i>Corfu Summer Institute</i>	Corfu
11/2022	Workshop: LISA data analysis: classical methods to machine learning <i>CNRS, L2IT, APC, CEA, and CNES</i>	Toulouse
07/2022	Workshop: LISA Data Challenge Workshop <i>LISA Data Challenge Working Group</i>	Online
07/2022	Workshop: From Scattering Amplitudes to GW Predictions for Compact Binaries <i>ETH Zurich & University of Zurich</i>	Zurich
06/2022	Meeting: LISA Astrophysics Working Group <i>Institute for Gravitational Wave Astronomy, University of Birmingham</i>	Online
01/2022	Saas-Fee School: Multi-Messenger GW Astronomy <i>Swiss Society for Astrophysics and Astronomy</i>	Saas-Fee
08/2021	NBIA School: Gravitational wave astrophysics <i>Niels Bohr Institute, University of Copenhagen</i>	Copenhagen

† Will participate

PROFESSIONAL RESPONSIBILITIES AND MEMBERSHIPS

2023 –	Organizer of the ‘GWs, BHs, and Compact Binaries’ seminar <i>Department of Astrophysics, University of Zurich</i>
2023 –	Contributor to the TianQin white paper <i>Computed the gas-induced dephasing for intermediate-mass inspirals</i>
2022 –	Contributor to the LISA DiscIMRI code comparison project <i>Tasks: Literature review, plot making, and text writing</i>

2021 – | Member of the LISA consortium and its astrophysics, waveforms, and data challenge working groups

2021 – | Teaching assistant for several astrophysics courses at the University of Zurich

2021 | Research assistant at the Department of Astrophysics, University of Zurich

OTHER ACTIVITIES

- **Hobbies and Interests:** Outdoor activities, board and video games, and swimming

Last update: October 3, 2024