

Curriculum vitae

Personal Details

Name: Manibrata Sen

Age: 33 years (as of Sep, 2024)

Nationality: Indian

Email: manibrata@mpi-hd.mpg.de

Current Address: Max-Planck-Institut für Kernphysik, Saupfercheckweg 1, Heidelberg, Germany 69117.

Research Experience

Assistant Professor

Indian Institute of Technology Bombay, India

Oct, 2024–

Postdoctoral Researcher, Heidelberg, Germany

Max-Planck-Institut für Kernphysik,

Post-Doctoral Supervisor: Prof. Manfred Lindner

Oct, 2021 – Sep, 2024

N3AS Postdoctoral Fellow

Network for Neutrinos, Nuclear Astrophysics, and Symmetries (N3AS)

University of California, Berkeley and Northwestern University, Evanston, USA.

Post-Doctoral Supervisor: Prof. André de Gouvêa.

Oct, 2018 – Sep, 2021

Doctoral Fellow

Tata Institute Of Fundamental Research, Mumbai, India.

Thesis Supervisor: Prof. Amol Dighe

Thesis Co-Supervisor: Prof. Basudeb Dasgupta

Aug, 2012 – Jul, 2018

Summer Research Fellow

Indian Academy Of Science

Supervisor: Prof. Anirban Kundu, University of Calcutta (Kolkata)

2013

Education

Doctor of Philosophy, Date of PhD: 15/02/19

Department of Theoretical Physics, Tata Institute Of Fundamental Research, Mumbai, India

2015 – 2018

Master of Science

Department of Theoretical Physics, Tata Institute Of Fundamental Research, Mumbai, India

Grade: 76%

2012 – 2015

Bachelor of Science

Department of Physics, St.Xavier's College, Kolkata, India

Grade: 87%

2009-2012

St.James' School

Indian School Certificate (Year 10+2) Examination , Kolkata, India

Grade: 95%

2007-2009

Selected Honors and Awards

- **Rahul Basu award for the Best Thesis in High Energy Physics (2018-20)** by the Indian Physics Association.
- **Geeta Udgaonkar Award for best thesis (2018-19)** at the Tata Institute of Fundamental Research, India, 2019.
- **Network for Neutrinos, Nuclear Astrophysics, and Symmetries (N3AS) fellowship** at UC Berkeley, 2018.
- Eligibility for lecturership through the **National Eligibility Test (NET) conducted by University Grants Commission-National Eligibility Test (UGC-NET)**.

- **Gold Medal for topping the National Graduate Physics Examination (N.G.P.E) Olympiad** conducted by the Indian Association of Physics Teachers (IAPT), 2012.
- Fellowship for outstanding performance in the Indian Certificate of Secondary Education (Year 10) Examination, 2007 by Mamraj Agarwal Foundation, Regd. No. S/99327 under West Bengal Societies Act of XXVI of 1961.

Selected Invited Talks

- Sep 2024: Overview of BSM physics in the DSNB**, invited plenary talk at the workshop "Towards the Detection of Diffuse Supernova Neutrinos: What will we see? What can we learn?", Mainz, Germany
- Sep 2024: Testing neutrino non-standard physics**, invited plenary talk at the Neutrino Oscillations Workshop, Otranto, Italy.
- Jul 2024: Exploring the origin of neutrino mass in dark alleys**, invited talk at the Neutrino Frontiers, GGI Florence, Italy.
- Aug 2023: Supernova neutrinos**, invited review talk at the Invisibles workshop, Göttingen, Germany.
- May 2023: Supernova neutrinos and new physics**, invited review talk at the SNvD 2023@LNGS: International Conference on Supernova Neutrino Detection, Italy.
- Jun 2022: Probing neutrino masses at early redshift**, chalkboard talk the workshop "Neutrinos, Flavor and Beyond", organized by MITP at Capri, Italy.
- May 2021: New physics from supernova neutrinos**, invited review talk at the First EuCAPT Annual Symposium, CERN, Switzerland.

Mentoring experience

- 2023-:** Tim Herbermann, graduate student at MPIK.
- 2021-2023:** Ting-Chen, graduate student at MPIK, Heidelberg, current postdoc at Fermilab.
- 2019-2021:** Jean Weill, graduate student at Northwestern University.
- 2020:** Abhay Agarwal, N3AS undergraduate student at UC, Berkeley.

Synergistic activities

- Referee: Nature Communications, Physical Review Letters, Physical Review D, Journal of High Energy Physics, Physics Letters B, and European Physical Journal C.
- Co-organizer for the virtual MITP YOUNGST@RS conference- Interacting dark sectors in astrophysics, cosmology, and the lab, Nov 6-9, 2023.
- Local organizer for the 27th International Symposium on Particles, Strings and Cosmology (PASCOS 22), July 25-29, 2022.
- Co-organizer of the weekly public virtual seminars for the N3AS collaboration, May 2020-Sep 2021.

Teaching Experience

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| Course: Classical Mechanics I:
<i>Teaching Assistant</i> | <i>Autumn 2016</i> |
| Course: Particle Physics
<i>Teaching Assistant</i> | <i>Autumn 2015</i> |
| Course: Quantum Mechanics II
<i>Teaching Assistant</i> | <i>Spring 2015</i> |
| Course: Advanced Quantum Mechanics
<i>Teaching Assistant</i> | <i>Autumn 2014</i> |