

Curriculum Vitae

Personal information

Name : Devabrat Mahanta

Date of Birth : 29 October 1994

Nationality : Indian

Languages Known : Assamese, Hindi and English

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Present Affiliation

February 2024-present Assistant Professor
Department of Physics
Pragjyotish College

Work experience

- Worked as an assistant professor at the department of Physics, Abhayapuri College from 3rd December, 2021 to 19th February 2024.
- Working as an assistant professor at the department of Physics, Pragjyotish college since 20th February 2024.

Education

Class 10th (2010) School : Milan High School Arikuchi, Assam, India
Board : SEBA
Percentage : 89.5 %

Class 12th (2012) School : Dr. Sarvepalli Radhakrishnan Academy,
Nalbari, Assam, India
Board : AHSEC
Percentage : 87.4 %

B.Sc. (2015) College : Nalbari College
University : Gauhati University
CGPA : 9.2

M.Sc. (2017) University : Gauhati University
CGPA : 8.85 (**Rank: Second Position**)

Ph.D. (2023)

University / Institute: Indian Institute of Technology Guwahati

Thesis title: Aspects of Low Scale Leptogenesis and Connection to
Dark Matter

Supervisor: Dr. Debasish Borah

Competitive Examinations

Joint Entrance Screening Test (JEST 2015)

Graduate Aptitude Test in Engineering (GATE 2017)

National Eligibility Test (NET 2018)

BARC OCES Examination (2017)

Internships/Projects

- “A Project Work on Chaos” under the supervision of Prof. Madhurjya Prashad Bora, Gauhati University (DST INSPIRE project) in 2015.
- “Large Scale Structure Formation in the Universe” under the supervision of Dr. Sanjeev Kalita, Gauhati University (M.Sc thesis project) in 2017.

Awards/Scholarships

- Recieved DST INSPIRE scholarship from 2012 to 2017.

Research interest

- Leptogenesis, dark-matter and neutrino mass models
- Inflationary Cosmology
- Primordial black holes
- Axion Cosmology

List of publications

SL No.	Name	Authors	Journal	ISSN	Year of Publication	Impact Factor
1	<i>Fermion Dark Matter with N_2 Leptogenesis in Minimal Scotogenic Model</i>	Devabrat Mahanta and Debasish Borah	JCAP	1475-7516	2019	6.4
2	<i>TeV Scale Leptogenesis with Dark Matter in Non-standard</i>	Devabrat Mahanta and Debasish Borah	JCAP	1475-7516	2020	6.4

	<i>Cosmology</i>					
3	<i>Observable Gravitational Wave in Minimal Scotogenic Model</i>	Debasish Borah, Arnab Dasgupta, Kohei Fujikura, Sin K. Kang and Devabrat Mahanta	JCAP	1475-7516	2020	6.4
4	<i>TeV Scale Resonant Leptogenesis with $L_{\mu} - L_{\tau}$ Gauge Symmetry in Light of the Muon $g - 2$</i>	Debasish Borah, Arnab Dasgupta and Devabrat Mahanta	Phys.Rev. D	24700010	2021	5.407
5	<i>Low Scale Leptogenesis and Dark Matter in the Presence of Primordial Black Holes</i>	Suruj Jyoti Das, Debasish Borah and Devabrat Mahanta	JCAP	1475-7516	2021	6.4
6	<i>Dark Sector Assisted Low Scale Leptogenesis from Three Body Decay</i>	Debasish Borah, Devabrat Mahanta and Arnab Dasgupta	Phys. Rev.D	24700010	2022	5.407
7	<i>Low Scale Dirac Leptogenesis and Dark Matter with Observable ΔN_{eff}</i>	Debasish Borah and Devabrat Mahanta	<i>Eur.Phys.J. C</i>	1286-0042	2022	4.994
8	<i>WIMPy Leptogenesis in Non-standard Cosmology</i>	Devabrat Mahanta and Debasish Borah	JCAP	1475-7516	2023	6.4
9	<i>Low Scale Leptogenesis From Three-Body Decay</i>	Devabrat Mahanta, Debasish Borah and Arnab Dasgupta	Springer Proceeding Physics	0930-8989	2023	
10	<i>Low Scale</i>	Labh Singh,	JCAP	1475-	2024	6.4

	<i>Leptogenesis in Singlet-Triplet Scotogenic Model</i>	Devabrat Mahanta and Surender Verma		7516		
11	<i>TeV scale Leptogenesis with triplet Fermion in Connection to Muon $g - 2$ and W mass anomaly</i>	Simran Arora, Devabrat Mahanta and Bagh Chand Chauhan	Phys. Rev.D	247000 10	2025	4.6
12	<i>Two-component Dark Matter and low scale Thermal Leptogenesis</i>	Subhaditya Bhattacharya, Devabrat Mahanta, Niloy Mondal, Dipankar Pradhan	arXiv:2412.21202		2025	

Conference/Seminars

- 1) “Anomalies 2019”, Indian Institute of Technology Hyderabad, Hyderabad, India.
- 2) “XVI Workshop on High Energy Physics Phenomenology: WHEPP2019”, Indian Institute of Technology Guwahati, Guwahati, India.
- 3) “IITG-Tokyotech-2020”, Indian Institute of Technology Guwahati and Tokyotech, Japan.
- 4) “Cosmology in Colombia 2020 ”, Colombia University, Colombia.
- 5) “Physics of the early Universe 2020”, ICTS, TIFR
- 6) “XXIV DAE-BRNS symposium on High Energy Physics 2020”, NISER, Jatni, Odisha.
- 7) “International Webinar Series on Introduction to Cosmology and Recent Developements”, 2020, Vellore Institute of Technology, Chennai, India.

- 8) “XXV DAE-BRNS symposium on High Energy Physics 2022”, IISER Mohali, Mohali, India.
- 9) “International Conference on Frontiers in Pure and Applied Physics 2024”, USTM, Meghalaya.
- 10) “17th International Conference on Interconnections between Particle Physics and Cosmology”, 12-14 October, IIT Hyderabad
- 11) “XIV Biennial Conference of Physics Academy of the North-East”, 12-14 November, 2024, Tezpur University.
- 12) “Focus Meeting on Cosmology and Gravitation”, IUCAA & Gauhati University, 8-10 January, 2025.

Workshops and Schools

- “Astronomy and Astrophysics Summer school 2016”, Cotton University in collaboration with IUCAA, Guwahati, India.
- “National Workshop on Gravitational Wave Astronomy 2017”, Dibrugarh University in collaboration with IUCAA, Dibrugarh, India.
- “SERB Preparatory school on Theoretical High Energy Physics 2018”, Hyderabad University.
- “Pedagogic Workshop on Astronomy, Astrophysics and Cosmology 2024”, IUCAA & Gauhati University.

Invited talks

- Invited talk on Dark Matter at Birjhora Mahavidyala, Bongaigaon, India.
- Invited talk on the importance of research in natural sciences at Nalbari College, Nalbari, India.
- “Effects of Non-Standard Cosmology on Matter Antimatter Asymmetry and Dark Matter”, invited talk at the Department of Physics and Astronomical Sciences, Central University of Himachal Pradesh.