

Dr. Mohit Mishra

CURRENT POSITION	Banaras Hindu University, Varanasi, India. Assistant Professor, Department of Mathematics	January 2025–
POST DOCTORAL EXPERIENCE	1) Indian Statistical Institute Delhi, New Delhi, Delhi, India. May 2023 – December 2024 NBHM Post Doctoral Fellow, Department of Mathematics. • Mentor: Prof. Shanta Laishram 2) Indian Institute of Technology Guwahati, Guwahati, India. November 2022 – May 2023 NBHM Post Doctoral Fellow, Department of Mathematics. • Mentor: Prof. Anupam Saikia 3) Indian Institute of Technology Kanpur, Kanpur, India. May 2022 - October 2022 Institute Post Doctoral Fellow, Department of Mathematics and Statistics. • Mentor: Prof. Sudhanshu Shekhar	
EDUCATION	1) Harish-Chandra Research Institute, Prayagraj, India. August 2017 - March 2022 Ph.D., Mathematics, • Thesis Topic: <i>Structure of the class group of totally real number fields.</i> • Advisor: Prof. Kalyan Chakraborty 2) Indian Institute of Technology Madras, Chennai, India. July 2015 - July 2017 M.Sc., Mathematics • Special papers: <i>Algebraic Topology, Commutative Algebra, Algebraic Geometry, Representation theory of finite groups.</i> • CGPA: 8.54 3) Dyal Singh College, University of Delhi B.Sc.(Hons.) Mathematics. • Percentage: 84.5	August 2012 - July 2015

RESEARCH INTERESTS

Algebra and Number Theory.

My area of research interest lies in algebraic number theory and the arithmetic of elliptic curves. I am interested in the study of the structure of the class group of totally real number fields. I have worked on the problems related to the structure of class group of real quadratic and real cyclotomic fields. I have also studied and worked on the Hilbert class field tower of totally imaginary as well as totally real number fields.

PAPERS AND PREPRINTS

- *A note on certain real quadratic fields with class number up to three* (with K. Chakraborty, A. Hoque) **Kyushu J. Math.**, **74**(1) (2020), 201–210.
- *Primary rank of the class group of real cyclotomic fields* (with K. Chakraborty, R. Agnihotri), **Rocky Mountain J. Math.**, **50**(6) (2020), 2149 – 2155.
- *Partial Dedekind zeta values and class numbers of R-D type real quadratic fields*, **Class groups of number fields and related topics**, Springer, **2020**, 163–174.
- *On the structure of order 4 class groups of $\mathbb{Q}(\sqrt{n^2+1})$* (with K. Chakraborty, A. Hoque) **Ann. Math. Qué.**, **45**(1) (2021), 203 – 212.
- *Class group of real cyclotomic fields* (with R. Schoof, L. C. Washington) **Monatsh. Math.**, **195** (2021), 489 – 496.
- *Lower bound for class number of certain real quadratic fields*, **Czechoslovak Math. J.**, 73(148) (**2023**), no. 1, 1–14.
- *Infinite Hilbert class field tower*, **Research in Number Theory**, **9** (**2023**), 49.
- *A note on the simultaneous 3-divisibility of class numbers of tuples of real quadratic fields* (with A. Saikia), **The Ramanujan Journal**, **64** (**2024**), 465–474.
- *On the class number of $\mathbb{Q}(\sqrt{(2^r a)^2 - y^p})$* (with S. Laishram and R. Agnihotri), accepted for publication in **The Ramanujan Journal**.

WORKSHOP & CONFERENCES ATTENDED

- **ICCGNFRT**, Organised by Kerala School of Mathematics, Kozhikode, Kerala, India (26–30 October, 2023).
- **NCM Workshop on Elliptic curves at IISER Thiruvananthapuram**, Kerala, India (3–15 April, 2023).
- **IECYRANT-2023**, Organised by Faculty of Sciences Dhar El Mahraz, Fez, Morocco (12–13 January, 2023).
- **ICCGNFRT**, Organised by Kerala School of Mathematics, Kozhikode, Kerala, India (21–24 November, 2022).
- **Elliptic curves and special values of L - functions (Hybrid)** at ICTS Bangalore, India. (08–19 August, 2022)
- **ICCGNFRT**, Organised by Kerala School of Mathematics, Kozhikode, Kerala,

India (21–24 October, 2021).

- [Young Researchers in Algebraic Number Theory \(online\)](#), University of Bristol, U.K. (Aug 18 – Aug 20, 2021).
- [Elliptic curves and special values of \$L\$ - functions \(online\)](#) at ICTS Bangalore, India. (02–07 August, 2021)
- [Online A.I.S on Local Fields \(online\)](#) at HRI Prayagraj, India (Jan – May, 2021).
- [International conference on Number Theory and Algebra \(online\)](#) at IIT BHU, Varanasi, India (22–23 December, 2020).
- [Workshop on Modular Form \(online\)](#) at IIT Guwahati, India (14–19 December, 2020).
- [International webinar on recent developments in number theory \(online\)](#) at KIIT Odisha, India (17–20 August, 2020).
- [Symposium on Number Theory](#), IIT Gandhinagar, Gandhinagar, India (22–23 December, 2019).
- [ICCGNFRT](#), Organised by HRI, Prayagraj, India (16–19 October, 2019).
- [AIS on Modular forms](#), IIT Guwahati, India (May 13 – June 01, 2019).
- [Workshop on group cohomology](#), HRI, Prayagraj, India (March 2019).
- [Workshop and conference on Number Theory](#) at School of Mathematics, NISER Bhubaneswar, India (Nov 30 – Dec 6, 2018).
- [ICCGNFRT](#) Organised by HRI, Prayagraj, India (08–11 October, 2018) .
- [AIS On Algebraic Number Theory](#) at IIT Guwahati, India (14 May – 02 June, 2018).

SEMINAR/ TALKS

- Lower bound for class number of certain real quadratic fields, ICCGNFRT, Harish-Chandra Research Institute, Allahabad (October, 2019).
- Class number of certain real quadratic fields, Symposium in Number theory, IIT Gandhinagar (December 2019.)
- Class group of number fields, Kerala School of Mathematics, Kozhikode (July, 2021).
- Class group of real cyclotomic fields, Young Researchers in Algebraic Number Theory (Online), University of Bristol, U.K. (August, 2021).
- Class group of real cyclotomic fields, IECYRANT-2023, Organised by Faculty of Sciences Dhar El Mahraz (online), Fez, Morocco (12–13 January, 2023).

AWARDS

- Received Inspire Faculty Fellowship

June 2025

- Received Department of Atomic Energy NBHM PDF Fellowship for Post Doctorate. August 2022
- Received 'HRI-Infosys Prize' of Harish-Chandra Research Institute for the year 2021 for excellence in research in Number Theory.
- Received Department of Atomic Energy Fellowship for Ph.D. Program at Harish Chandra Research Institute. August 2017 - July 2022
- Qualified CSIR JRF/NET. June 2017
- Qualified Joint Admission test for Masters (JAM). 2015