

Eknath Ghate



Employment

Tata Institute of Fundamental Research, Mumbai

Senior Professor I	2023–
Dean, School of Maths	2019–2021
Chief Vigilance Officer, TIFR	2018–2021
Professor H	2015–2022
Convenor Maths Subject Board	2013–2015
Associate Professor G	2009–2015
Reader F	2004–2009
Fellow D, E	1999–2004

Education

University of California, Los Angeles, 1996

Ph.D. in Mathematics, Dissertation year fellow

University of Pennsylvania, Philadelphia, 1991

B.A. in Mathematics, year III and IV, Summa cum laude

St. Stephen's College, New Delhi, 1987–1989

B.Sc. in Mathematics, year I and II, University topper year I

Honors and Awards

- Fellow of the Indian National Science Academy, 2021
- JTM Gibson Award for Excellence, 2019
- Fellow of the Indian Academy of Sciences, 2014
- Shanti Swarup Bhatnagar Award for Mathematical Sciences, 2013

Editorial Boards

- Research in Number Theory, Springer.
- The Ramanujan Journal, Springer
- Indian Journal of Pure and Applied Mathematics, Springer.

Students

Supervised eight Ph.D. Students and provided guidance to twenty-seven Bachelors and Masters students.

Address

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Highlights of Recent Research

Over the last decade, Professor Ghate's research has been dedicated to computing the reductions of local two-dimensional Galois representations. This work has been in collaboration with several mathematicians. Both crystalline and semi-stable cases have been considered.

Recently, Professor Ghate managed to prove his zig-zag conjecture on the reductions of crystalline representations of large exceptional weights and half-integral slopes. This uncovers a surprising alternating pattern of irreducible and reducible reductions.