

# Eknath Ghate



## Employment

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### 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

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### 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

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- 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

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

## Students

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

### Address

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### Highlights of Recent Research

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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.