
Personal Information

Name Jyothsnaa Sivaraman
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Employment

- 1 Mar 2024 – **Assistant Professor Grade I**, *Indian Institute of Science Education and Research Thiruvananthapuram*, Thiruvananthapuram, India
Present
- 15 May 2023 – **INSPIRE Faculty fellow**, *Mathematics and Statistics unit, Indian Statistical Institute, Bangalore Center*, Bangalore, India
– 29 Feb 2024
Mentor: Prof. B. Sury.
- 1 Mar 2022 – **NBHM Postdoctoral fellow**, *Chennai Mathematical Institute*, Chennai, India
12 May 2023
Mentor: Prof. Purusottam Rath.
- 1 Mar 2021 – **Postdoctoral fellow**, *Chennai Mathematical Institute*, Chennai, India
28 Feb 2022
Mentor: Prof. Purusottam Rath.
- 1 Aug 2019 – **Postdoctoral fellow**, *Department of Mathematics, University of Toronto*, Toronto, Canada
12 Jan 2021
Mentor: Prof. V. Kumar Murty.

Education

- 2016–2019 **Senior Research Fellow**, *The Institute of Mathematical Sciences*, Chennai, India,
Completed Doctorate in Mathematics
Thesis title: On Euclidean ideal classes in abelian extensions,
Thesis advisor: Prof. Sanoli Gun.
- 2014–2016 **Junior Research Fellow**, *The Institute of Mathematical Sciences*, Chennai, India,
Completed Master of Science in Mathematics
Master's thesis title: Aspects of Diophantine approximation,
Thesis advisor: Prof. Sanoli Gun.
- 2008–2012 **Bachelor of Engineering**, *Birla Institute of Technology and Science, K. K. Birla Goa campus*, Goa, India
Specialized in Electrical and Electronics.

Research Interest

Analytic aspects of algebraic numbers.

[Algebraic Number Theory](#)

[Sieve Methods](#)

Applications of sieve methods to problems in algebraic number theory.

Publications/ Preprints

1. **On Gerth's heuristics for certain quadratic extensions of a Galois number field of class number 1**, C. G. K. Babu, R. Bera, J. Sivaraman, B. Sury, Ramanujan Journal, 68 (2025), article number 1.
2. **Representing ideal classes of ray class groups by product of prime ideals of small size**, J.-M. Deshouillers, S. Gun, O. Ramaré, J. Sivaraman, Mathematische Zeitschrift, 310 (2025), 310, pp 68.
3. **On the refined Koblitz conjecture**, S. Dey, A. Saha, J. Sivaraman, A. Vatwani, Journal of Mathematical Analysis and Applications, 546 (2025), Issue 1, 129-212.
4. **An application of counting ideals in ray classes**, S. Gun, O. Ramaré, J. Sivaraman, Acta Arithmetica, 216 (2024), no. 2, 99-121.
5. **A note on the two variable Artin's conjecture**, S. Hazra, M. Ram Murty, J. Sivaraman, Journal of Number Theory, 262 (2024), 161-185.
6. **On Markoff type surfaces over number fields and the arithmetic of Markoff numbers**, S. Kim, D. Schindler, J. Sivaraman, Research Directions in Number Theory: Women in Numbers V, Eds. A. Bucur, W. Ho, R. Scheidler, Association for Women in Mathematics Series, Springer Cham (2024), 271-293.
7. **Explicit upper bounds on the average of Euler-Kronecker constants of narrow ray class fields**, N. Kandhil, R. Lunia, J. Sivaraman, Research in Number Theory, 9 (2023), Paper no: 69.
8. **Counting ideals in ray classes**, S. Gun, O. Ramaré, J. Sivaraman, Journal of Number Theory, 243 (2023), 13-37.
9. **Euclidean ideal classes in Galois number fields of odd prime degree**, V. Kumar Murty, J. Sivaraman, Research in Number Theory, 8 (2022), Paper no: 51.
10. **Primitive roots for Pjateckii-Šapiro primes**, J. Sivaraman, Journal de Theorie des Nombres de Bordeaux, 33 (2021), no. 1, 83-94.
11. **On existence of Euclidean ideal classes in real cubic and quadratic fields with cyclic class group**, S. Gun, J. Sivaraman, Michigan Mathematical Journal, 69 (2020), no. 2, 429-448.
12. **On Euclidean ideal classes in certain Abelian extensions**, J.-M. Deshouillers, S. Gun, J. Sivaraman, Mathematische Zeitschrift, 296 (2020), no. 1 - 2, 847-859.
13. **Existence of Euclidean ideal classes beyond certain rank**, J. Sivaraman, Journal of Ramanujan Mathematical Society, 34 (2019), no. 4, 427-432.
14. **On the existence of near-primitive roots**, J. Sivaraman. (In preparation)

15. **Diophantine approximation with primes in an arithmetic progression**, D. Mazumder, J. Sivaraman. (In preparation)

Teaching Experience

As instructor

Course Instructor for MAT321/403/3505: Complex analysis, at IISER Thiruvananthapuram, Thiruvananthapuram, India, July 28, 2025 - Present. (Course for third year BS-MS students and 1st year M. Sc. students)

Course Instructor for MAT2012/424/4214: Number Theory and Cryptography, at IISER Thiruvananthapuram, Thiruvananthapuram, India, Jan 1 - May 29, 2025. (Course for second year BS-MS students, fourth year BS-MS students and 1st year M. Sc. students)

Course Instructor for MAT/MSM 313: Linear algebra, at IISER Thiruvananthapuram, Thiruvananthapuram, India, July 29 - Dec 5, 2024. (Course for third year BS-MS students and 1st year M. Sc. students)

Course Instructor for Introduction to Sieve methods, at the Chennai Mathematical Institute, Chennai, India, Jan 3, 2023 - May 12, 2023. (Course for third year B. Sc students and M. Sc. students)

Course Instructor for Algebraic number theory, at the Chennai Mathematical Institute, Chennai, India, Sept 23 - Dec 14, 2021 - Taught jointly with Prof. Purusottam Rath. (Course for second and third year B. Sc students)

Course Instructor for MAT223F : Linear algebra, at the University of Toronto, Toronto, Canada, Sept 10 - Dec 20, 2020. (Course for second year students in Arts and Sciences)

Course Instructor for MAT223S : Linear algebra, at the University of Toronto, Toronto, Canada, Jan 6 - Apr 25, 2020. (Course for second year students in Arts and Sciences)

Course instructor for MAT188F : Linear algebra held at the University of Toronto, Toronto, Canada, Sept 1 - Dec 25, 2019. (Course for first year Engineering students)

As Tutorial assistant

Tutorial Assistant for Algebra and Complex analysis at Annual Foundation School - I, held at Pondicherry University, Pondicherry, India, Jun 6 - 11, 2022. (Course for graduate students)

Tutorial Assistant for a course in Linear algebra, held at the Chennai Mathematical Institute, Chennai, India, Aug 1-Nov 30, 2017. (Course for first year B. Sc students)

Tutorial Assitant at the Advanced Instructional School on Class field theory, held at the Chennai Mathematical Institute, Chennai, India, May 8-27, 2017. (Course for doctoral students)

Tutorial Assitant for a course in Algebra II - Galois theory, held at The Institute of Mathematical Sciences, Chennai, India, Jan 1-Apr 30, 2017. (Course for graduate students)

Tutorial Assistant for the Refresher course on Algebraic number theory for college teachers, held at Kerala School of Mathematics, Kozhikode, India Feb 9-12, 2017. (Course for college teachers)

Tutorial Assistant for a course on Complex analysis, held at Chennai Mathematical Insitute, Chennai, India Jan 1-Apr 30, 2016. (Course for second year B. Sc students)

Invited talks

Delivered a talk at the Annual Indian Women and Mathematics conference, on the 10th July 2025 at IIT Patna, Patna, India.

Delivered a series of lectures on Number theory and Cryptography from 21st May 2025 to 24th May 2025 for the '13th Summer training program in Mathematics' held at the Ramanujan Institute for Advanced Study in Mathematics, University of Madras, Chennai, India.

Delivered a talk at the conference titled, 'Analytic number theory' held in honour of Prof. Olivier Ramaré, on the 6th Feb 2025 at IISER Berhampur, Odisha, India.

Delivered a talk at the Women In Numbers (WIN 2025) symposium on 18th Jan 2025 at IISER Pune, Maharashtra, India.

Delivered a talk at the International Conference on Transcendence, Arithmetic and Diophantine Explorations held in honour of Prof. Sinnou David and Prof. Patrice Philippon, on 5th Jan 2025 at Kerala School of Mathematics, Kozhikode, Kerala, India.

Delivered a talk at the 39th Annual Conference of the Ramanujan Mathematical Society (RMS 2024) on 29th Dec 2024 at CHRIST (Deemed to be University), Bengaluru, India.

Delivered a talk at the conference titled, 'Celebrating Number Theory in India,' held in honour of Prof. M. Ram Murty, on the 12th Dec 2024 at IISER Pune, Maharashtra, India.

Delivered an invited talk at the Indian Institute of Space Science and Technology, Thiruvananthapuram, Kerala, India on 22nd Nov 2024.

Delivered a talk at the Inaugural meeting of Asian-Oceanian Women in Mathematics (AOWM) on the 25th Apr 2023.

Delivered a talk at the PIMS (Pacific Institute for the Mathematical Sciences) Collaborative Research Group weekly seminar on the 15th Mar 2023, online.

Delivered a talk at the Chennai-Tirupati number theory seminar on the 12th Feb 2023 at the Chennai Mathematical Institute.

Delivered a talk at the 88th Annual conference of the Indian Mathematical Society on 29th Dec 2022 at Birla Institute of Technology, Mesra, Ranchi, India.

Delivered a talk at the Women in Numbers 5 conference held online on 31st Aug 2021.

Delivered a talk at the seminar of the Indian number theory working group on 12th May 2021 at the Institute of Mathematical Sciences, Chennai, India.

Delivered a talk at the Queen's University number theory seminar on 12th Mar 2021 at Queen's University, Kingston, Canada.

Delivered a talk at the American Mathematical Society Fall sectional meeting on 3rd Oct 2020 held online at the Pennsylvania State University, Pennsylvania, USA.

Delivered a talk at the Indo-Japan meeting on 14th Feb 2019 at the Institute of Mathematical Sciences, Chennai, India.

Delivered a talk at the Indo-French conference on 18th Jan 2019 at the Institute of Mathematical Sciences, Chennai, India.

Delivered a talk at the conference on Diophantine approximation, transcendence, topological dynamics and topics in related areas of number theory and combinatorics on 4th Jan 2019 at Ramakrishna Mission Vivekananda Educational and Research Institute, Belur, Kolkata, India.

Delivered a talk at the Inter-city number theory seminar on 17th Dec 2018 at Indian Institute of Science Education and Research, Tirupati, India.

Delivered a talk at the Workshop on modular forms on 14th Oct 2018 at Kerala School of Mathematics, Kozhikode, India.

Other Activities

Events organised

1. Organised a conference titled "Modular forms : in honour of Prof. B. Ramakrishnan's 60th birthday" jointly with Rashi Lunia and Biplab Paul. (17th-19th September 2021)
2. Organised a Working Group Meeting at IISER Thiruvananthapuram, jointly with Prof. Sanoli Gun. (17th-19th July 2024)

Academic visits

IIT Patna, Patna, India during July 10-12, 2025.

IISER Berhampur, Odisha, India during Feb 5-7, 2025.

IISER Pune, Maharashtra, India during Jan 17-19, 2025.

Kerala School of Mathematics, Calicut, Kerala, India during Jan 3-5, 2025.

Indian Institute of Space Science and Technology on Nov 22, 2025.

International Center for Theoretical Sciences (ICTS - TIFR), Bangalore, India during Apr 24-28, 2023.

Queen's University, Kingston, Ontario, Canada on Feb 19, 2020.

Brock University, St. Catharines, Ontario, Canada on Jan 10, 2020.

Harish-Chandra Research Institute, Allahabad, India during Sep 22-Oct 7, 2018.

Institut de Mathématiques de Jussieu - Paris Rive Gauche, Paris, France during Jul 3-31, 2017.

Conferences attended

Conference titled, 'Analytic number theory' held in honour of Prof. Olivier Ramaré, from Feb 3-7 2025 at IISER Berhampur, Odisha, India.

Women In Numbers (WIN 2025) symposium from Jan 17-19 2025 at IISER Pune, Maharashtra, India.

International Conference on Transcendence, Arithmetic and Diophantine Explorations held in honour of Prof. Sinnou David and Prof. Patrice Philippon, from Jan 3-5 2025 at Kerala School of Mathematics, Kozhikode, Kerala, India.

The 39th Annual Conference of the Ramanujan Mathematical Society (RMS 2024) from Dec 27-29, 2024 at CHRIST (Deemed to be University), Bengaluru, India.

Celebrating Number Theory in India, held in honour of Prof. M. Ram Murty, from Dec 9-13 2024 at IISER Pune, Maharashtra, India.

Inaugural meeting of Asian-Oceanian Women in Mathematics (AOWM) from Apr 24-28, 2023 at International Center for Theoretical Sciences (ICTS - TIFR), Bangalore, India .

Balu Fest held online from Mar 12-18, 2021 at the Institute of Mathematical Sciences.

American Mathematical Society Fall sectional meeting held online from Oct 3-4, 2020 at the Pennsylvania State University.

Women in Numbers 5 held in Canada, 2020.

Canadian Mathematical Society winter meeting from Dec 6-9, 2019 held in Toronto, Canada .

Indo-Japan meeting from Feb 13-15, 2019 held at the Institute of Mathematical Sciences, Chennai, India.

Indo-French conference from Jan 16-18, 2019 held at the Institute of Mathematical Sciences, Chennai, India.

Workshop and conference on Diophantine approximation, transcendence, topological dynamics and topics in related areas of number theory and combinatorics from Jan 03-13, 2019 held at Ramakrishna Mission Vivekananda Educational and Research Institute, Belur, Kolkata, India.

Inter-city number theory seminar from Dec 17-18, 2018 held at Indian Institute of Science Education and Research, Tirupati, India.

Workshop on modular forms from Oct 12-14, 2018 held at Kerala School of Mathematics, Kozhikode, India.

The mathematics of Artin's conjectures from May 21-25, 2018 held at Yerevan state university, Yerevan, Armenia.

Number theory: arithmetic, diophantine and transcendence from Dec 22-25, 2017 held at Indian Institute of Technology Ropar, Ropar, India.

Computer skills

C, SAGE, Java, LaTeX