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### Personal Information

Name Jyothsnaa Sivaraman  
Gender Female  
Nationality Indian

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### Employment

Mar 2022 – **NBHM Postdoctoral fellow**, *Chennai Mathematical Institute*, Chennai, India.  
Present  
Mar 2021 – **Postdoctoral fellow**, *Chennai Mathematical Institute*, Chennai, India.  
Feb 2022  
Aug 2019 – **Postdoctoral fellow**, *Department of Mathematics, University of Toronto*, Toronto,  
Jan 2021 Canada.  
Mentor: Prof. V. Kumar Murty.

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### 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.

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### Research Interest

Analytic aspects of algebraic numbers

#### Algebraic Number Theory

Euclidean ideal classes, Class Field Theory, Linnik's problem, Hasse failures, Koblitz's conjecture.

#### Sieve Methods

Applications of sieve methods to problems in algebraic number theory.

#### Analytic Number Theory

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## Teaching Experience

### As instructor

Course Instructor for Algebraic number theory, at the Chennai Mathematical Institute, Chennai, India, Sept 23 - Dec 14, 2021.

Course Instructor for MAT223F : Linear algebra, at the University of Toronto, Toronto, Canada, Sept 10 - Dec 20, 2020.

Course Instructor for MAT223S : Linear algebra, at the University of Toronto, Toronto, Canada, Jan 6 - Apr 25, 2020.

Course instructor for MAT188F : Linear algebra held at the University of Toronto, Toronto, Canada, Sept 1 - Dec 25, 2019.

### 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.

Tutorial Assistant for a course in Linear algebra, held at the Chennai Mathematical Institute, Chennai, India, Aug 1-Nov 30, 2017.

Tutorial Assistant at Advanced Instructional School on Class field theory , held at the Chennai Mathematical Institute, Chennai, India, May 8-27, 2017.

Tutorial Assistant for a course in Algebra II - Galois theory, held at The Institute of Mathematical Sciences, Chennai, India, Jan 1-Apr 30, 2017.

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

Tutorial Assistant for a course on Complex analysis, held at Chennai Mathematical Institute, Chennai, India Jan 1-Apr 30, 2016.

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## Publications/ Preprints

### Published papers

**Counting ideals in ray classes**, S. Gun, O. Ramaré, J. Sivaraman, Published online at <https://doi.org/10.1016/j.jnt.2022.08.005>

**Euclidean ideal classes in Galois number fields of odd prime degree**, V. Kumar Murty, J. Sivaraman, Res. Number Theory 8 (2022), Paper no : 51.

**Primitive roots for Pjateckii-Šapiro primes**, J. Sivaraman, J. Th. Nombres Bordeaux, 33 (2021), no. 1, 83-94.

**On existence of Euclidean ideal classes in real cubic and quadratic fields with cyclic class group**, S. Gun, J. Sivaraman, Michigan Math. J., 69 (2020), no. 2, 429-448.

**On Euclidean ideal classes in certain Abelian extensions**, J.-M. Deshouillers, S. Gun, J. Sivaraman, Math. Z., 296 (2020), no. 1 - 2, 847-859.

**Existence of Euclidean ideal classes beyond certain rank**, J. Sivaraman, J. Ramanujan Math. Soc., 34 (2019), no. 4, 427-432.

### Submitted papers

**On the refined Koblitz conjecture**, S. Dey, A. Saha, J. Sivaraman, A. Vatwani.

**On Markoff type surfaces over number fields and the arithmetic of Markoff numbers**, S. Kim, D. Schindler, J. Sivaraman.

**Representing ideal classes of ray class groups by product of prime ideals of small size**, J.-M. Deshouillers, S. Gun, O. Ramaré, J. Sivaraman.

**An application of counting ideals in ray classes**, S. Gun, O. Ramaré, J. Sivaraman.

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### Invited talks

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

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

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

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

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

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

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

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

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### Other Activities

#### Conferences organised

Organised a conference titled "Modular forms : in honour of Prof. B. Ramakrishnan's 60th birthday" jointly with R. Lunia and B.Paul.

#### Academic visits

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

Brock University, St. Catharines, Canada on Oct 24, 2019.

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

Harish-Chandra Research Institute, Allahabad, India during Dec 5-13, 2017.

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

Harish-Chandra Research Institute, Allahabad, India during Jan 22-29, 2017.

#### Conferences attended

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

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

Women in Numbers 5 held in Canada, 2020

CMS winter meeting held in Toronto, Canada during Dec 6-9, 2019.

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

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

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

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

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

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

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

Transcendental Numbers and Special Values of Dirichlet Series held at Indian Institute of Technology Ropar, Ropar, India during Dec 16-21, 2017.

International conference on number theory held at Kerala School of Mathematics, Kozhikode, India during Jan 9-13, 2017.

Number theory conference on arithmetic geometry and L-functions held at Kerala School of Mathematics, Kozhikode, India during Aug 17-21, 2016.

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#### Computer skills

C, SAGE, Java, LaTeX

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#### Link to my webpage

<https://jyothsnaasivaraman.github.io>