

# Curriculum Vitae

## Dr. Saurabh Kumar Singh

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### Education Qualification

Year	Examination	Board/University
2015	Ph.D. (Mathematics)	TIFR Mumbai
2010	M.Sc. (Mathematics)	Indian Institute of Technology Kanpur
2008	B.Sc.	Banaras Hindu University

### Ph. D. Thesis

- PhD in Mathematics, School of Mathematics, Tata Institute of Fundamental Research(TIFR) Mumbai, India, September 2015
  - Title of the Thesis: Some problems in Number Theory
  - Thesis Supervisor: Prof. A. sankaranarayanan

### Research Area

- Number Theory: Analytic Number Theory, Circle method,  $L$ -functions, Sub-convexity bounds, Riemann-Zeta function, Sieve methods

### Research Experience

- Assistant professor at **Indian Institute of Technology, Kanpur** from November 2019 till present.
- DST Inspire fellow at **Indian Statistical Institute, Kolkata** from August 2018- October 2019.
- Post-doctoral fellow at **Indian Statistical Institute, Kolkata** from January 2018 - July 2018.
- Visiting Scientist at **University of Ulm, Germany** from July 2017 to December 2017.
- Post-doctoral visiting fellow at **Indian Statistical Institute, Kolkata** from November 2015 - June 2017.

- Visiting Scientist at **Harish-Chandra Research Institute(HRI), Allahabad** during June - July 2015.

## Work Experience

- Organised seminar series (with Satadal Ganguly and Stephan Baier) named “ Number theory during lockdown” from 10th April to 31st July, 2020.

## Teaching Experience

- Teaching the course MTH-215 (An introduction to Number Theory) at **Indian Institute of Technology, Kanpur** during September 2020- current.
- Worked as tutor for the course MTH-102 (linear algebra and differential equations) at **Indian Institute of Technology, Kanpur** during January-May 2020.
- Worked as Teaching Assistant of analysis course for Summer Program In Mathematics (SPIM) and Annual Foundation School(AFS)- III at **Harish-Chandra Research Institute(HRI), Allahabad** during June- July 2015.
- Worked as Teaching Assistant at **Tata Institute of Fundamental Research(TIFR), Mumbai** during January 2011- April-2011, January 2012- April-2012 and January 2013- April-2013.

## Preprints and Publications

- K. Mallesham, Sumit Kumar and Saurabh Kumar Singh: *level aspect subconvexity bound for  $GL(3) \times GL(2)$  L-function* **Preprint**.
- Ratnadeep Acharya, Saurabh Kumar Singh: *Twisted sum of Hecke eigenvalue over quadratic*, **Preprint**.
- Ratnadeep Acharya, Prahlad Sharma and Saurabh Kumar Singh: *Depth aspect subconvexity bound for  $GL(2) \times GL(2)$  L-function* **preprint**.
- Aritra Ghosh, K. Mallesham, Sumit Kumar and Saurabh Kumar Singh: *Bounds for Del Pezzo surfaces of degree two* **Submitted**.
- Ratnadeep Acharya, Prahlad Sharma and Saurabh Kumar Singh: *Subconvexity bound for  $GL(2) \times GL(2)$  L-function-t aspect* **submitted**.
- K. Mallesham, Sumit Kumar and Saurabh Kumar Singh: *Spectral aspect subconvexity bound for  $GL(3) \times GL(2)$  L-function* **Submitted**.
- K. Mallesham, Sumit Kumar and Saurabh Kumar Singh: *Non-linear additive twist of Fourier coefficients of  $GL(3)$  Maass forms* **Submitted**.
- Saurabh Kumar Singh: *Sum of the Fourier coefficients of  $SL(3, Z)$  Hecke Maass forms over quadratics*, **Submitted**.

- Keshav Aggarwal and Saurabh Kumar Singh: *Sub-convexity bound for  $GL(2)$   $L$ -functions,  $t$ -aspect*, **Submitted to Mathematika**.
- R. Acharya and S. K. Singh: *An exponential sum involving Fourier coefficients of  $SL(2, \mathbb{Z})$  eigenforms*, **accepted** for publication in **Ramanujan Journal**.
- R. Acharya, S. Kumar, G. Maity and S. K. Singh: *Subconvexity bound for  $GL(2)$   $L$ -functions:  $t$ -aspect* **accepted** for publication in **Acta. Arith.**
- H. Maier and S. K. Singh: *On the set of divisors of Gaussian integers*, Ramanujan J. **50** (2019), no. 2, 355-366.
- R. Munshi and S. K. Singh: *Weyl bound for  $p$ -power twist of  $GL(2)$   $L$ -functions*, Algebra Number Theory **13** (2019), no. 6, 1395-1413.
- A. Sankaranarayanan, S. K. Singh and K. Srinivas : *Discrete mean square estimates for coefficients of symmetric power  $L$ -functions*, Acta Arith. **190** (2019), no. 2, 193-208.
- H. Maier and S. K. Singh: *On multiplicative functions with mean-value close to  $-1$  on primes*, J. Number Theory **197** (2019), 89-105.
- Saurabh Kumar Singh: *On double shifted convolution sum of  $SL(2, \mathbb{Z})$  Hecke eigenforms*, J. Number Theory **191** (2018), 258-272.
- Saurabh Kumar Singh: *On the Riesz means of  $\delta_k(n)$* , Hardy-Ramanujan Journal **40** (2017), 24-30.
- A. Sankaranarayanan, Saurabh Kumar Singh: *On the Riesz means of  $\frac{n}{\phi(n)}$  – III*, Acta. Arith. **170** (2015) no.3, 275-286.
- A. Sankaranarayanan, Saurabh Kumar Singh: *On the Riesz means of  $\frac{n}{\phi(n)}$  – II*, Arch. math. (Basel) **103** (2014), no. 4, 329-343.
- A. Sankaranarayanan, Saurabh Kumar Singh: *On the Riesz means of  $\frac{n}{\phi(n)}$* , Hardy-Ramanujan J. **36** (2013), 8-20.
- A. Sankaranarayanan, N. Saradha, Saurabh Kumar Singh: *Normality of some decimals generated by primes in a residue class*, J. Number Theory **133** (2013), no. 4, 1229-1250.

## Lecture

- Delivered a lecture series on “*Sieve method and its recent applications*” at Indian Statistical Institute, Kolkata during March- April, 2017.
- Delivered an student seminar talk on “*Modular forms and its application*” in school of mathematics, TIFR Mumbai in August 2015.
- Delivered an student seminar talk on “*Riemann Zeta functions and its properties*” in school of mathematics, TIFR Mumbai in June 2011.

## Paper presentations/Talk given

- Delivered a talk on “*Spectral aspect subconvexity bound for  $GL(3) \times GL(2)$   $L$ -functions*” in “Delta symbols and the subconvexity problem” at **American Institute of Mathematics, San Jose, California** during November 02 – 06, 2020.
- Delivered a talk on “*twist aspect subconvexity bound for  $GL(2)$   $L$ -functions*” in “Number Theory seminar” at **Indian Statistical Institute, Kolkata** on January 03, 2019.
- Delivered a contributed talk on “ *$t$ -aspect subconvexity bound for  $GL(2)$   $L$ -functions*” in “Symposium in Number Theory” at **IIT Gandhinagar** during December 22 – 23, 2019.
- Delivered a talk on “*Riemann zeta function and its properties*” at **Sikkim University** during March 07 – 08, 2019.
- Delivered a talk on “*Sub-convexity problems: Some history and recent developments*” in “Workshop on Number Theory” at **National Institute of Science Education and Research, Bhubaneswar** during November 30 to December 06, 2018.
- Delivered a talk on “*Subconvexity bounds for  $GL(2)$   $L$ -functions*” in “Colloquium” at **Tata Institute of Fundamental Research, Mumbai** on 23 August 2018.
- Delivered a talk on “*Subconvexity bounds for  $GL(2)$   $L$ -functions*” in “weekly seminar” at **Indian Institute of Technology Bombay** on 22 August 2018.
- Delivered a talk on “*Subconvexity bound for  $GL(2)$   $L$ -functions:  $t$ -aspect*” in “Discussion Meeting on Automorphic Forms” at **National Institute of Science Education and Research, Bhubaneswar** during December 21-27, 2016.
- Delivered a talk on “*On double shifted convolution sum of  $SL(2, \mathbb{Z})$  Hecke eigenforms*” in “International Conference of The Indian Mathematics Consortium(TIMC) in cooperation with American Mathematical Society(AMS)” at **Banaras Hindu University, Varanasi** during December 14 - 17, 2016.
- Delivered a talk on “*On the Riesz means of  $\frac{n}{\phi(n)}$  – III*” in “International Conference on Automorphic forms and application” at **Kerala School of Mathematics, Kozhikode** during February 13 - 14, 2015.
- Delivered a talk on “*On the Riesz means of  $\frac{n}{\phi(n)}$  – II*” in “International meeting on Number Theory” at **Tata Institute of Fundamental Research (TIFR), Mumbai** January 05-09, 2015.

### National/International Workshops Attended

- Attended workshop on “Delta symbols and the subconvexity problem” held at American Institute of Mathematics, San Jose, California during November 02 – 06, 2020.
- Attended workshop on “*Trace functions and their applications*” held at Monte Varità, Ascona, Switzerland during January 13-19, 2019.
- Attended workshop on “ *$L$ -functions: Open Problems and Current Methods*” held at Bonn, Germany during June 25-29, 2018.
- Attended preparatory course on “ *$L$ -functions and Automorphic forms*” held at Heidleberg, Germany during February 17-19, 2016.

- Participated in “*ATM Workshop in Analytic Number Theory*” held at IMSc, Chennai during October 19-24, 2015.
- Participated in workshop on “*Winter school on modular functions in one and several variables*” held at Goa University, Goa during December 08-16, 2014.
- Participated in workshop on “*Winter school on modular functions in one and several variables*” held at Goa University, Goa during December 08-16, 2014.
- Attended a ATM workshop on “*AIS Analytic Number Theory*” held at KIIT Bhubaneswar during June 10-30, 2013.
- Attended an Advance Training in Mathematics (ATM) workshop on “*Hilbert Modular forms and varieties*” held at K.S.O.M., Kozhikode during January 21-31, 2013.
- Attended an ATM Workshop on “*Advanced Training in Mathematics Workshop, Almora Mathematical Surveys*” held at Kumaun University, Almora during October 03-07, 2012.

### National/International Conferences Attended

- Participated and chaired a session in conference on “*Geometry of continued fractions: Ramanujam and his successors*” held at Central University of Himachal Pradesh during September 14-15, 2020.
- Participated and given a talk in conference on “*Symposium in number theory*” held at Indian Institute of Technology Gandhinagar during December 22-23, 2019.
- Participated in “*First JNT Biennial Conference*” held at Grand Hotel San Michel, Cetraro, Italy during July 22-26, 2019.
- Participated in Conference on “*Discussion Meeting on Automorphic Forms*” held at National Institute of Science Education and Research, Bhubaneswar during December 21-27, 2016.
- Participated in Conference on “*International Conference of The Indian Mathematics Consortium (TIMC) in cooperation with American Mathematical Society (AMS)*” held at Banaras Hindu University, Varanasi during December 14-17, 2016.
- Participated in Conference on “*L-functions and Automorphic forms*” held at Heidleberg, Germany during February 22-26, 2016.
- Participated in “*A conference celebrating 65th birthday of R. Balasubramanian*” held at IMSc., Chennai during December 14-18, 2015.
- Attended International Conference on “*International Meeting on Number Theory*” held at T.I.F.R., Mumbai during January 05-09, 2015.
- Participated in International Conference on “*Legacy of Srinivasa Ramanujan*” Delhi University, Delhi during December 17-22, 2012.
- Attended Lectures given by Prof. Peter Sarnak on “*The Ramanujan Conjecture and some diophantine equations*” at TIFR, Mumbai during May 18-24, 2012.
- Participated in International colloquium on “*Automorphic Representations and L-Functions*” held in TIFR, Mumbai during January 03-11, 2012

- Participated in Conference on “*Advances in Mathematical Sciences*” at Harish Chandra Research Institute, Allahabad during December 05-07, 2011.

### Awards and Fellowships:

- Received DST Inspire faculty award in July 2018.
- Awarded NBHM Post-doctoral fellowship in July 2016.
- All India Rank- 54 in GATE-2010 examination conducted by Indian Institutes of Technology.
- Awarded NBHM scholarship for M.Sc. students in second year of M.Sc.
- Awarded MCM scholarship for M.Sc. students at Indian Institute of Technology, Kanpur.
- All India Rank- 06 in JAM-2008 exams conducted by Indian Institutes of Technology.

### References

#### **Prof. Ritabrata Munshi**

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