

Biographical Sketch of Prof. S. A. Katre

S. A. Katre
Chair Professor
Lokmanya Tilak Chair
C/o Department of Mathematics
Savitribai Phule Pune University
Pune - 411 007, INDIA
email: sakatre@gmail.com
Phone: (Res.) 020-25455941 (M.) 9890001215

Date of Birth : 11th November 1955

Education

B. Sc. (Math). 1975 University of Pune
M. Sc. (Math). 1977 University of Pune
M. Phil. 1981 Panjab University
Ph. D. 1985 Panjab University
Thesis advisor: A. R. Rajwade.
Thesis: *Complete Solution of the Cyclotomic Problem for a Prime Modulus l and Related Topics.*

Employment

1977-1988 : S. P. College, Pune (including Teacher Fellowship at Panjab Univ., Chandigarh :1980-1984). 1988-uptodate : University of Pune, Pune.
Date of Joining Pune University as Reader : 16th June 1988
Last Occupation : Professor (From 27th July, 1998 upto 30th November 2017)
Head, Dept. of Math., SPPU (24th September 2012-24th September 2015)
Currently: Lokmanya Tilak Chair Professor, Savitribai Phule Pune Univ. (5th Feb. 2018 onwards for 2 years)

Specialization : Number Theory

Other Topics of Interest : Algebra, Combinatorics

Important Extension Activities

1. Regional Co-ordinator for Indian National Mathematical Olympiad for Maharashtra and Goa Region (1992-1995)
2. Deputy Leader of the Indian Team that participated in the Interna-

tional Math. Olympiad held in India (1996) and Argentina (1997).
Also Observer for IMO-2009, Bremen, Germany.

Visits/Conferences Abroad

1. Mar del Plata, Argentina
- Worked as Deputy Leader of the Indian Team in the International Mathematical Olympiad (IMO-97).
2. International Congress of Mathematicians (ICM-98) Berlin, Germany, 18th-27th Aug. 1998
- Presented a paper.
3. One Month Visit to Institut de Mathematique de Luminy, Marseille, France (8 Oct. - 6 Nov. 1999).
- Participated in the International Conference on Arithmetic, Geometry and Coding Theory (AGCT-7)(25th-29th Oct. 1999) and presented a paper.
4. International Congress of Mathematicians (ICM-2002) Beijing, China, 20th-28th Aug. 2002
- Presented a paper.
5. Observer for the 50th International Mathematical Olympiad, Bremen, Germany, 13-22 July, 2009.
6. 2 month research visit to Freie University, Berlin, Germany during Aug-October 2009 under the Erasmus-Mundus program.
7. 28th Midwest Conference on Combinatorics and Combinatorial Computing (MCCCC) held at University of Nevada Las Vegas during 22-24 October, 2014. Presented a contributed talk entitled "Gauss-Dickson-Jacobi Codes". Also presented another talk "Dimension of a Caterpillar" co-authored with Laleh Yahyaei.

List of publications of Prof. S. A. Katre

Ph.D. Thesis

Complete Solution of the Cyclotomic Problem for a Prime Modulus and Related Topics, Panjab Univ. (1984) - Supervisor : A. R. Rajwade.

Research Papers

1. On the Jacobsthal sum $\phi_9(a)$ and the related sum $\psi_9(a)$, **Math. Scand.** **53 (1983)**, 193-202 (with A. R. Rajwade). MR 86c:11061, Google Citations: 3
2. Euler's criterion for quintic nonresidues, **Canadian J. Math.** **37 (1985)**, 1008-1024 (with A. R. Rajwade). MR 87c:11020, Google Citations: 5
3. Unique determination of cyclotomic numbers of order five, **Manuscripta Math.** **53 (1985)**, 65-75 (with A. R. Rajwade). MR 86k:11020, Google Citations: 8
4. Complete solution of the cyclotomic problem in F_q for any prime modulus $l, q = p^\alpha, p \equiv 1 \pmod{l}$, **Acta Arith.** **45 (1985)**, 183-199 (with A. R. Rajwade). MR 87d:11095, MathSciNet Citations: 14
5. On the Jacobsthal sum $\phi_4(a)$ and the related sum $\psi_8(a)$, *Ann. Univ. Sci. Budapest Eötvös Sect. Math.* **29 (1986)**, 3-7 (with A. R. Rajwade). MR 88m:11066
6. Jacobsthal sums of prime order, **Indian J. Pure Appl. Math.** **17 (1986)**, 1345-1362 (with A. R. Rajwade). MR 88a:11132, Google Citations: 9
7. Resolution of the sign ambiguity in the determination of the cyclotomic numbers of order 4 and the corresponding Jacobsthal sum, **Math. Scand.** **60 (1987)**, 52-62 (with A. R. Rajwade). MR 88j:11047, Google Citations: 25
8. Cyclotomic numbers and a conjecture of Snapper, **Indian J. Pure Appl. Math.** **20 (1989)**, 99-103. MR 90e:11185, Google Citations: 3

9. Cyclotomic numbers of order $2l$, l an odd prime, **Acta Arith.** **69** (1995), 51-74 (with V. V. Acharya). MR 95j:11115, **Google Citations: 13**
10. Explicit evaluation of cyclotomic numbers of prime order, *A. V. Prasad Memorial Volume of Ranchi Univ. Mathematical Journal* **28** (1997), 77-84 (with Anuradha Narasimhan). MR 2000b:11135, **Google Citations: 4**
11. Number of points on the projective curves $aY^l = bX^l + cZ^l$ and $aY^{2l} = bX^{2l} + cZ^{2l}$ defined over finite fields, l an odd prime, **J. Number Th.** **77** No. 2 (1999), 288-313 (with N. Anuradha) MR 2000h:11067, **Google Citations: 13**
12. Matrices over orders in algebraic number fields as sums of k -th powers, **Proc. Amer. Math. Soc.** **128(3)**(March, 2000), 671-675 (with Sangita A. Khule). MR 2000e:11026, **Google Citations: 6**
13. Solving linear systems via Pfaffians, **Linear Algebra Appl.** **430** (2009), no. 4, 968–975. 15A06 [ISSN 0024-3795, Impact Factor 1.07 (2009)] (with R. A. Rao and D. N. Sheth). MR2489371, **Google Citations: 2**
14. Euler's criterion for septic nonresidues, **International J. Number Th.** (*World Scientific*) **6** No. 6 (2010), 1329-1347 (with Jagmohan Tanti) [ISSN 1793-0421, Impact factor 0.318 (2009)]
15. Jacobi sums and cyclotomic numbers of order l^2 , **Acta Arithmetica** **147** (2011), 33-49 [ISSN: 0065-1036 Impact Factor 0.508 (2009), 0.496 (2010), 0.435 (2011)](with Devendra Shirolkar). **Google Citations: 2**
16. Matrices over commutative rings as sums of k -th powers, **Proc. Amer. Math. Soc.** **141**, No. 1 (Jan. 2013), 103-113 [ISSN: 0002-9939, Impact Factor 0.64 (2009), 0.611 (2011)] (with Anuradha S. Garge). MR2988714, **Google Citations: 1**
17. On number graphs, Proc. State Level Conf. on Recent Trends in Math. and its Appli., **CTBC's International Res. J., Vol. 2**, Issue 8 (Special Issue) (2016), 6-12 (with Laleh Yahyaei).

18. Dimension of a caterpillar, **Jour. Comb. Math. Comb. Comp., USA 98 (August, 2016)**, pp. 3-15 (with Laleh Yahyaei)
19. Representation number of a caterpillar, **Jour. Comb. Math. Comb. Comp., USA 101 (May 2017)**, 47-57 (with Laleh Yahyaei).
20. Coprime index of a graph, **Electronic notes in Discrete Math. 60 (2017)**, 77-82 (Elsevier) (with Laleh Yahyaei and S. Arumugam)
21. Decompositions of λK_v into multigraphs with four vertices and five edges, **Ars Combinatoria, 136 (January, 2018)**, 287-316 (with Shahab Faruqi and Dinesh G. Sarvate) [ISSN: 0381-7032, Impact Factor 0.204 (2013/14), 0.278 (2012)]
22. Dimension of a Lobster, **AKCE International J. of Graphs and Combi. (October 2018)** (with Laleh Yahyaei), in press
23. On edge decompositions of a complete graph into smaller complete graphs, **J. Comb. Math. Comb. Comp., USA (2019)** to appear (with Shahab Faruqi and Dinesh Sarvate).

Publications in Conference Proceedings

24. Jacobsthal sums in terms of quadratic partitions of a prime, *Proc. Conference in Number Theory, Ootacamund, India, 1984*, Lecture Notes in Math., Springer Verlag **1122** (1985), 153-162. MR 87b:11081, **Google Citations: 7**
25. A discriminant criterion for matrices over orders in algebraic number fields to be sums of squares, *Proc. Symp. on Algebra and Number Th., Kochi, Kerala* (1990), 31-38 (with Sangita A. Khule). MR 92m:11125, **Google Citations: 4**
26. On numbers of solutions of equations over finite fields, *Proc. Instructional School, Alg. Nr. Th., Mumbai Univ.* (1995), 7pp.
27. Gauss-Jacobi sums and Stickelberger theorem, in *Cyclotomic Fields and Related Topics, Proc. Summer School, 1999, Pune*, Eds. S. D. Adhikari, S. A. Katre and Dinesh Thakur, Bhaskaracharya Pratishthana, Pune (2000), 75-92. MR1802376 (2002b:11161), **MathSciNet Citations: 1**

28. The cyclotomic problem, in *Current Trends in Number Theory, Proc. International Conf. on Number Theory, 2000, HRI, Allahabad*, Eds. S. D. Adhikari, S. A. Katre and B. Ramakrishnan, Hindustan Book Agency, New Delhi (2002), 59-72. MR1925641 (2003j:11147), **Google Citations: 5**
29. Matrices as sums of cubes over a commutative ring with unity, Proceedings of Int. Conf. on Emerging Trends in Math. and Computer Appli., Dec. 16-18, 2010, Sivakasi, Tamil Nadu, Allied Publ. (2010), 8-12 [ISBN 978-81-8424-6490] (with Kshipra Wadikar)
30. Generating MDS code using Vandermonde matrix, 2012 (ICPCCS2012), 10-12 Dec. 2012, Wadia Coll., Pune, Excel India publisher, New Delhi, pp 127-131 (2012) ISBN: 978-93-82062-76-9 (with Aditi Phadke and Pramod Shinde)
31. Computing primitive central idempotents in finite group algebra, Proceedings of the International Conference on Perspectives of Computer Confluences with Sciences 2012 (ICPCCS2012), 10-12 Dec. 2012, Wadia Coll., Pune, Excel India publisher, New Delhi, 137-141 (2012) ISBN: 978-93-82062-76-9 (with Vikas Jadhav)

Publications in Journals with ISSN numbers

32. Twin prime conjecture and generalisations, *Bulletin of the Marathwada Math. Soc.*, ISSN 0976-6049, **2**(2001), 64-70.
33. The factorisation of $x^n - 1$, *Bulletin of the Marathwada Math. Soc.*, ISSN 0976-6049, **3**(2002), 87-97.
34. Catalan's conjecture, *Bulletin of the Marathwada Math. Soc.*, ISSN 0976-6049, **6**, No. 2, (2005), 25-27.

Papers communicated for publication

1. Shahab Faruqi and S. A. Katre, Coprime index of union of copies of K_n
2. S. A. Katre and Laleh Yahyaei, **Representation Degree and Dimension of a Graph**

Preprints

1. Jacobsthal sums of order 6 (with V. V. Acharya)
2. 2×2 matrices as sums of cubes (with D. N. Sheth)
3. Uniform cyclotomy and the zeta function of a projective curve (with Aditi Phadke)

Articles Published in Pedagogical Journals

1. The Logo for IMO-1996, *Bona Mathematica* Vol.7, No.1-2 (1996), 3-5.

Chapters in books with ISBN numbers

1. Chapters : *Complete sets of mutually orthogonal latin squares* and *Design Theory, an Introduction* in Topics in Discrete Mathematics : Codes, Tableaux, Designs and Graphs, Proc. of All India Winter School in Discrete Math., Dept. of Math., Univ. of Pune-1989, New Age International Publications, 1997, ISBN 81-224-1115-0 (Editors: N. M. Singhi, N. S. Gopala Krishnan, D. M. Kulkarni, S. A. Katre).

Books Edited:

1. Topics in Discrete Mathematics : Codes, Tableaux, Designs and Graphs, Proceedings of All India Winter School in Discrete Mathematics, Dept. of Mathematics, Univ. of Pune-1989, New Age International Publications, 1997, ISBN 81-224-1115-0 (with N. M. Singhi, N. S. Gopala Krishnan and D. M. Kulkarni).
2. Cyclotomic Fields and Related Topics, Proceedings of "Summer School on Cyclotomic Fields, 1999", Bhaskaracharya Pratishtana, Pune, 2000 (with S. D. Adhikari and Dinesh Thakur) MR 2001f:11004
3. *Current Trends in Number Theory*, Proceedings of the HRI International Conference on Number Theory, 2000, published by Hindustan Book Agency, New Delhi, 2002 (with S. D. Adhikari and B. Ramakrishnan). ISBN 81-85931-33-X MR1925636 (2003c:11002)

4. Topics in Commutative Algebra and Combinatorics, Ramanujan Math. Society Lecture Notes Series in Mathematics- Vol. 4, 2007, (Ed.: With R. V. Gurjar, Ravi Rao, J. K. Verma). ISBN 978-81-902545-4-0
5. A. K. Agarwal, A. Raghuram and S. A. Katre, Recent Advances in Mathematics, Proceedings of 29th RMS Conference, June 2014, Pune, India, Published May 2015, Vol. 21, Lecture Notes in Mathematics, Ramanujan Mathematical Society. ISBN 978-93-80416-16-8.
6. An Excursion in Mathematics (12th Edition), published by Regional Coordinator, RMO and INMO, Bhaskaracharya Pratishthana, Pune, 2017 (with M. R. Modak and V. V. Acharya, V. M. Sholapurkar).

Journals Edited:

1. Bona Mathematica (A Pedagogical Journal in Mathematics):
Chief Editor - 1995-2003.

Worked on the editorial board of the following Indian journals:

1. Ranchi Univ. Mathematical Journal
2. Bulletin of the Marathwada Mathematical Society
3. Resonance (2003 and 2004)

General Articles on Mathematics (in Marathi Language) published in newspapers:

1. “Ganitahi Ranjak”, Raviwar Sakal dated 25th Oct. 1998.
2. Three short articles in “Sutiche Pan” - Series in Daily Sakal entitled “Gamati Ganitachya” during 15th April - 5th June 1999.

Research Work Supervised by Prof. S. A. Katre

M. Phil. Students

1. Sangita B. Vaidya - *Matrices as Sums of Squares* (1990).
2. Hemant Pawar - *Non-existence of a Projective Plane of Order Ten* (1992).
3. G. S. Gaikawad - *Kaprekar Convergence of r -digit g -adic numbers* (1994).
4. Selby Jose - *Serre's Conjecture and Complete Intersection Problem of Algebraic Curves.* (1995).
5. S. S. Munot - *Values of Quadratic Forms at Integral Points* (1998).
6. Manjusha Joshi - *Bézier Curves and Applications* (2004)
7. Anjali Pendse - *Bernoulli Numbers and Their Applications* (2005)
8. Himanee Apte - *Riemann Roch Theorem for Irreducible Plane Algebraic Curves* (2005)
9. Manju Suresh Prasad - *Imaginary Quadratic Fields of Class Number Two* (2015)
10. Kajabe Sandeep - *Euclidean Rings of Algebraic Integers* (2017)
11. Madake Yashwant Pandurang (Registered in 2013)

Ph.D. Students

1. V. V. Acharya - *Cyclotomic Numbers of Order $2l$, l an Odd Prime* (1997).
2. Anuradha Narasimhan - *Arithmetic Characterization and Applications of Jacobi Sums of Order l and $2l$* (2001).
3. D. N. Sheth - *Some Number Theoretic Problems about Matrices over Commutative Rings* (2003)

4. Aditi Bapat - *Uniform Cyclotomy and Related Zeta Functions* (2006).
5. Vinay V. Wagh - *On the Module of Derivations, the Module of Differentials and the Multiplicity of Certain Rings* (Co-guide: R. V. Gurjar) (2007).
6. Anuradha Gadre - *Waring's problem for Matrices over Commutative Rings with Unity* (2007).
7. Selby Jose - *Quillen-Suslin Theory* (Co-guide: R. A. Rao) (2008)
8. Devendra Shirolkar - *Applications of Jacobi Sums and cyclotomic numbers* (17 Jan. 2011)
9. Jagmohan Tanti - *Roots of unity in finite fields, Jacobi sums and Euler's criterion* (26 July, 2012) (Centre BP)
10. Vikas Jadhav - *Arithmetic Aspects of Group Representations, z-classes, Jacobi Sums and Codes* (Co-guide: Ravi Kulkarni) (Centre BP) (16 Dec., 2014) (Co-guide: Ravi Kulkarni) (Centre BP)
11. Rahul Kitture - *z-classes in Finite Groups* (16 Dec., 2014) (Co-guide: Ravi Kulkarni)
12. Kshipra Wadikar - *Criteria for Matrices to be Sums of k-th powers* (17 Feb., 2015)
13. Laleh Yahyaei - *The Study of Number Graphs and their Properties* (31 Oct., 2015)
14. Shahab Faruqi - *On Decompositions of Graphs* (6 Feb. 2017)
15. Himanee Apte (Registered in 2006) (Centre BP) (Thesis submitted in Aug. 2013)
16. Pramod Shinde (Provisionally admitted, 2014)

Guidance for Ph.D. students as Co-Guide:

17. Somjit Datta (Guidance as a Co-Guide. Guide: Dinesh Thakur) *On Jacobian Theta Functions, Rogers Series and Identities of the Rogers-Ramanujan Type* (Centre BP) (July, 2013)

18. Rupali Kavishvar (as a Co-Guide. Guide: Shailaja Katre) *Ganitavishayak Sanskrit Granthateel Parimanavichaar Aani Aadhunik Ganitashastra* (Centre: Sanskrit Dept., SPPU) (2017)
 19. Deepa Krishnamurthy (Provisionally admitted on 3rd September, 2015) (Guidance as a Co-Guide. Guide: Dilip Sheth)
 20. Sagar Vispute (Provisionally admitted on 3rd September, 2015) (Guidance as a Co-Guide. Guide: Dilip Sheth)
-

Other Qualifications and Experience of Prof. S. A. Katre

Conferences/Workshops/Summer Schools/Refresher Courses etc. organised as “Co-ordinator”

1. Organised a NASI-TMC Workshop on Ancient Indian Mathematics at SPPU, Pune during 1-14 August, 2018 consisting of online lecture series of 24 lectures of 1 hour duration.
2. Organised various Annual Foundation schools of NCM.
3. Organised an International Conference on History of Mathematics at SPPU, Pune (ISHM Conference) on the occasion of 900th Birth Anniversary of Bhaskaracharya
4. 29th Annual Conference of Ramanujan Mathematical Society organised at IISER, Pune during 23-27 June 2014 (Worked as Co-convener. A. Raghuram-Convener)
5. Annual Foundation School for research students (AFS-III) organised during May 26-June 21, 2014 (sponsored by NCM) at Univ. of Pune (organised with A. R. Shastri and V. V. Joshi)
6. Annual Foundation School for research students (AFS-III) organised during June 3-29, 2013 (sponsored by NBHM and NCM) at Univ. of Pune (organised with A. R. Shastri and V. V. Joshi)
7. Annual Foundation School for research students (AFS-II) organised during June 4-30, 2012 (sponsored by NBHM and NCM) at Univ. of Pune (organised with A. R. Shastri and V. V. Joshi)
8. Annual Foundation School for research students (AFS-I) organised during Dec. 5-31, 2011 (sponsored by NBHM) at IISER, Pune (organised with Rama Mishra).
9. National Workshop (Shortcourse) on Algebra and Algebraic Geometry, BIM and Univ. of Pune, 9th Dec. 2010 - 5th Jan. 2011 (organised with Prof. S. R. Ghorpade)
10. Sixth Annual Foundation School-Part II (AFS-II) BIM, Pune U., Pune, 31 May-26 June, 2010 (organised with Prof. A. R. Shastri)

11. Advanced Instructional School in Algebraic Geometry, (BIM, Pune), 30 Nov - 19 Dec. 2009 (organised with Prof. N. Nitsure)
12. Fifth Annual Foundation School-Part II, BIM and Univ. of Pune, Pune 8 June-4 July, 2009 (organised with Prof. A. R. Shastri)
13. Advanced Instructional School in Complex Analysis (BP and Univ. of Pune) 5th June to 2nd July, 2008 (organised with Prof. D. Thakur).
14. Advanced Instructional School (AIS) on Representation Theory & Applications at BP, Pune. 2-28 July, 2007
15. Advanced Training School for Lecturers (ATML) in Complex Analysis at BP, Pune. 14-26 May, 2007
16. High School Teachers Workshop on Mathematics at BP, 18-23 June, 2007 in Marathi, for Teachers from rural part of Maharashtra, sponsored by Lend-a-hand-India.
17. Advanced Instructional School (AIS) on Differential Geometry & Lie Groups at BP and Univ. of Pune, Pune. 1-28 Dec,06
18. The Annual Foundation School (AFS)-II at BP and Pune Univ., Pune 1-28, June, 2006 Notes at AFS-II
19. Annual Foundation School for research students (AFS-I) organised during Dec. 5-31, 2005 (sponsored by NBHM and Univ. of Pune) as a joint activity of Bhaskaracharya Pratishthana, Pune, and Dept. of Math., Univ. of Pune.
20. International Conference on Commutative Algebra and Combinatorics and International Workshop on Computational Algebraic Geometry, jointly organised by Bhaskaracharya Pratishthana Pune and Harish-Chandra Research Institute, Allahabad, 8-13 Dec. 2003.
21. National Workshop on \LaTeX and Mathematical Software, Bhaskaracharya Pratishthana and Dept. of Math., Univ. of Pune (9-13 June, 2003)
22. Workshop on Computational Aspects of Algebraic Geometry (Joint Activity of BP and HRI)- Jan 2003

23. Workshop on elliptic curves organised by Bhaskaracharya Pratishthana, Pune during July 16-19, 2001. Participated and also gave 2 lectures.
24. Winter School on Algorithms in Invariant Theory and Algebraic Geometry, Dept. of Maths., Univ. of Pune and Bhaskaracharya Pratishthana. (Dec. 9, 1999 - Jan. 1, 2000).
25. Summer School on Cyclotomic Fields, Dept. of Maths., Univ. of Pune and Bhaskaracharya Pratishthana. (June 7-30, 1999).
26. One-day Workshop on Computers for College Teachers, Dept. of Maths., Univ. of Pune (21st March 1999).
27. Workshop on Dynamical Ramsey Theory (Combinatorial Number Theory), Dept. of Maths., Univ. of Pune and Bhaskaracharya Pratishthana (16th June - 11th July 1997).
28. International Mathematical Olympiad Training Camp, Homi Bhabha Center for Science Education, Mumbai (May-June 1996).
29. U.G.C. Refresher Course for College Teachers, Dept. of Maths., Univ. of Pune (Aug.4-31,1994).
30. Summer School in Analysis for College Teachers, Bhaskaracharya Pratishthana,Pune (June 8-18, 1992).
31. All India Summer School in Number Theory, Bhaskaracharya Pratishthana and Dept. of Mathematics, Univ. of Pune (June 10-29, 1991).
32. All India Winter School in Discrete Mathematics, Dept. of Maths, Pune Univ.(Nov. 9-23,1989).

International Conferences attended

1. Fourth Matscience International Conference in Number Theory, Ootacamund (Jan. 5-10, 1984) – Presented a paper.
2. Indo-Soviet Symposium on Number Theory, Panjab University, Chandigarh (Jan 16-21, 1984) – Presented a paper.
3. Ramanujan International Conference on Analysis, Univ. of Pune (Dec.1987) – Presented a paper.

4. International Congress of Mathematicians (ICM-98), **Berlin, Germany** (Aug. 18-27, 1998) – Presented a paper.
5. International Conference on Arithmetic, Geometry and Coding Theory (AGCT-7) **Marseille-Luminy, France** (25th-29th Oct. 1999) – Presented a paper.
(This was attended during the one Month Visit to Institut de Mathematique de Luminy, Marseille, France, 8 Oct. - 6 Nov. 1999).
6. International Conference on Number Theory and Discrete Mathematics in Honour of Srinivas Ramanujan, Chandigarh, October 2-6, 2000, presented a paper.
7. International Conference on Number Theory, HRI, Allahabad, Nov. 2000 - Presented a paper.
8. Attended International Conference on Algebra and Geometry, Dec. 7-12, 2001 at University of Hyderabad, Hyderabad.
9. International Congress of Mathematicians (ICM-2002), **Beijing, China**, August 20-28, 2002. Participated and presented a paper.
10. Participated in joint India-AMS conference at Bangalore and Gave an Invited Talk, Dec. 2003.
11. International Congress of Mathematicians (ICM-2010), August 2010 at Hyderabad, participated and presented a talk. Also chaired a session.
12. (International) Satellite conference on Number Theory and Combinatorics at IMSc, Chennai, Aug-Sep. 2010, participated and gave a talk.
13. Midwestern Conference on Combinatorics and Combinatorial Computing at **Las Vegas, USA**, Oct. 23, 2014 (28th MCCC), presented 2 talks

Some National Conferences Attended

1. Participated in the 63rd Annual Conf. of Indian Academy of Sciences, ICT, Hyderabad, Nov. 1-3, 1997.
2. Annual Conference of Indian Science Congress, Jan. 3-7, 2000, Pune, Participated and gave a talk (Member for math. section.)

3. 88th Indian Science Congress, Jan. 3-7, 2001, New Delhi. Attended as a sessional member and gave a talk.
4. Workshop on combinatorial methods in group theory and number theory, ISI, Bangalore, May 14-20, 2001, attended and gave a talk.
5. 16th Annual Conference of Ramanujan Mathematical Society, Fergusson College, Pune, gave a talk on 4th June, 2001
6. Attended National Workshop on Emerging Frontiers of Combinatorial Optimization, June 21-28, 2002, Dept. of Math., Univ. of Pune. (Also, member of organising committee).

Special Honours

1. Invited to work as DEPUTY LEADER of the INDIAN TEAM that participated in INTERNATIONAL MATHEMATICAL OLYMPIAD twice : 1. Mumbai - India (1996).
2. **Mar del Plata - Argentina** (1997).
In Mumbai our team won 1 Gold, 3 Silver and 1 Bronze Medal.
In **Argentina**, our team won 3 Silver and 3 Bronze Medals.
2. Received **AMU-Best Paper Award in Algebra** at the Annual Conference of Indian Mathematical Society, Pune (1988)

Other Experience and Extension Activities

1. Worked as REGIONAL COORDINATOR for Regional and Indian National Mathematical Olympiad (RMO & INMO) for MAHARASHTRA and GOA Region for 3 years (June 1992 to Sept. 1995).
2. Working as member of NBHM-Library Committee for Western Region for the last three years.
3. Examiner of M.Phil. and Ph.D. theses of Indian Universities.
4. Worked in a UGC-project in the department entitled "Mathematical Modelling and Designing through Computer Graphics (MMDCG)" which dealt with application of Bezier curves to Font Designing.
5. Participated in a number of conferences/workshops as an invited speaker. Presented papers in a number of national/ international conferences.

6. Core Faculty Member at the NBHM-Sponsored Training Camp for INMO-awardees. Gave lectures and worked as a member of the committee selecting the Indian team for participation in International Mathematical Olympiad for the last 10 years.
7. Worked in various University Committees such as Ph. D. Committee, Selection Committees, LIC for P. G. Centres and Research Centres etc.
8. Worked in Various Departmental Committees such as Library Committee, M.Phil./Ph.D./Research Committee, Computer Committee, Purchase Committee, Exam. Committee etc.
9. Worked as DSA Coordinator for the Special Assistance Programme of UGC (Phase-III)(2002-07) and from 1st April, 2010-15 worked as Coordinator for the Centre for Advanced Study in Mathematics (UGC) at the Dept. of Mathematics, SPPU
10. Reviewer for Mathematical Reviews
11. Referee for papers of international journals
12. National Coordinating Committee Member for NBHM sponsored Advanced Training in Mathematics Schools
13. Custodian for Bhaskaracharya Pratishthana (Institute of Mathematics, Pune)
14. Worked as Senate Member, IISER, Pune (3 years)
15. G.B. Member of (Indian) Society for History of Mathematics
16. Treasurer, The Mathematics Consortium
17. NBHM Library Committee Member for Western Region and Coordinator for NBHM Book Distribution and Text Book Distribution Scheme

Courses taught at the M.Sc./M.Phil./Ph.D. level

1. Elementary Number theory
2. Algebraic Number Theory

3. Algebraic curves
 4. Field Theory
 5. Measure and Integration
 6. Algebraic Topology
 7. Linear Algebra
 8. Numerical Analysis
 9. Advanced Calculus
 10. Discrete Mathematics
 11. Computer Programming in C++
 12. Commutative Algebra
 13. Algebra (Groups and Rings)
 14. Coding Theory
 15. Group Theory
 16. Cryptography
 17. Lie Groups and Lie Algebras
 18. Research Methodology
-