

Curriculum Vitae

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BROAD AREAS OF INTEREST

- Lie groups, Lie algebras, Dynamical Systems.

EMPLOYMENT AND EXPERIENCE

- John Wesley Young Research Instructor at Dartmouth College, NH, USA, From July 2007.
- Adjunct Professor in Department of Mathematics, University of Western Ontario, London, Canada, September 2006 - June 2007.
- Visiting Scientist at Indian Statistical Institute, Bangalore, September - December 2005.
- Visiting fellow at School of Mathematics, TIFR, Mumbai, July-August 2005.
- TWAS postdoctoral fellow in Universidad Nacional de Córdoba, Córdoba, Argentina, April-June 2005.
- Research Scholar at School of Mathematics, Tata Institute of Fundamental Research, Mumbai, from August 1999 to March 2005.
- NBHM (National Board for Higher Mathematics) Research Scholar at School of Mathematics, Tata Institute of Fundamental Research, Mumbai, August 1998-July 1999.
- Lecturer at Gogate Jogalekar college, Ratnagiri, India (affiliated to the University of Mumbai), August 1997- April 1998.

EDUCATION

- Fall 2005 **Ph. D. in Mathematics**
Tata Institute of Fundamental Research, Mumbai, India
THESIS: *Automorphisms of nilpotent Lie groups and nilmanifolds.*
ADVISOR: PROF. S. G. DANI.
- Winter 2000 **Master of Philosophy (M. Phil.) in Mathematics**
Department of Mathematics, University of Mumbai, India
DISSERTATION: *On convergence and limits of products of random variables with values in a compact group.*
ADVISOR: PROF. S. G. DANI.
- Spring 1997 **Master of Science in Mathematics**, University of Mumbai, India.
- Spring 1995 **Bachelor of Science in Mathematics**, University of Mumbai, India.

PUBLICATIONS

• Accepted Papers

- Anosov automorphisms on compact nilmanifolds associated with graphs, with S. G. Dani, *Trans. Amer. Math. Soc.* **357** (2005), 2235-2251.
- Anosov automorphisms on certain classes of nilmanifolds, *Glasg. Math. J.* **48** (2006), 161-170.
- Examples of Anosov Lie algebras, with C. E. Will, *Discrete Contin. Dynam. Systems* **18** (2007), no. 1, 39-52, <http://arxiv.org/abs/math.DS/0606036>.
- Anosov Lie algebras and algebraic units in number fields, accepted in *Monatsh. Math.*, available on http://www.math.dartmouth.edu/~mainkar/anosov_mona_revised

• Preprints

- Anosov automorphisms on nilmanifolds in dimensions 9 and 10, with C. E. Will, submitted, available on http://www.math.dartmouth.edu/~mainkar/mainkar_will_myhomepage.pdf
- A short note on 2-step nilpotent Lie algebras associated with graphs, submitted, available on <http://www.math.dartmouth.edu/~mainkar/isomorphism.pdf>

SCHOLARSHIPS, AWARDS AND SUPPORTS

- IMU support to attend ICM 2006, Madrid, Spain.
- TWAS fellowship to visit Universidad Nacional de Córdoba, Argentina, April-June 2005.
- Kanwal Rekhi Career Development Scholarship and TIFR Alumni Association Scholarship, 2002-2004.
- TIFR Research Scholarship from TIFR, Mumbai, India, 1999-2005.
- NBHM (National Board for Higher Mathematics) Research Scholarship, 1998-1999.
- Eligibility for lecturership in Mathematics, UGC-CSIR examination, June 1999.
- Eligibility for lecturership in Mathematics, State Eligibility Examination, Jan 1998.

TEACHING EXPERIENCE

- Linear Algebra (Math 24) in Spring 2009 at Dartmouth College.
- Introduction to Calculus (Math 3) in Winter 2008 at Dartmouth College.
- Calculus of Functions of One and Several Variables (Math 8) in Fall 2007, Winter 2008 and Spring 2009 at Dartmouth College.
- Linear Algebra with Applications (Math 22) in Fall 2007 at Dartmouth College.
- Linear Algebra 040a in Summer 2007 at University of Western Ontario.
- Linear Algebra 040a in Fall 2006 at University of Western Ontario.
- Lecturership in Gogate Jogalekar college, Ratnagiri (affiliated to the University of Mumbai), August 1997- April 1998.

SEMINARS AND CONFERENCE TALKS

- *Anosov automorphisms on nilmanifolds*, Seminar, IISER, Pune, Aug 5, 2010.
- *Anosov automorphisms on nilmanifolds*, Geometry Seminar, Dartmouth College, Jan 24, 2008.
- *Examples of nilmanifolds admitting Anosov automorphisms*, Colloquium, Washington University in St. Louis, Dec 14, 2006.
- *Examples of Anosov Lie algebras*, Lie Theory Seminar, University of Ottawa, Ottawa, Canada, Nov 15, 2006.
- *Anosov automorphisms on nilmanifolds*, Semi-annual Workshop in Dynamical Systems and Related Topics at Penn State, USA, Nov 2-5, 2006.
- *Examples of Anosov Lie algebras*, Algebra Seminar, University of Western Ontario, London, Canada, Oct 16, 2006.
- *Anosov automorphisms on nilmanifolds associated with graphs*, Lie Seminar, University of Wisconsin, Madison, USA, March 21, 2006.
- *Anosov automorphisms on nilmanifolds associated with graphs*, Colloquium, Washington University in St. Louis, Feb 17, 2006.
- *Anosov automorphisms on nilmanifolds associated with graphs*, Colloquium, Indian Institute of Technology, Mumbai, India, Aug 2005.
- *Anosov automorphisms on nilmanifolds associated with graphs*, II Workshop in Differential Geometry, La Falda, Sierras de Córdoba, Argentina, 6-11 June 2005.
- *Anosov automorphisms on nilmanifolds associated with graphs*, Differential Geometry Seminar, FaMAF, Univ. Nac. de Córdoba, Argentina, April 2005.
- *Anosov automorphisms on nilmanifolds associated with graphs*, Colloquium, Tata Institute of Fundamental Research, Mumbai, India, March 2005.
- *Calculus*, XXII BASE Symposium, Learning and Teaching Mathematics, at Nehru Science Centre, Worli, Mumbai, 28-29 Nov 2003.
- *Elliptic Curves and Modular Forms*, seminars conducted by Prof. C. S. Rajan, School of Mathematics, TIFR, Mumbai, Sep 2002.
- *Local Class Field Theory*, seminars conducted by Prof. Eknath Ghate, School of Mathematics, TIFR, Mumbai, April 2002.
- *Fourier Analysis*, refresher course conducted by Department of Mathematics, University of Mumbai for college teachers of Indian Universities under UGC programme, Jan 2001.

CONFERENCES AND WORKSHOPS ATTENDED

- Measures and Dynamics on groups and homogeneous spaces, An international conference in honour of S.G. Dani's 60th birthday, Tata Institute of Fundamental Research, Mumbai, India, Dec 18-22 2007.
- Sixth Workshop on Lie Theory and Geometry, La Cumbre, Cordoba, Argentina, Nov 13-17 2007.
- Geometry, Rigidity, and Group Actions, A conference in honor of Robert J. Zimmer's 60th Birthday, University of Chicago, Chicago, Sep 7-9 2007.

- Semi-annual Workshop in Dynamical Systems and Related Topics at Penn State, USA, Nov 2-5 2006.
- International Congress of Mathematicians, Madrid, Spain, August 22-30 2006.
- International Workshop on Global Dynamics Beyond Uniform Hyperbolicity, Northwestern University, Chicago, May 17-22, 2006.
- AMS Meeting (Spring 2006), Notre Dame, April 8-9 2006.
- II Workshop in Differential Geometry, La Falda, Sierras de Cordoba, Argentina, 6-11 June 2005.
- International Colloquium on Algebraic Groups and Homogeneous Spaces, School of Mathematics, TIFR, Mumbai, Jan 6-14, 2004.
- CIMPA (France) - TIFR (Mumbai, India) School on ‘Probability Measures on Groups’, Sep 9-22, 2002.
- International Conference on Algebraic Groups and Arithmetic, TIFR, Mumbai, Dec 17-22, 2001.
- International Colloquium in Algebra, Arithmetic and Geometry, TIFR, Mumbai, Jan 4-12 2000.

PROFESSIONAL SERVICE

- Refereed for Manuscripta Mathematica.
- Refereed for Dynamical Systems.

REFERENCES

Prof. S. G. Dani (Advisor)
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Prof. Renato Feres
Washington University in St. Louis
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